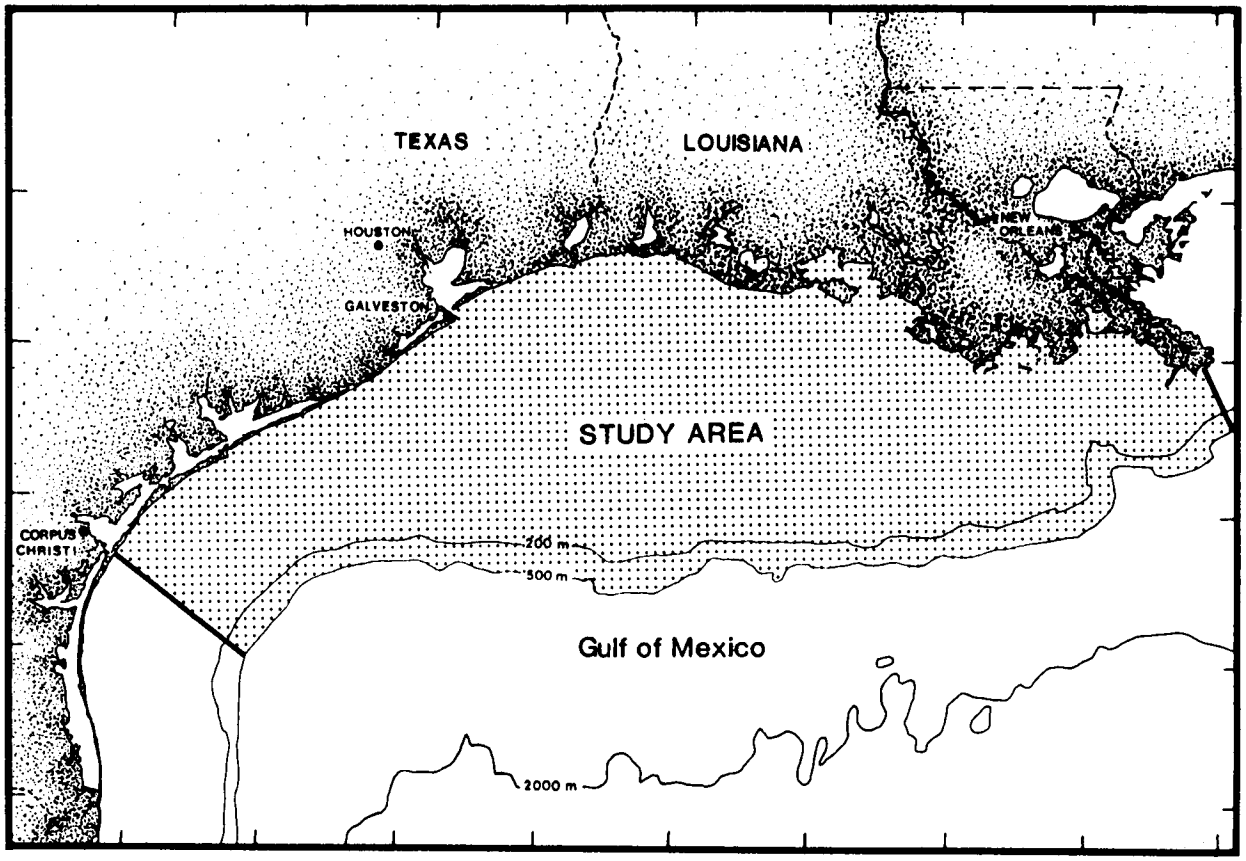
OCS Study
MMS 88-0068

Offshore Texas and Louisiana Marine Ecosystems Data Synthesis

Volume III: Annotated Bibliography



U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

OCS Study
MMS 88-0068

Offshore Texas and Louisiana Marine Ecosystems Data Synthesis

Volume III: Annotated Bibliography

Editors

Neal W. Phillips
Bela M. James
Continental Shelf Associates, Inc.

Prepared under MMS Contract
14-12-0001-30380
by
Continental Shelf Associates, Inc.
7607 Eastmark Drive, Suite 250
College Station, Texas 77840

Published by

U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Regional Office

New Orleans
November 1988

DISCLAIMER

This report was prepared under contract between the Minerals Management Service (MMS) and Continental Shelf Associates, Inc. This report has been technically reviewed by the MMS and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Service, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. It is, however, exempt from review and compliance with MMS editorial standards.

REPORT AVAILABILITY

Extra copies of the report may be obtained from the Public Information Unit (Mail Stop OPS-3-4) at the following address:

U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Regional Office
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Attention: Public Information Unit (OPS-3-4)

(Telephone Number: (504) 736-2519)

CITATION

Suggested citation:

Phillips, N.W. and B.M. James, eds. 1988. Offshore Texas and Louisiana marine ecosystems data synthesis, Volume III: Annotated Bibliography. OCS Study/MMS 88-0068. U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Regional Office, New Orleans, LA. 313 pp.

TABLE OF CONTENTS

Volume III--Annotated Bibliography

ACKNOWLEDGMENTS

Continental Shelf Associates, Inc. wishes to thank the following scientists from Texas A&M University for their participation in this program:

- Paul N. Boothe (Ph.D., Marine Science, Stanford University, 1978). Chapter co-author: Marine chemistry--trace metals, radionuclides.

- James M. Brooks (Ph.D., Oceanography, Texas A&M University, 1975). Chapter co-author: Marine chemistry--hydrocarbons, synthetic organics.

- Rezneat M. Darnell (Ph.D., Biology, University of Minnesota, 1953). Chapter co-author: Marine biology, conceptual modeling.

- Frank J. Kelly (M.S., Oceanography/Mathematics, Texas A&M University, 1978). Chapter author: Physical oceanography and meteorology.

- Thomas L. Linton (Ph.D., Fisheries, University of Michigan, 1965). Chapter author: Socioeconomics.

- B.J. Presley (Ph.D., Geology, University of California at Los Angeles, 1969). Chapter co-author: Marine chemistry--trace metals, radionuclides.

- Richard Rezak (Ph.D., Geology, Syracuse University, 1957). Chapter author: Marine geology.

- David J. Schmidly (Ph.D., Zoology, University of Illinois, 1971). Chapter co-author: Marine biology--endangered and threatened fauna.

We also wish to thank the Minerals Management Service (MMS) Contracting Officer's Technical Representative, Dr. Robert Avent, for guidance and technical review. The MMS Contracting Officer was Mr. Carroll D. Day.

Ms. Kristin Metzger of Harbor Branch Oceanographic Institution (Fort Pierce, FL) conducted the computer literature searches for us. We appreciate her knowledge and skills.

We thank the many government agencies and other organizations who provided literature and/or bibliographies. These are listed in the Methods chapter of the text.

The scientific participants from Continental Shelf Associates, Inc. are listed below, along with their role(s):

- Bela M. James (Ph.D., Oceanography, Texas A&M University, 1972). Program Manager.

- Neal W. Phillips (Ph.D., Ecology, University of Georgia, 1983). Scientific Editor.

- Donald R. Deis (M.S., Marine Biology/Ecology, Florida Atlantic University, 1978). Information Collection.

- David B. Snyder (M.S., Marine Biology/Ichthyology, Florida Atlantic University, 1984). Information Collection.

Participating administrative and clerical staff from Continental Shelf Associates, Inc. are listed below. We thank them for their help.

- Pamela M. Hudson -- Contracts Manager.
- Pamela S. Jones -- Copy Editor.
- Kathleen S. Larson -- Editorial Assistant.
- Suzanne R. Short -- Graphic Artist.
- Alexandra M. Mazzoni -- Word Processor Operator.
- Michelle H. Merz -- Word Processor Operator.
- Adrienne B. Holt -- Clerical.

PREFACE

One goal of the MMS Offshore Texas-Louisiana Marine Ecosystems Data Synthesis was to produce a computerized, annotated bibliography of environmental and socioeconomic literature for the Texas-Louisiana continental shelf. The bibliography was compiled through a combination of computer searches, telephone contacts, library visits, and submissions from chapter authors, as described in Chapter 2 of the Synthesis Report (Volume II).

There are two parts to the Annotated Bibliography: (1) a printed bibliography sorted by author and date; and (2) a set of data files, on IBM-compatible floppy disks, that have been indexed with a computer program (FYI 3000 Plus[1]) to allow searching by author, date, topic and geographic keywords, and words in the title and source. The disks have been submitted separately to the MMS with the Final Report.

The Annotated Bibliography consists of 1,535 references, of which 947 (62%) have abstracts. Each reference consists of several parts, as illustrated in the following example and described in the text below:

EXAMPLE OF BIBLIOGRAPHIC ENTRY

00005
Adams, R.; Barrett, B. 1986. Barataria Basin: Geologic processes and framework. Louisiana Sea Grant Pub. No. LSU-T-86-006. 150 p.

ABSTRACT: The geomorphic processes that created Louisiana wetlands are summarized, and natural and man-made processes causing marsh deterioration and land loss are discussed. Coastal resources are inventoried and assessed on environmental, parish, and basin levels.
KEYWORDS: Louisiana; estuary; marsh; Barataria Bay; geology; erosion; sea level; dredging; environmental impact;

REFERENCE NUMBER: These numbers (in large, boldface type) were assigned sequentially to the entries after all references were sorted by author and date.

CITATION: The citation begins on the line following the reference number. The first word of the citation (first author name) is in large, boldface type. The citation format follows the Council of Biology Editors Style Manual, Second Edition (as specified in the contract). There are two slight departures from this standard format: (1) names of all individual authors are given last name first, followed by initials; and (2) names of multiple authors are separated by semicolons. These

[1]FYI 3000 Plus is a trademark of FYI, Inc., Austin, TX.

changes were necessary for the computer indexing of authors (allowing searching).

ABSTRACT: The abstract is a short (up to 250 word) summary of the document contents. Most of the abstracts were obtained from the document (e.g., paper or report) or from other annotated bibliographies (e.g., Tuscaloosa Trend bibliography). Where no abstract was available at the time of data entry, the word "None" appears in this field.

KEYWORDS: Geographic and topic keywords were assigned to each reference in order to allow searching with the computer program. The geographic keywords identify the general study location (e.g., Texas, Louisiana, etc.); certain specific locations of particular interest, if applicable (e.g., Flower Garden Banks, Galveston Bay, Timbalier Bay); and certain major study areas (e.g., STOCS, Buccaneer Field, Strategic Petroleum Reserve). The topic keywords always include at least one of the following major descriptor(s): archaeology, biology, chemistry, fisheries, geology, oil and gas, physical, and socioeconomics. Subcategories under each major topic were also assigned. More detail on keyword assignments is provided in Chapter 2 of the Synthesis Report (Volume II).

LIST OF ABBREVIATIONS

API	--	American Petroleum Institute
BLM	--	Bureau of Land Management
COE	--	U.S. Army Corps of Engineers
DDT	--	Dichlorodiphenyltrichloroethane
DOE	--	U.S. Department of Energy
EIS	--	Environmental Impact Statement
EPA	--	U.S. Environmental Protection Agency
FCZ	--	Fishery Conservation Zone
FMP	--	Fishery Management Plan
GC	--	Gas chromatography
HMWH	--	High molecular weight hydrocarbon
LMWH	--	Low molecular weight hydrocarbon
MAFLA	--	Mississippi-Alabama-Florida
MMS	--	Minerals Management Service
MS	--	Mass spectrometry
NAS	--	National Academy of Sciences
NEDRES	--	National Environmental Data Referral Service
NMFS	--	National Marine Fisheries Service
NOAA	--	National Oceanic and Atmospheric Administration
NRC	--	National Research Council
NTIS	--	National Technical Information Service
OCS	--	Outer Continental Shelf
OEP	--	Odd-even preference
PAH	--	Polynuclear aromatic hydrocarbon
PCB	--	Polychlorinated biphenyl
SPR	--	Strategic Petroleum Reserve
SSMO	--	Sea Surface Meteorological Observation
STOCS	--	South Texas Outer Continental Shelf
TPWD	--	Texas Parks and Wildlife Department
TSM	--	Total suspended matter
UCM	--	Unresolved complex mixture
USDI	--	U.S. Department of the Interior
USFWS	--	U.S. Fish and Wildlife Service
USGS	--	U.S. Geological Survey
VLH	--	Volatile liquid hydrocarbon
VOC	--	Volatile organic compound

ANNOTATED BIBLIOGRAPHY

00001
Abbott, R.E. 1975. The faunal composition of the algal-sponge zone of the Flower Garden Banks, northwest Gulf of Mexico. M.S. thesis. Texas A&M University, College Station, TX. 205 p.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; reef; benthos;

00002
Abbott, R.E. 1979. Ecological processes affecting the reef coral population at the East Flower Garden Bank, northwest Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 154 p.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; reef; benthos;

00003
Adams, C.E., Jr.; Prior, D.B.; Coleman, J.M. 1983. Bottom furrows and estimated currents in the Mississippi Delta region. Soc. Petrol. Eng. J. 23(1):171-183.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; physical; current;

00004
Adams, C.E., Jr.; Wells, J.T.; Coleman, J.M. 1982. Sediment transport on the central Louisiana Continental Shelf: implications for the developing Atchafalaya River Delta. Contrib. Mar. Sci. 25:133-148.

ABSTRACT: Near-bottom current velocity measurements made at a continental shelf site off the central Louisiana coast over a 4 1/2-month period form the bases for an analysis of sediment transport in the benthic boundary layer. The winter flow field is represented by a tidally dominated regime superimposed on a slow wind-driven westward drift. Mean westerly flow frequently is interrupted by brief periods of intense eastward flow resulting from the passage of continental cyclonic storms. Cross-shelf flow is conspicuous throughout the data record. Bottom shear stress as calculated from the quadratic relationship was high enough on eight separate occasions to resuspend the coarsest material (very fine sand) found at the study site. The presence of quantities of suspended sand in the water column during the periods of high bottom stress was indicated also by an analysis of the logarithmic layer near the bottom. Predominance of eastward displacements during the periods when bottom stress is high enough to cause resuspension of the sand-sized sediments, together with small quantities of silts and clays, suggests that sand-sized material is moved selectively eastward and offshore, while the finer sediments are moved down current with the mean flow. As Atchafalaya Bay continues to fill and Atchafalaya River sediment is carried out onto the continental shelf, much of the coarser material should remain in the immediate vicinity of the delta, front, and perhaps move to the southeast and thus tend to skew the coarser size components of the advancing delta in that direction.
KEYWORDS: Louisiana; continental shelf; geology; physical; sediment transport; current;

00005
Adams, R.; Barrett, B. 1986. Barataria Basin: Geologic processes and framework. Louisiana Sea Grant Pub. No. LSU-T-86-006. 150 p.

ABSTRACT: The geomorphic processes that created Louisiana's wetlands are summarized and natural and man-made processes causing marsh deterioration and land loss are discussed. Coastal resources are inventoried and assessed on environmental, parish, and basin levels.
KEYWORDS: Louisiana; estuary; marsh; Barataria Bay; geology; erosion; sea level; dredging; environmental impact;

00006
Adams, R.; Baumann, R. 1980. Map: Atchafalaya Delta topography and bathymetry. Louisiana Sea Grant Pub. No. LSU-M-80-001.

ABSTRACT: A map of the growing Atchafalaya Delta as it appeared in 1978; illustrates bathymetry from 0 to -5 ft mean sea level and vegetated and unvegetated areas.
KEYWORDS: Louisiana; Atchafalaya River Delta; geology;

00007
Adams, R.D.; et al. 1978. Shoreline erosion in coastal Louisiana: inventory and assessment. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; marsh; geology; erosion;

00008
Adams, R.M.; Sargent, E.F. 1951. Comparison of summer and winter sea temperatures (Gulf of Mexico). Texas A&M Research Foundation, Tech. Rep. 8 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; temperature;

00009
Adelman, H.C. 1967. The taxonomy and summer and fall vertical distribution of chaetognaths off Galveston, Texas. Ph.D. dissertation. Texas A&M University, College Station, TX. 109 p.

ABSTRACT: The chaetognaths off Galveston, Texas were studied from specimens collected during June, July, September, and November 1963. Two genera and six species were identified and are described and illustrated.
KEYWORDS: Texas; coastal waters; continental shelf; biology; taxonomy;

00010
Ahrenholz, D.W. 1980. Recruitment and exploitation of Gulf menhaden, Brevoortia patronis. Fish. Bull. 79(2):325-335.

ABSTRACT: Gulf menhaden, Brevoortia patronus, range along the Gulf of Mexico Coast from Cape Sable, Florida, to Veracruz, Mexico, and are exploited by a purse seine fishery from Alabama to eastern Texas. Rates of exploitation, population movement, and recruitment into the fishery were estimated from returns of tagged juveniles and adults.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; biology; fisheries; fish; fishery statistics; fishing gear; menhaden;

00011
Alaka, M.A. 1968. Climatology of Atlantic tropical storms and hurricanes. ESA Technical Report, WB-6. 18 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; meteorology; hurricane;

00012
Alexander, S.K.; Schwarz, J.R. 1980. Short-term effects of south Louisiana and Kuwait crude oils on glucose utilization by marine bacterial population. Appl. Environ. Microbiol. 40 (2):341-345.

ABSTRACT: Two crude oils, south Louisiana and Kuwait, were examined for their impact on glucose utilization by bacterial populations from the Gulf of Mexico. The uptake and mineralization of [U-14C]glucose was assayed after a 4- to 23-h exposure to various concentrations of added crude oil (0, 0.001, 0.01 and 0.1% [vol/vol]). The effects of oil were determined in a total of 15 sediment and 13 water samples collected from offshore, open-bay and salt marsh environments. The utilization of glucose by bacterial populations usually was not affected by added oil; in 10 sediment and 11 water samples, oil had no significant effect on either glucose uptake or mineralization. Stimulation by oil was recorded in 4 sediment samples. Oil inhibition occurred in 1 sediment and 2 water samples, but only in the presence of the highest concentration of added oil, i.e., 0.1%. Short-term exposure to either south Louisiana or Kuwait crude oil, even at 0.1%, usually has no toxic effect on glucose utilization by marine bacterial populations.
KEYWORDS: Gulf of Mexico; biology; bacteria; oil and gas; environmental impact;

00013
Allen, K.O. 1980. Impacts of navigational dredging on fish and wildlife: a literature review. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/07. 81 p.

ABSTRACT: Literature about the impacts of navigational dredging on fish, other aquatic biota, and wildlife is reviewed. Also included are types of dredging equipment, characteristics of dredged material, evaluation of dredged material pollution potential, and habitat development and enhancement opportunities arising from dredged material disposal. The review contains a brief discussion of the state of knowledge and refers the reader to pertinent literature for additional information. The discussions about impacts and habitat development are divided into "Coastal Waters" (including disposal in estuarine, continental shelf, and deep ocean waters) and "Rivers." A limited discussion of the "Great Lakes" is included as an Appendix.
KEYWORDS: United States; coastal waters; continental shelf; biology; dredging; fish; wildlife; environmental impact;

00014
Allen, R.H.; Spooner, E.L. 1968. Annotated bibliography of BEB and CERC Publications. U.S. Army Corps of Engineers, Coastal Engineering Research Center. Misc. Paper 1-68. 141 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; geology; biology; bibliography;

00015
Alpine Geophysical Associates, Inc. 1971. Oil pollution incident, Platform Charlie, Main Pass Block 41 Field, Louisiana. Report to the U.S. Environmental Protection Agency, Washington, DC. Water Pollut. Cont. Res. Ser. 15080 FTW 05/71. 134 p.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; oil and gas; oil spill; environmental impact;

00016
Amos, A.F. 1980. Longhorn reports: The IXTOC oil spill, Part I-Field observations. Final report to the National Oceanic and Atmospheric Administration. NOAA Contract No. NA79RAC00141.

ABSTRACT: Observations and collections were made specifically to study the distribution and morphology of Ixtoc I oil at and beneath the surface of the western Gulf of Mexico. Four cruises cover the time from when the oil was well south of the Mexican border but spreading north, through the period of maximum activity and publicity when the oil beached on South Texas beaches, to a period when the seasonal current change had apparently reversed the flow of oil back into Mexican waters. Wind and weather, surface temperature and salinity, and surface currents were routinely measured. Presented for each cruise are: maps of the distribution of oil in its various forms, the prevailing winds, currents and water masses, cruise tracks and station locations, a cruise log, cruise narrative and results of field observations.
KEYWORDS: Mexico; Texas; physical; continental shelf; current; oil spill; salinity; temperature; tide; wind; IXTOC;

00017
Amstutz, D.E. 1964. Analysis of the salinity regime of the Mississippi River Gulf outlet channel and major factors which influence it. Master's thesis. Texas A&M University, College Station, TX. 60 p.

ABSTRACT: Twenty-one stations were sampled over a 14 month period beginning in September, 1962 in an attempt to study the relationship between the salinity regime of the Mississippi River gulf outlet channel and major factors which influence it.
KEYWORDS: Louisiana; Mississippi River; chemistry; physical; salinity;

00018

Anderson, C.M.; LaBelle, R.P.; Lucas, A.D. 1985. Oil-spill risk analysis for the central and western Gulf of Mexico (proposed sales 104 and 105) Outer Continental Shelf lease areas. U.S. Department of the Interior, Minerals Management Service. OCS Rep. No. OCS/MMS-85/0103. 94 p.

ABSTRACT: The Federal Government has proposed to offer Outer Continental Shelf (OCS) lands in the Central and Western Gulf of Mexico for oil and gas leasing. The report examines what could happen if oil is found, and attempts to compare relative risks of future leasing with risks of existing leases and transportation of imported oil in the study area. The report summarizes results of an oil spill risk analysis conducted for the proposed OCS lease offerings in the Central Gulf (Sale 104) and Western Gulf (Sale 105) Planning Areas. For the "most likely find" volume scenario, the proposed lease offering will result in an estimated 0.25 billion barrels of oil being found and produced over a period spanning 18 years. There is a 60% chance that no spills of 1,000 barrels or larger will occur and contact land. There is little risk to all targets from the "most likely find" volume scenario. The highest probability (38%) of one or more spills occurring and contacting targets is to the Gulf-wide marshes target. The highest probability (10%) of occurrence and contact to land segments is to land segment number 10, on the Texas coast.
KEYWORDS: Texas; Louisiana; Mississippi; Alabama; continental shelf; continental slope; oil and gas; oil spill;

00019

Anderson, G. 1985. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates, Gulf of Mexico. Grass shrimp. U.S. Fish Wildl. Serv. Biol. Rep. 85(11.35). 19 p.

ABSTRACT: None
KEYWORDS: estuary; coastal waters; marsh; biology; shrimp; ecology; physiology;

00020

Anderson, J.B.; Wheeler, R.B.; Schwarzer, R.R. 1981. Sedimentology and geochemistry of Recent sediments, p. 59-67. In B.S. Middleditch [ed.], Environmental effects of offshore oil production. The Buccaneer Gas and Oil Field Study. Plenum Press, New York.

ABSTRACT: The Buccaneer Gas and Oil Field represents a dynamic sedimentary environment in which relict sediments are being reworked into equilibrium with modern conditions. As a result, sediment-bound trace contaminants are not likely to be deposited in the field. Rather the finer clay mineral and organic material on which trace metals are likely passengers is being swept seaward and dispersed. Thus, there is little that can be concluded about contamination of bottom sediments in the field. For the most part, sediments within the field are not enriched in trace metals relative to control samples (Buccaneer Field control areas, subsurface samples, and BLM-STOCS samples). Those samples that are contaminated were taken within 100 m of structures. A possible source of Ba is drilling muds, though enrichment of Ba in platform samples could also be related to the high $CaCO_3$ (mostly in the form of aragonite) concentration in sediments taken around structures. In any case, Ba in the form of barite ($BaSO_4$) poses little threat to the marine environment. Platform samples are also enriched in Cd relative to control samples. The source of this Cd is undetermined, but corrosion of the structures and metal debris on the seafloor are suspected.
KEYWORDS: Texas; continental shelf; oil and gas; geology; chemistry; sediment; environmental impact; Buccaneer Field;

00021

Anderson, J.W.; Neff, J.M.; Cox, B.A.; Tatem, H.E.; Hightower, G.M. 1974. Characteristics of crude and refined oils and their toxicity to estuarine crustaceans and fish. Mar. Biol. 27:75-88.

ABSTRACT: The purpose of the investigation was to determine the toxicity of two refined oils and two crude oils to several species of fish and crustaceans from the central Texas coast.
KEYWORDS: Texas; estuary; Galveston Bay; chemistry; hydrocarbon; fish;

00022

Anderson, S.H.; Geissler, P.H.; Dawson, D.K. 1980. Coastal and marine bird data base. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/39. 54 p.

ABSTRACT: This report discusses the development of a coastal and marine migratory bird data base at the Migratory Bird and Habitat Research Laboratory. The system is compared with other data bases, and suggestions for development, such as possible adaptations for other taxonomic groups, are included. The data base uses the Statistical Analysis System (SAS), but includes extensions programmed in PL/1. The Appendix shows how the system evolved. Output examples are given for heron data and pelagic bird data to indicate the types of analyses that can be conducted. The Appendix also includes a retrieval language user's guide, a description of the retrieval process, and a listing of the translator program.
KEYWORDS: United States; coastal waters; biology; bird;

00023

Anderson, W.W. 1956. Observations upon the biology, ecology and life history of the common shrimp, Penaeus setiferus (Linnaeus) along the South Atlantic and Gulf Coasts of the United States. Proc. Indo-Pacific Fisheries Council 6:399-403

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Atlantic Ocean; biology; ecology; shrimp;

00024

Angelovic, J.W. [ed.]. 1975. Environmental studies of the south Texas outer continental shelf. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. 08550-IA5-19. 3 vol. NTIS order Nos. PB283-870/AS, PB283-871/AS, and PB283-872/AS.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; physical; fisheries; plankton; current; STOCS;

00025

Angelovic, J.W.; Finucane, J.H.; Collins, L.A.; McEachran, J.D. 1977. Environmental studies of the south Texas outer continental shelf, 1976. Ichthyoplankton/mackerel eggs and larvae. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. AA550-IA7-03. 484 p. NTIS order No. PB283-873/AS.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; fish; plankton; ecology; STOCS;

00026

Anon. 1985. Seismic and drilling pin down deep trend structure off Texas. Oil Gas J. 83 (13):57.

ABSTRACT: Seismic surveys and drilling have helped Shell Offshore Inc. unravel complex geology in a deep geopressured gas trend in the Gulf of Mexico. Seismic surveys helped set up Shell's Picaroon prospect in an area it calls the Corsair trend off Texas. The company drilled a gas discovery on the prospect in 1977. And it ran a 3D seismic survey after drilling seven wells - six gas wells and one dry hole - on the prospect in Brazos Blocks A-19 and A-20. The 3D survey helped pin down geology of the Middle Miocene structure at a cost of $1.5 million - much cheaper than another dry hole, says Billy S. Flowers, president of Shell Offshore.
KEYWORDS: Texas; continental shelf; oil and gas; geology;

00027

Antoine, J.W. 1971. Structure of the Gulf of Mexico, p. 1-34 In R. Rezak and V. L. Henry [ed.], Contributions on the geographical and geophysical oceanography of the Gulf of Mexico. Texas A&M University, Oceanographic Studies, Vol. 3.

ABSTRACT: Shallow seismic reflection profiles demonstrate the unique geologic characteristics of the seven provinces of the Gulf of Mexico. These reflection data, when considered along with other information that has been collected from coring, dredging, magnetic and gravity investigations, make it possible to theorize on the origin of these provinces and their relationship to the total Gulf of Mexico evolution. A short summary of the nature of the individual provinces follows: 1) The Gulf Basin contains a thick sedimentary sequence and is underlain by oceanic crust. 2) The shelf and slope area of the northeastern Gulf is a carbonate bank which has been subsiding at least since Cretaceous time. The Mesozoic salt deposits of the northern Gulf thin toward the east in this province. 3) The South Florida Platform is also a carbonate bank which represents an earlier basin centered on the Florida continental shelf. An extensive reef represents the western barrier of the basin during the Lower Cretaceous. 4) The Yucatan Platform and Campeche Bank may be an extension of the carbonate platform of south Florida. Seismic velocities and age correlations are almost identical. 5) The Isthmian Embayment, which is related to Late Paleozoic orogenies, is similar to the northern Gulf shelf and slope of Texas and Louisiana in terms of the great Tertiary sedimentary thicknesses and the dominance of vertical salt movement in the tectonics of the area. 6) The eastern Mexican shelf and slope is characterized by folds parallel to the present shoreline. These probably represent salt features. 7) The major feature of the northwestern Gulf is the Gulf Coast Geosyncline where salt diapirism has modified the sedimentary pattern throughout. It is felt that the salt originally was in the form of anticlines which may have been genetically related the folds of the western Gulf.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; deep sea; geology; geologic history; diapir; sediment;

00028
Antoine, J.W.; Bryant, W.R. 1968. The major transition zones of the Gulf of Mexico: DeSoto and Campeche canyons. Trans. Gulf Coast Assoc. Geol. Soc. 18:55.

ABSTRACT: Deep well information throughout the Gulf of Mexico coastal plain has indicated that the Gulf margins can be divided into two distinct provinces, the subsided southeast section which is carbonate and the northwest section that is predominately clastic, with complicated surface and subsurface structure controlled mainly by the influence of upward salt migration. Recent geophysical studies in the offshore areas indicate that DeSoto Canyon represents the transition zone between these clastic and carbonate provinces in the northern Gulf and that the Campeche Canyon plays a similar role in the southwestern section of the basin. In addition to representing clastic-carbonate margins, both these canyons mark the terminus of salt diapirs prevalent toward the west. The geophysical data from the DeSoto Canyon indicate that erosion has played an important part in its development. Two mechanisms for the formation of the canyon are suggested: 1) the Loop Current of the eastern Gulf of Mexico and associated circulation in the northeastern Gulf have sufficient velocity along the bottom during specific periods of time to effect a scouring action and/or keep sediments in suspension, and 2) erosion by turbidity flows during periods of low sea level strands associated with glacial stages. The fact that the DeSoto Canyon extends over parts of two distinct geologic provinces, the northeast Florida platform and the Mississippi cone, adds credence to an hypothesis involving erosional rather than tectonic processes. Although there are insufficient data available to determine the origin of the Campeche Canyon, it is suggested that, unlike the DeSoto Canyon, its topographic expression probably is more the result of adjacent salt tectonics than of erosion. Some workers suggested that an alignment from the DeSoto Canyon to Campeche Canyon may represent a fracture zone across the Gulf basin. The hypothesis that this alignments forms the southeastern boundary of the Gulf of Mexico salt province is contradicted by the presence of diapirs in northwestern Matanzas Province, Cuba, and by the discovery of some possible diapiric structures in the Florida Straits and Yucatan Channel.
KEYWORDS: Gulf of Mexico; continental slope; deep sea; geology; geologic history; diapir; erosion;

00029
Antoine, J.W.; Bryant, W.R.; Jones, B. 1967. Structural features of continental shelf, slope, and scarp, northeastern Gulf of Mexico. Am. Assoc. Petrol. Bull. 51:257-262.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology;

00030
Antoine, J.W.; Martin, R.G.; Pyle, T.E.; Bryant, W.R. 1974. Continental margins of the Gulf of Mexico, p. 683-693. In C.A. Burke and C.L. Drake [ed.], The geology of continental margins. Springer-Verlag, New York.

ABSTRACT: The Gulf of Mexico is a small ocean basin whose continental margins are structurally complex and in some cases rather unique. The origin of the Gulf Basin and the subsequent construction of the continental margins are somewhat in contention. The prominent theories contain one of four basic ideas that the Gulf represents: (1) a foundered and oceanized continental mass; (2) a downwarp related to a thermally controlled phase change in the crust and mantle; (3) a gigantic tensioned rift formed in relation to Mesozoic opening of the Atlantic Ocean; and (4) a paleozoic or older ocean basin. The structure of the continental margins of the Gulf of Mexico are the results of tectonic activity related to salt movement, reef growth, current activity, and the massive uppouring of sediments along its northern boundaries. The continental margins of the Gulf are divided into two distinct physiographic and sedimentological provinces, separated physically by two submarine canyons. The DeSoto Canyon in the northeast and the Campeche Canyon in the southwest. These two canyons dividing line between the limestone platforms of the West Florida and Yucatan platforms and the clastic embayments of the northern and western Gulf of Mexico.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; geologic history; sedimentation;

00031
Arcement, G.A. 1984. Discharge and sediment data for Barataria Pass, Louisiana, 1983. U.S. Geological Survey, Open-File Rep. 84-701.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; geology; physical; current; sediment;

00032
Armstrong, D.W. 1974. Some dynamics of carbon, nitrogen and phosphorus in the marine shelf environment of the Mississippi Fan. Master's thesis. Texas A&M University, College Station, TX. 79 p.

ABSTRACT: Twenty-five gravity cores were collected from the Mississippi Fan and Mississippi River between July, 1973 and June, 1974 during cruises 73-1-2 of the R/V Longhorn and 74-G-9 of the R/V gyre. Samples were analyzed for organic carbon, total nitrogen and organic and inorganic phosphorus. Interstitial water was analyzed for chloride, ammonia, phosphate, sulfate and alkalinity.
KEYWORDS: Louisiana; Mississippi Fan; Mississippi River; continental shelf; continental slope; chemistry; organic carbon; nitrogen; nutrient;

00033
Armstrong, H.W.; Fucik, K.W.; Anderson, J.W.; Neff, J.M. 1979. Effects of oilfield brine effluent on sediments and benthic organisms in Trinity Bay, Texas. Mar. Environ. Res. 2:55-69.

ABSTRACT: Field studies have established the concentrations of naphthalenes in bay sediments and water in the vicinity of an oil separator platform and their effects on the benthic fauna. Fifteen stations were occupied monthly, from July 1974 to December 1975, along three transects extending from the separator platform outfall outwards for a distance of 4.0 to 5.6 km. A lesser number of stations were occupied from April 1974 to June 1974. Bottom sediments at each station were analyzed for total naphthalenes content and for number of species and individuals. All stations were located in 2 to 3 m of water. The outfall was located 1 m off the bay bottom. There was a correlation between sediment naphthalenes concentration and number of species and individuals. There were approximately four order of magnitude more hydrocarbons in the sediment than in the overlying water. The bay bottom was almost completely devoid of organisms within 15 m of the effluent outfall. Station located 150 m from the outfall had severely depressed benthic faunas but not to the extent of stations nearer the outfall. Stations located 455 m from the platform were unaffected. The temporary use of a second outfall located 275 m from the main platform outfall resulted in a rapid build up of naphthalenes in surrounding sediments which persisted for at least six months following the termination of use of the second outfall. The benthic fauna was also severely depressed in the vicinity of the second outfall. The use of multiple outfalls, located some distance apart, appears to be more harmful than the use of a single outfall. Trinity Bay, Texas, the site of this investigation, has a mean depth of 2.5 m. The bay water is highly turbid due to the presence of a high concentration of clay-sized particulate material. The brine outfall was located approximately 1 m above the bay bottom. These special conditions undoubtedly contributed significantly to the observed impact of the brine. Therefore, extrapolations from the results of this study to offshore oil production and brine disposal should be made with extreme caution.
KEYWORDS: Texas; estuary; Trinity Bay; oil and gas; chemistry; biology; environmental impact; hydrocarbon;

00034
Armstrong, N.E. 1987. Ecology of open-bay bottoms of Texas: a community profile. U.S. Fish Wildl. Serv. Biol. Rep. 85(7.12). 119 p.

ABSTRACT: Open-bay bottoms represent one of the most extensive habitats in any estuarine system, especially in the northwestern Gulf of Mexico estuaries of Texas. Seven major estuarine systems are found here (Sabine Lake, Galveston Bay, Matagorda Bay, San Antonio Bay, Copano-Aransas Bays, Corpus Christi Bay, and the Laguna Madre), along with three minor riverine estuaries (Brazos, San Bernard and Rio Grande) which long ago filled. These bays are typically broad and shallow with average depths of 1.2 to 2.4 meters and a total surface area of 624,000 ha. Salt marshes and seagrass beds are small. The key functions of the benthic system are production of biomass as food resources for higher trophic levels; bioturbation, which enhances nutrient regeneration; and nutrient regeneration itself. Managers of these estuaries must consider the open-bay bottom systems as a critical part of the overall function of these estuaries.
KEYWORDS: Texas; estuary; Galveston Bay; Matagorda Bay; Corpus Christi Bay; Laguna Madre; biology; ecology;

00035
Armstrong, R.S. 1980. Environmental assessment of Buccaneer Gas and Oil Field in the northwestern Gulf of Mexico, 1975-1980. Volume IV. Current patterns and hydrography. NOAA Tech. Mem. NMFS-SEFC-50. 41 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; physical; current; Buccaneer Field;

00036
Armstrong, R.S. 1981. Transport and dispersion of potential contaminants, p. 403-420. In B.S. Middleditch [ed.], Environmental effects of offshore oil production. The Buccaneer Gas and Oil Field Study. Marine Science Series, vol. 14. Plenum Press, New York.

ABSTRACT: During the first three years of the Buccaneer Gas and Oil Field Study (1976-1979) dye studies, moored and profiling current meters, anemometers, wave measurements, and drifting buoys were employed to determine the dynamic characteristics and energetics of the waters in and around this region of the continental shelf off Galveston, Texas. This variety of observations has afforded an opportunity to define the transport mechanics and to develop models for describing the spread and movement of potential contaminants that may have entered the water from petroleum operations in the Field. The focus of the work presented here is toward describing dilution and distribution patterns that could be expected to occur after periods of continuous discharge or from frequent, sporadic releases.
KEYWORDS: Texas; continental shelf; oil and gas; physical; model; Buccaneer Field;

00037
Arnold, E.L. 1958. Gulf of Mexico plankton investigations, 1951-53. U.S. Fish and Wildlife Service, Spec. Sci. Rep. Fish. No. 269.

ABSTRACT: This report presents the results of a group of cruises into the Gulf of Mexico during 1951-53. The cruises were taken to characterize the plankton of the Gulf with special emphasis on fish larvae and eggs. A number of transects were taken in various areas of the Gulf along the Continental Shelf and offshore. Two types of sampling gear were used and the efficiencies of each are discussed.
KEYWORDS: Gulf of Mexico; continental shelf; biology; fish; plankton; taxonomy;

00038
Arnold, E.L., Jr. 1955. Notes on the capture of young sailfish and swordfish in the Gulf of Mexico. Copeia 1955(2):150-151

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fish;

00039
Arnold, E.L., Jr.; Thompson, J.R. 1958. Offshore spawning of the striped mullet, Mugil cephalus, in the Gulf of Mexico. Copeia 1958(2):130-132

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fish; mullet;

00040
Arnold, E.L., Jr.; Wheeler, R.S.; Baxter, K.N. 1960. Observations of fishes and other biota of East Lagoon, Galveston Island. U.S. Fish and Wildlife Service, Spec. Sci. Rep. Fish. No. 344. 30 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; fish; benthos;

00041
Arthur D. Little, Inc. 1973. Gulf Coast deep water port facilities study, environmental assessment. U.S. Army Corps of Engineers, Vicksburg District, Vicksburg, MS. 87 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; socioeconomics; environmental impact; shipping;

00042
Atlas, E.; Brooks, J.M.; Trefry, J.H.; Sauer, T.C., Jr.; Schwab, C.R.; Bernard, B.B.; Schofield, J.; Giam, C.S.; Meyer, E.R. 1980. Environmental aspects of ocean dumping in the western Gulf of Mexico. J. Water Poll. Control Fed. 1980:329-350.

ABSTRACT: In July 1977, the authors monitored an actual deep-ocean dump to study the chemical behavior and dispersal of the waste. The material was a biological sludge, a waste product from Shell Chemical Company's biotreatment facility in Deer Park, Tex. This paper first presents a chemical and physical characterization of the waste. Next, the oceanographic properties of the Western Gulf Dumpsite are described and the results of a waste-tracking study at the dumpsite are discussed. Finally, the effects of the waste on a culture of marine phytoplankton are described.
KEYWORDS: Texas; continental shelf; chemistry; physical; ocean dumping; environmental impact;

00043

Atwood, D.K. 1981. Proceedings of a Symposium on Environmental Research Needs in the Gulf of Mexico (GOMEX), September 30 - October 5, 1979, Key Biscayne, FL. National Oceanic and Atmospheric Administration (NOAA/ERL), Atlantic Oceanographic and Meteorological Laboratories, Miami, FL. 4 vol.

ABSTRACT: Proceedings include results and discussions recorded at a meeting of a group of U.S. and Mexican economists, marine scientists, and environmental managers regarding needs for marine-related environmental research in the Gulf of Mexico during the next decade. The workshop was divided into three panel groups entitled: natural setting, anthropogenic input and impacts, and environmental management and public concern. Reports from each of these panels are included in these proceedings as are the panel participants.
KEYWORDS: Gulf of Mexico; biology; chemistry; geology; physical; fisheries; ecology; environmental impact;

00044

Auble, G.T.; Andrews, A.K.; Hamilton, D.B.; Roelle, J.E.; Shoemaker, T.G. 1984. A workshop model simulating fate and effect of drilling muds and cuttings on benthic communities. U.S. Fish. Wildl. Serv., Western Energy and Land Use Team, Ft. Collins, CO. WELUT-85/W02. 189 p.

ABSTRACT: Oil and gas exploration and production at marine sites has generated concern over potential environmental impacts resulting from the discharge of spent drilling muds and cuttings. This concern has led to a broad array of publicly and privately sponsored research. This report describes a cooperative modeling effort designed to focus information resulting from this research through construction of explicit equations that simulate the potential impacts of discharged drilling fluids (muds) and cuttings on marine communities. The model is the result of collaboration among more than 30 scientists. The principal cooperating organizations were the U.S. Environmental Protection Agency, the U.S. Minerals Management Service, the Offshore Operators Committee, and the Alaska Oil and Gas Association. The simulation model consists of three connected submodels: Discharge and Plume Fate, Sediment Redistribution, and Benthic Community Effects. The focus of the modeling effort was on the connection of a reasonable representation of physical fate to the biological responses of populations, rather than on highly detailed representations of individual processes.
KEYWORDS: United States; coastal waters; continental shelf; continental slope; oil and gas; biology; physical; environmental impact; model; sediment; benthos; drilling fluid; cuttings;

00045

Aumann, G.D. 1981. The effect of structures on migratory and local marine birds, p. 209-221. In B.S. Middleditch [ed.], Environmental effects of offshore oil production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; biology; bird; environmental impact; Buccaneer Field;

00046

Austin, G.B., Jr. 1965. Some recent oceanographic surveys of the Gulf of Mexico. Trans. Am. Geophys. Un. 36(5):885-892.

ABSTRACT: None
KEYWORDS: physical; Gulf of Mexico; salinity; temperature;

00047

Ayers, R.C.; Richards, N.L.; Gould, J.R.; et al. [ed.]. 1980. Proceedings. Symposium, Research on environmental fate and effects of drilling fluids and cuttings. 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; Pacific Ocean; oil and gas; biology; chemistry; physical; environmental impact; drilling fluid; cuttings;

00048

Ayers, R.C., Jr.; Sauer, T.C., Jr.; Stuebner, D.O.; Meek, R.P. 1980. An environmental study to assess the effect of drilling fluids on water quality parameters during high rate, high volume discharges to the ocean, p. 351-381. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; oil and gas; chemistry; physical; drilling fluid; trace metal; turbidity; environmental impact;

00049

Bagur, J.D. 1978. Barrier islands of the Atlantic and Gulf coasts of the United States: An annotated bibliography. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-77/56. 215 p.

ABSTRACT: None
KEYWORDS: Alabama; Louisiana; Mississippi; barrier island; biology; geology; chemistry; physical; ecology; fisheries; wildlife; bibliography;

00050

Bahr, L.M.; Costanza, R.; Day, J.W., Jr.; Bayler, S.; Leibowitz, S.G.; Fruci, J.R. 1983. Ecological characterization of the Mississippi Deltaic Plain region. A narrative with management recommendations. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/69. 189 p.

ABSTRACT: This report is a descriptive narrative aimed at characterizing the region's ecology and its environmental problems. A companion technical report (Costanza et al. 1983) was also prepared that includes more detailed quantitative descriptions of the major ecological habitats of the region. The data collected in the technical report are intended to serve as a data base for addressing specific environmental management questions. This narrative report summarizes: (1) the major classes of environmental problems, their complex origins and interdependencies, (2) the natural systems of the region, their histories, structure, and function, (3) the recommendations that have been proposed to deal with the environmental problems of the region, and (4) how the data base assembled in the technical report might help in dealing with these problems more rationally.
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; estuary; marsh; barrier island; coastal waters; biology; ecology; environmental impact;

00051

Bahr, L.M.; Hebrard, J.J. 1976. Barataria Basin: biological characterization. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-T-76-005.

ABSTRACT: The biological characterization of the Barataria Basin includes a functional description of biological processes at both the ecosystem (basin) level and the habitat level, as well as summaries of research on distribution and abundance of animal groups. Water represents the prime integrating feature of the total ecosystem. The importance of rainfall, tidal flow, wind, temperature, storms, meandering of streams, and discharge from the Mississippi River is emphasized in relation to distributions of organisms and nutrients and also as a vehicle for pollutants. On the habitat level, swamp forests, fresh marshes, brackish marshes (including the intermediate marsh), saline marshes, beaches, and other elevated areas (i.e., chenieres, natural levees, and spoil banks) are discussed in terms of probable energy pathways by classification of organisms as producers, primary consumers (herbivores and detritivores), or secondary consumers (carnivores), with emphasis on water and its relationship to nutrient transport.
KEYWORDS: Louisiana; Barataria Bay; estuary; marsh; biology; ecology;

00052

Bain, M.B.; Bain, J.L. 1982. Habitat suitability index models, coastal stocks of striped bass. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-10.1. 29 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; biology; ecology; fish; fisheries; model;

00053

Balech, E. 1967. Dinoflagellates and tintinnids in the northeastern Gulf of Mexico. Bull. Mar. Sci. 17:280-298.

ABSTRACT: The dinoflagellates and tintinnids collected with a 35-um mesh plankton net between May and September 1964 are discussed in this paper. Most of the plankton samples were collected off Panama City, Florida; in one cruise, samples were taken between west Florida and Galveston, Texas. About 115 species of dinoflagellates and 55 species of tintinnids, recorded for the first time from the Gulf of Mexico, were identified in this study.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; biology; plankton; taxonomy;

00054
Ballard, R.D.; Uchupi, E. 1970. Morphology and Quaternary history of the continental shelf of the Gulf Coast of the United States. Bull. Mar. Sci. 20(3):547-559.

ABSTRACT: Sea-level fluctuations of the Quaternary have greatly influenced the surface morphology of the continental shelf off the gulf coast of the United States. Two prominent shorelines, at 60 and 160 meter depths, and other features found on the gulf shelf can be related to the relatively recent events of the Quaternary, particularly those of the Holocene transgression. Landward of the 40 meter contour, the slow rise of the sea surface and modern sedimentation have produced a complex mixture of topographic expressions. Diapiric structures, which are abundant from De Soto Canyon westward, appear to be of secondary importance in contributing to the shelf's surface relief.
KEYWORDS: Gulf of Mexico; continental shelf; geology; geologic history;

00055
Barger, L.E.; Johnson, A.G. 1980. An evaluation of marks on hardparts for age determination of Atlantic croaker, spot, sand seatrout, and silver seatrout. NOAA Tech. Mem. NMFS-SEFC-22. 5 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fish; croaker; spot; seatrout;

00056
Barger, L.E.; Williams, M.L. 1980. A summarization of age and growth of spot, Leiostomus xanthurus Lacepede, sand seatrout, Cynoscion arenarius Ginsburg, and silver seatrout, Cynoscion nothus (Holbrook), based on a literature review. NOAA Tech. Mem. NMFS-SEFC-14. 15 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fish; spot; seatrout;

00057
Barham, E.G.; Sweeney, J.C.; Leatherwood, S.; Beggs, R.K.; Barham, C.L. 1979. Aerial census of the bottlenose dolphin, Tursiops truncatus in a region of the Texas coast. Fish. Bull. 77(3):585-595.

ABSTRACT: On five replicate aerial surveys in late March 1978, the bottlenose dolphin, Tursiops truncatus, herds were sighted and their numbers estimated in 21 strip transects flown across bays and channels between barrier islands and the coast from Port Aransas northeast to Matagorda, Texas.
KEYWORDS: Texas; estuary; coastal waters; biology; marine mammal;

00058
Barrett, B.B.; Merrell, J.L.; Morrison, T.P.; Gillespie, M.C.; Ralph, E.J.; Burdon, J.F. 1978. A study of Louisiana's major estuaries and adjacent offshore waters. Louisiana Wildlife and Fisheries Commission, Tech. Bull. 27. 197 p.

ABSTRACT: Seven of Louisiana's major estuaries and adjacent offshore waters were sampled monthly from October, 1974 through September, 1976. In each of these seven areas, 4 stations yield samples that were analyzed for water chemistry, physical parameters, nekton, zooplankton, and chlorophyll A.
KEYWORDS: Louisiana; estuary; coastal waters; physical; chemistry; biology; plankton; chlorophyll; water quality;

00059
Barrett, B.B.; Ralph, E.J. 1977. Environmental conditions relative to shrimp production in coastal Louisiana along with shrimp catch data for the Gulf of Mexico. Louisiana Department of Wildlife and Fisheries, Seafood Division, New Orleans, LA. Tech. Bull. 26. 22 p.

ABSTRACT: White and brown shrimp catch data for the Gulf of Mexico are presented for the 1965 through 1975 time period. Louisiana's position relative to the other Gulf coastal states in terms of productivity is discussed, as well as the trend of increased brown shrimp catches in Louisiana in the past decade over the previous decade. Environmental factors which influence Louisiana's shrimp harvest are presented for previous years and for the first few months of 1977. Relationships between shrimp catch and salinity, water temperature, river discharge, rainfall, and estuarine acreages are reviewed.
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; biology; fisheries; fishery statistics; shrimp; ecology;

00060

Barrett, B.B.; Tarver, J.W.; Latapie, W.R.; Pollard, J.F.; Mock, W.B.; Adkins, G.B.; Gaidey, W.J.; White, C.J. 1971. Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase III, sedimentology, p. 133-191. In Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase II, hydrology and phase III, sedimentology. Louisiana Wildlife and Fisheries Commission, New Orleans, LA.

ABSTRACT: There were 1,536 sediment samples taken from the water bottoms of coastal Louisiana between March 1968 and June 1970. The upper three inches of the sample was used to determine grain size distribution. The kurtosis, skewness, standard deviation, median, and mean were calculated for all samples. Sediments across coastal Louisiana proved to be very similar. Major differences occurred at the interface of the Gulf of Mexico and the estuaries where energy levels were high, as well as near the mouths of major streams. Generally, the sediment particles graded from coarse near the Gulf of Mexico and the barrier islands to fine in the upper estuaries. Size fractions in order of decreasing abundance were silt, clay, sand and granules. Of the silt fraction, coarse silt, 4 to 5 phi, was the most abundant. The percentage of clays smaller in size than 10 phi were much higher than clay percentages larger than 10 phi. The most abundant sand fraction was 3 to 4 phi, which is very fine sand. This sand size was predominantly quartz. Granules were predominantly shell fragments. Sediments in the large water areas with wide openings to the Gulf of Mexico were generally coarse-grained and relatively well sorted, had positive skewness values, and were leptokurtic. Sediments in the small, semi-enclosed water areas surrounded by marsh were usually fine-grained and poorly sorted, had negative skewness values, and were platykurtic.
KEYWORDS: Louisiana; estuary; marsh; coastal waters; geology; sediment texture; sediment;

00061

Barrett, B.B.; Tarver, J.W.; Latapie, W.R.; Pollard, J.F.; Mock, W.B.; Adkins, G.B.; Gaidey, W.J.; White, C.J.; Mathis, J.S. 1971. Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase II, hydrology, p. 9-130. In Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase II, hydrology and phase III, sedimentology. Louisiana Wildlife and Fisheries Commission, New Orleans, LA.

ABSTRACT: Louisiana's estuaries from Sabine Lake to the Pearl River were sampled at 109 stations during 1968 and 1969. Salinity and water temperature were measured at all stations; dissolved oxygen, turbidity, and the nutrients nitrate, nitrite, inorganic phosphate, and total phosphorus were sampled at 82 stations. Tide, barometric pressure, rainfall and wind speed and direction were measured at one station. Coast wind data on air temperature, precipitation, and stages and discharges of the principal rivers were also collected. Salinities were highest during the fall and lowest during the peak river discharge while water temperatures were seasonal, closely following air temperatures. Dissolved oxygen concentrations were highest during periods of low water temperature and salinity. Turbidities generally fluctuated directly with river discharge and wind speed. The seasonal distributions of nutrients were generally irregular; however, nitrate values were highest at stations near the mouths of the Atchafalaya and Mississippi rivers during periods of peak discharge. In general, Louisiana's estuaries and near offshore waters are low in salinity and high in nutrient concentrations as compared with other states bordering the northern Gulf of Mexico. These characteristics are due primarily to Louisiana's high rainfall and the large volume of river water which makes its way through rich alluvial soils to the Gulf of Mexico. The major contributors of nutrients to the estuaries are the Mississippi and Atchafalaya rivers. These rivers are also responsible for major salt water dilutions within the coastal area and in the near offshore waters.
KEYWORDS: Louisiana; estuary; coastal waters; Atchafalaya Bay; Barataria Bay; chemistry; physical; nutrient; salinity; temperature;

00062

Basile, B. 1978. Environmental effects of offshore oil production. Ph.D. dissertation. University of Houston, TX.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; environmental impact; Buccaneer Field;

00063

Bass, R.J.; Avault, A.W. 1975. Food habits, length-weight relationship, condition factor, and growth of juvenile red drum, Sciaenops ocellata, in Louisiana. Trans. Am. Fish. Soc. 104(1):35-45.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; ecology; fish; drum;

00064
Bates, C.C. 1953. Physical and geological processes of delta formation. Ph.D. Dissertation. Texas A&M University, College Station, TX.

ABSTRACT: This dissertation presents a comprehensive and objective investigation of the geological and physical processes involved when a sediment-laden stream enters a saline body of water. The basic method of investigation is the application of jet theory, as developed by Tollmien and subsequent workers, in explaining interrelations of various oceanographic phenomena observed off the mouth of a sediment-laden river. The water at the rivers mouth is first treated as a tideless, wave-free body devoid of currents other then those brought about by the inertia of the flowing river water. The basic theory of free jets is modified tentatively to take into account a hydraulic head at the orifice, turbidity contrasts between entrained and entraining fluids and the current deflective force created by the earth's rotation.
KEYWORDS: Louisiana; Mississippi River Delta; geology; physical; sediment transport; sedimentation;

00065
Baumann, R.H.; DeLaune, R.D. 1982. Sedimentation and apparent sea-level rise as factors affecting land loss in coastal Louisiana, p. 2-13. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modifications in Louisiana: Causes, Consequences, and Options. October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: Rates of apparent sea-level rise and marsh aggradation were determined with the aid of 137-Cs dating, artificial marker horizons, and water level data for the lower Barataria and Calcasieu estuaries. These marshes are not vertically accreting at a rapid enough rate to maintain their intertidal elevation and have been subjected to net submergence since at least the mid-1950s. This has resulted in a conversion of marsh to open water habitats. Rates of apparent sea-level rise at the two study areas were 1.2 and 1.3 cm/yr from 1954 to present. Sedimentation rates through the same period were approximately 0.7 cm/yr over most of the area of investigation, through streamside marshes aggraded at a rate of 1.35 cm/yr. The transformation of marsh to open water will be complete in a few decades if present trends continue. A research strategy that will narrow management alternatives is briefly outlined.
KEYWORDS: Louisiana; Barataria Bay; estuary; marsh; geology; sedimentation; sea level; erosion;

00066
Baxter, K.N. 1973. Shrimp discarding by the commercial fishery in the western Gulf of Mexico. Mar. Fish. Rev. 35:26

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp;

00067
Baxter, K.N.; Hollaway, S.L. 1981. Summary of results of Louisiana white shrimp tagging experiments, 1977. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-72. 116 p. NTIS order No. PB84-124346.

ABSTRACT: The Gulf of Mexico has been the major production area for shrimp in the United States, accounting for approximately 80% of the total value of shrimp landed in this country. In 1977, National Marine Fisheries Service contracted with the Louisiana Department of Wildlife and Fisheries to tag and release white shrimp in the Caillou Lake estuary system, in response to management priorities identified in the regional shrimp fishery management plan for the Gulf of Mexico. These priorities included the determination of estimates regarding growth rates, mortality rates, and migration patterns characterizing major penaeid stocks in the Gulf of Mexico. This report presents a summary of these mark-recapture experiments.
KEYWORDS: Louisiana; estuary; coastal waters; fisheries; biology; shrimp;

00068
Baxter, K.N.; Sullivan, L.F. 1986. Forecasting offshore brown shrimp catch from early life history stages, p. 22-36. In A.M. Landry, Jr. and E.F. Klima. Proceedings of the shrimp yield prediction workshop. Texas A&M Sea Grant Pub. No. TAMU-SG-86-110.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; biology; fisheries; shrimp;

00069
Bea, R.G.; Audibert, J.M.E. 1980. Offshore platforms and pipelines in Mississippi River Delta. J. Geotech. Eng. Div. Am. Soc. Civ. Eng. 106:853-869 (paper 15645).

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; geology; oil and gas; physical; pipeline; petroleum platform;

00070
Bea, R.G.; Bernard, H.A.; Arnold, P.; Doyle, E.H. 1975. Soil movements and forces developed by wave-induced slides in the Mississippi Delta. J. Petrol. Technol. 27:500-514.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; geology; physical; sediment transport; hazard;

00071
Beard, J.H.; Sangree, J.B.; Smith, L.A. 1982. Quaternary chronology, paleoclimate, depositional sequences, and eustatic cycles. Am. Assoc. Pet. Geol. Bull. 66(2):158-169.

ABSTRACT: Pleistocene alternations of ocean volumes, expressed as relative changes in sea level, are symptomatic of the accumulation and melting of continental ice sheets and resulted in low stands of sea level during glacial periods and high stands during interglacial periods. A low stand-high stand couplet constitutes a eustatic cycle. Eight cycles that occurred during the last 2.5 to 3.0 m.y. are recognized in the Gulf Coast region. These cycles are identified by multiple criteria, including paleontologic, sedimentologic, and seismic evidence. Eustatic cycle concepts can be used in seismic stratigraphy to identify seismic (depositional) sequences. Such seismic-sequence analyses are based on identification of discrete stratigraphic units within relatively conformable intervals of strata by using reflection patterns on the seismogram. For example, glacial periods may exhibit chaotic bedding surfaces on the seismogram, whereas interglacial periods may display parallel bedding surfaces. Seismic sequence analyses provide a sound basis for applying the global system of geochronology to seismic data for the improvement of stratigraphic and structural interpretations. Moreover, seismic sequence analyses in new exploration areas allow for reliable predictions of geologic age ahead of drilling and facilitate preliminary tectonostratigraphic reconstructions.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; geologic history; glaciation; sea level;

00072
Beccasio, A.D.; Fotheringham, N.; Redfield, A.E.; Frew, R.L.; Leviton, W.M.; Smith, J.E.; Woodrow, J.O. 1982. Gulf coast ecological inventory. User's guide and information base. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/55. 191 p.

ABSTRACT: This study provides an inventory of important ecological resources along the Gulf Coast, an area of some 475,000 square kilometers (183,400 square miles). This inventory is intended to provide government and industry decision makers with valuable ecological information which will assist in the regional siting of oil and gas processing and manufacturing facilities and the irrespective transportation systems. The preparation of this ecological inventory involved four major tasks: the collection, review, and analysis of available data on coastal fish and wildlife species and their habitats and special land use areas; the synthesis and compilation of these data into a format which is compatible with the requirements of 1:250,000-scale mapping; the preparation of a series of 22 resource inventory graphics for the Gulf Coast; and the preparation of a report narrative keyed to the inventory graphics. The report is organized in accordance with the hierarchical classification scheme for coastal ecosystems devised by Terrell (1979). Ecological resources are summarized by their appropriate geographic zone, and descriptions and locations of species with special status and aquatic and terrestrial species of high commercial, recreational, and aesthetic value are included. The designation of more than 270 special land use areas along the Gulf Coast is also provided.
KEYWORDS: Gulf of Mexico; barrier island; estuary; marsh; coastal waters; biology; ecology; oil and gas; fish; wildlife; fisheries;

00073
Becker, R.E. 1972. Measurement of coastal Louisiana's shoreline. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Rep. No. 15. 16 p.

ABSTRACT: Measurement of Coastal Louisiana's shoreline constituted one of several tasks specified by Contract No. DACW 29-70-C-0272, Department of the Army, New Orleans District, Corps of Engineers. Purpose of this work was to categorize the various types of shoreline that occur in that portion of the state termed "coastal Louisiana", generally corresponding to the area south of the Intracoastal Waterway. The five classes of shoreline inventoried were streams and bayous; bays; lakes and marshes; canals and dredged cuts; major rivers; and Gulf shoreline. Total shoreline mileage in these categories was determined by marking and measurement from 7 1/2- and 15-minute quadrangle sheets, and further classified according to hydrologic unit. Measurement methodology using a) conventional map measuring wheel, and b) weight loss from calibrated ink pens is discussed.
KEYWORDS: Louisiana; estuary; coastal waters; marsh; beach; geology;

00074
Bedient, P.B.; Hall, R.W.; Newell, C.J. 1980. Modeling the environmental effects of a navigation channel in a tidal bay. Water Resour. Bull. 16(5):881-886.

ABSTRACT: A circulation and salinity model was used to predict the effects of wind, fresh water inflow, and the construction of a navigation channel on Vermilion Bay, Louisiana. The model numerically solved continuity and motion equations and provided a time history and spatial distribution of tidal depths, flows, velocities, and salinity in two lateral dimensions. The model predicted that high south winds or high fresh water inflow would reduce average bay salinities, as would the construction of a channel through Vermilion Bay. The results suggested the main reason for this behavior is the presence of two bay outlets to the Gulf of Mexico.
KEYWORDS: Louisiana; estuary; Vermilion Bay; physical; tide; current; salinity; model; environmental impact;

00075
Bedinger, C.A., Jr. 1979. Ecological investigations of petroleum production platforms in the central Gulf of Mexico - preliminary findings, p. 2149. In Proceedings, 11th Annual Offshore Technology Conference. Paper No. OTC-3605.

ABSTRACT: Project objectives are to assess the long term cumulative effects of production platform operation on the outer continental shelf (OCS) environment, and further define their "artificial reef" effect. These results are then to be used in helping (1) formulate future research on the OCS, (2) indicate monitoring techniques, and (3) to review present "benchmark" studies. The study area covers a broad expanse of the Louisiana "oilpatch" from the Mississippi delta, west 200 miles and offshore 100 miles. Twenty-four stations have been visited during late spring and late summer, 1978, and winter, 1979, with four platforms sampled as primary sites during each season, 16 as secondary sites in the late summer, and four controls in each season. Collections and analyses have included basic hydrography; hydrocarbons in water, sediments, and biota; trace metals from similar samples; sediment physical characterization; benthic microbiology; benthic biota; histopathology in fish and invertebrates; and platform associated fouling organisms and fish. This paper presents data from initial sampling and gives observations of trends from a number of Principal Investigators doing the actual work. The major observation realized is that the Mississippi river overshadows man's activities in affecting the environment in that it overrides ocean water over a considerable area in the nearshore during the summer months causing an oxygen decline and subsequent dieoff and emigration of organisms.
KEYWORDS: Louisiana; continental shelf; oil and gas; biology; chemistry; physical; geology; petroleum platform; environmental impact; Central Gulf Platform Study;

00076
Bedinger, C.A., Jr. [ed.]. 1981. Ecological investigations of petroleum production platforms in the central Gulf of Mexico. Volume I - Pollutant fate and effects studies. Volume II - The Artificial Reef Studies. Volume III - Executive Summary. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. AA551-CT8-17. 1782 p. NTIS order No. PB82-167776.

ABSTRACT: Twenty-four sites on the continental shelf of the Louisiana coast have been studied for long-term cumulative effects of petroleum production in the region of offshore platforms. Four primary study platforms and four control sites were visited in May, 1978, August/September, 1978 and January 1979. Sixteen secondary platforms were sampled August/September, 1978. Sampling and analysis included hydrography and hydrocarbons of the water column; sediment physical characterization, hydrocarbons, trace metals, and contamination with depth; and populations of the meiofauna, macroinfauna, macroepifauna, demersal fishes and species associated with the "artificial reef" brought about by the platform. Bottom studies extended from 100 to 2000 m away from platforms and were therefore indicative of regional as opposed to localized contamination. Sites were located from 5 km (3 mi) to 115 km (73 mi) from shore and extended from the west shore of the Mississippi delta (89o32'W) to a line south of Marsh Island (91o44'W). Results confirm widespread, chronic contamination with hydrocarbons and metals with some apparent incorporation of pollutants into biota found at platforms. Over the entire study area absolute amounts of contaminants vary widely showing a general concentration in the nearshore and eastern portions where the Mississippi River apparently contributes more contaminants than petroleum production platforms. Platforms vary widely in the types and amounts of pollutants traced to them. A distinctive pattern of expected contamination with platform operating type is not seen. Benthic populations are indicative of a stressed environment caused from high freshwater and sediment loading from the Mississippi and periodic cyclonic storms. There are also localized platform influences on benthos in isolated cases. A few platforms are conclusively indicated as contributing to pollution in sediments up to a 2000-m distance.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; oil and gas; chemistry; geology; hydrocarbon; trace metal; benthos; environmental impact; Central Gulf Platform Study;

00077
Bedinger, C.A., Jr.; Nulton, C.P. 1982. Analysis of environmental and tar samples from the nearshore South Texas area after oiling from the Ixtoc-1 blowout. Bull. Environ. Contam. Toxicol. 28(2):166-171.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; oil and gas; oil spill; environmental impact; chemistry; hydrocarbon; Ixtoc;

00078
Behrens, E.W. 1981. Total organic carbon and carbon isotopes of sediments, p. 117-131. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; stable isotope; organic carbon; environmental impact; Buccaneer Field;

00079
Behrens, E.W.; Addy, S.K. 1980. Extrapolation of physical properties of sediments from a localized area in the Gulf of Mexico, based on a conceptual geological model. Mar. Geol. 38(1-3):93-102.

ABSTRACT: Conceptual models of depositional systems may permit extensive extrapolation of physical properties for a relatively small amount of detailed correlation among physical, sedimentological and acoustic properties. For example, in a 9-m midslope core (IG 19-39, lat. 28 51.2'N, long.87 14.0'W, depth 1006 m) in the northeastern Gulf of Mexico there are two approx 60-cm zones (at the core top and from 750 to 810 cm) which are distinctly higher foraminiferal content. Several investigators have concluded that the foram-rich zones represent warm, interglacial or interstadial periods dominated by pelagic sedimentation in the deep-sea, whereas the siltier zones represent glacial periods of low sea-level stands during which more terrigenous sediment was delivered by various gravity flow mechanisms. Since the causes of the changes in depositional processes are glacio-eustatic, the change in sediment types should be widespread with good lithostratigrahic correlations. Published data exist for over 100 cores from the deep Gulf of Mexico wherein only one or a few sediment properties are reported. In a large number of these cores the reported property correlates well with the pattern in the cores studies and is explained by the glacio-eustatic model. This suggests that the relationships between physical, chemical, textural, and acoustic properties in core IG 19-39 may be used to predict similar relationships over a widespread area. The model seems to apply to the abyssal plains of the Gulf of Mexico, the margins of the Mississippi Fan, and various parts of the northern continental slope.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; sedimentation; sediment; sediment texture; foraminifera; stratigraphy; model;

00080
Bell, A.; Clark, J. 1985. East Coast ocean features (Oct. 1985). Oceanogr. Mon. Summ. 5 (10):18-19.

ABSTRACT: The end-of-October amplitude of the Loop Current in the Gulf of Mexico shows little change compared to the end-of-September position. Anticyclonic eddy o was suspected by ARGOS data near 25 degree 30N 91 degree W around August 22 according to the Slidell, Louisiana SFSS. Eddy o seemingly traveled 175 km WSW since August 22. Two cyclonic eddies formed, one anticyclonic eddy was absorbed and one dissipated during the month.
KEYWORDS: Gulf of Mexico; physical; current; Loop Current; eddy;

00081
Bellinger, J.W. 1971. Food habits of juvenile pompano, Trachinotus carolinus, in Louisiana. Trans. Am. Fish. Soc. 100(3):486-494.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; ecology; fish; pompano;

00082
Bellinger, J.W.; Avault, J.W. 1970. Seasonal occurrence, growth and length-weight relationship of juvenile pompano, Trachinotus carolinus, in Louisiana. Trans. Am. Fish. Soc. 100(3):486-494.

ABSTRACT: None
KEYWORDS: Louisiana; biology; ecology; fish; pompano;

00083
Benavides, R.A.; Flint, R.W.; Godbout, R. 1980. Environmental studies, South Texas outer continental shelf, 1975-1977. Volume II. Data management. Report to Bureau of Land Management, Washington, DC. 343 p. Contract No. AA551-CT8-51. NTIS order No. PB80-181514.

ABSTRACT: This study of the South Texas Outer Continental Shelf (STOCS) was conducted on behalf of the Bureau of Land Management and with the close cooperation of personnel of that agency. The results reported on herein constituted a synthesis of three years of an environmental studies program of the STOCS. This study was part of an overall program that included the other elements of (1) geology and geophysics by the U.S. Geological Survey, (2) fisheries resources and ichthyoplankton populations by the National Oceanic and Atmospheric Administration/National Marine Fisheries Service, and (3) biological and chemical characteristics of selected topographic features in the northern Gulf of Mexico by Texas A and M University.
KEYWORDS: Texas; continental shelf; biology; chemistry; geology; fisheries; oil and gas; environmental impact; STOCS;

00084
Bender, M.E.; Reish, D.J.; Ward, C.H. 1979. Re-examination of the offshore ecology investigation, p. 35-116. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; chemistry; geology; physical; oil and gas; environmental impact; Offshore Ecology Investigation;

00085
Benson, N.G. 1981. The freshwater-inflow-to-estuaries issue. Fisheries 6(5):8-13.

ABSTRACT: Over 55% of the United States commercial fish and shellfish catch is dependent upon estuaries for spawning and nursery functions, but estuaries cannot function ecologically without an adequate supply, seasonal inflow, and quality of freshwater from inland rivers. Such inland river development projects as constructing reservoirs, leveeing rivers, dredging navigation channels, and diverting water for agriculture, cities, and industry have drastically changed freshwater inflows to many estuaries on the Atlantic and Pacific coasts and the Gulf of Mexico. The problems on the Atlantic coast are primarily reduced water quality and increased rate of runoff although reductions in quantity appear to be developing. On the Gulf of Mexico decreases in freshwater inflow quantity have reduced estuarine production on the Florida and Texas coasts. On the highly productive Mississippi Delta, levee and navigation channel construction has diverted river inflow to the Gulf of Mexico rather than allowing overflow to the estuarine habitats this has resulted in saltwater intrusion and marsh erosion. On the Pacific coast, Inflow to the San Francisco Bay complex has been reduced by over 50%, resulting in drastic estuarine changes.
KEYWORDS: Gulf of Mexico; estuary; biology; ecology; water quality; fisheries;

00086
Bergantino, R.N. 1971. Submarine regional geomorphology of the Gulf of Mexico. Geol. Soc. Am. Bull. 82:741-752.

ABSTRACT: Recent surveys and investigations in the Gulf of Mexico have provided sufficient new data to warrant an updated regional geomorphic classification. The Gulf region is divided, according to the methods used by geomorphologists for continental areas, into three major geomorphic divisions and sixteen provinces. Some of the provinces are further subdivided into sections and subsections. Most sections of the continental shelf contain Pleistocene wave-cut terraces. The lowest terraces generally lie near a depth of 65 fm. The continental slope is considered here to be a major geomorphic division, rather than a province, because of its variety of landforms and areal differences in geomorphic history. The steepness of the continental slope ranges from 2 degrees on the DeSoto Slope to greater than 45 degrees over limited areas of the reef-formed West Florida and Campeche Escarpments. Diapirs underlie all non-carbonate slopes and have largely altered the pre-existing topography. Great thicknesses of evenly bedded sediments underlie the Gulf floor. The deeper sediments were derived from the northwest and pre-date the salt tectonism that produced the Sigsbee Escarpment and the numerous diapirs.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology;

00087
Berkowitz, S.E. 1976. A comparison of the neuston and near-surface zooplankton in the northwest Gulf of Mexico. Master's thesis. Texas A&M University, College Station, TX. 148 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; biology; plankton; neuston;

00088
Bernard, B.B. 1980. Sources of biogenic methane in the Gulf of Mexico, p. 107-132. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; methane; seep;

00089
Bernard, B.B.; Brooks, J.M.; Sackett, W.M. 1976. Natural gas seepage in the Gulf of Mexico. Earth Planet. Sci. Lett. 31:48-54.

ABSTRACT: Hydrocarbon compositions and delta ^{13}C values for methane of fourteen natural seep gases and four underwater vents in the northwestern Gulf of Mexico are reported. The $C_1/(C_2 + C_3)$ ratios of the seep gas samples ranged from 68 to greater then 1000, whereas delta 13C values varied from -39.9 to -65.5 ppt. Compositions suggest that eleven of the natural gas seeps are produced by microbial degradation whereas the remaining three have a significant thermocatalitically produced component. Contradictions in the inferences drawn from molecular and isotopic compositions make strict interpretation of the origins of a few of the samples impossible.
KEYWORDS: Gulf of Mexico; oil and gas; chemistry; hydrocarbon; methane; seep; stable isotope;

00090
Berryhill, H.L., Jr. [ed.]. 1977. Environmental studies, south Texas outer continental shelf, 1975: An atlas and integrated summary. Report to the Bureau of Land Management, Washington, DC. Contract No. 08550-MU5-20. 303 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; chemistry; geology; physical; meteorology; current; sediment; trace metal; hydrocarbon; benthos; plankton; fish; shrimp; STOCS;

00091
Berryhill, H.L., Jr.; Shideler, G.L.; Holmes, C.W.; Barnes, S.S.; Hill, G.W.; Martin, E.A.; Pyle, C.A. 1976. Environmental studies, south Texas outer continental shelf. Report to Bureau of Land Management, New Orleans, LA. Contract No. AA550-MU6-24. 626 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; geology; chemistry; biology; physical; sediment; STOCS;

00092
Berryhill, H.L., Jr.; Shideler, G.L.; Holmes, C.W.; Hill, G.W.; Barnes, S.S.; Martin, R.G., Jr. 1976. Environmental studies, south Texas outer continental shelf. Geology. Part I. Geologic description and interpretation. Part II. Inventory of data archived and analyzed. Report to the Bureau of Land Management, Washington, DC. Contract No. 08550-MU5-20. USGS-GD-76-006. 270 p. + app. NTIS order No. PB-251-341.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; geology; sediment; sediment texture; geologic history; stratigraphy; trace metal; mineralogy; STOCS;

00093
Berryhill, H.L., Jr.; Trippet, A.R. 1981. Map showing water circulation and rates of sedimentation in the Corpus Christi 1° x 2° quadrangle, Texas. U.S. Geol. Surv., Misc. Publ. Ser. Map No. 1-1287-A.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; geology; sedimentation; current; physical;

00094
Berry, R.J.; Baxter, K.N. 1969. Predicting brown shrimp abundance in the northwestern Gulf of Mexico. FAO Fish. Rep. No. 57(3):775-798.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; fisheries; shrimp; fishery statistics;

00095

Berry, R.J.; Benton, R.C. 1969. Discarding practices in the Gulf of Mexico shrimp fishery. FAO Fish. Rep. No. 57(3):983-999.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp;

00096

Bert, T.M.; Humm, H.J. 1979. Checklist of the marine algae on the offshore oil platforms of Louisiana, p. 437-446. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; oil and gas; flora; taxonomy; petroleum platform; environmental impact; Offshore Ecology Investigation;

00097

Bird, J.L. 1981. Relationships between vertical distributions of zooplankton and phytoplankton on the Texas continental shelf and in laboratory water columns. Ph.D. dissertation. The University of Texas at Austin. 162 p. (Diss. Abs. 43/01-B:19).

ABSTRACT: This describes zooplankton distributions over short periods in the presence or absence of water column stratification and phytoplankton vertical heterogeneity. Vertical distributions of several environmental parameters and common zooplankton species were determined at a station in the northwestern Gulf of Mexico in June, July, and September, 1978. June and July profiles were typical of summertime water column stratification. Chlorophyll a and turbidity increased in concentration below the thermocline. In September chlorophyll a was most abundant in the upper mixed layer while turbidity was greatest near the bottom. In June and July the cladoceran Penilia avirostris, copepodites of the calanoid copepods Temora turbinata and Centropages velificatus, and C I - C III copepodites of Eucalanus pileatus were concentrated within the subsurface chlorophyll a layer. Older, more mobile animals were not as strongly concentrated within the chlorophyll a layer. Adult T. turbinata were concentrated in the chlorophyll a layer in June but migrated diurnally in July. E. pileatus adults and C IV, C V copepodites were scarce in June and July throughout the water column. Adult C. velificatus were distributed similarly to their copepodites in June and variable in July. In September, abundances of all animals generally decreased slightly with depth. T. turbinata and C. velificatus were more abundant near the surface during the day than at night. In the laboratory, dual water columns were used to examine T. turbinata's response to phytoplankton migrations over 48-hour periods. T. turbinata exhibited its simplest migratory pattern most clearly at high concentrations of the dinoflagellate Prorocentrum micans. In the morning it migrated to the surface, paralleling the migration of P. micans. During the afternoon the animals drifted downward slightly; this drift accelerated at night. In the presence of the dinoflagellate Cachonina niei, which increased in concentration with depth, T. turbinata remained deeper in the water column throughout the experiment than when it was in the presence of P. micans. In the absence of food, T. turbinata soon descended to the bottom and remained there. Although the method by which herbivores detect localized concentrations of phytoplankton remains to be determined, results of this study demonstrate that herbivorous zooplankton are able to compensate for phytoplankton heterogeneity. This ability is clearly important to the herbivore in environments where food resources vary spatially and temporally.
KEYWORDS: Texas; continental shelf; biology; plankton; ecology;

00098

Bird, J.L. 1983. Relationships between particle-grazing zooplankton and vertical phytoplankton distributions on the Texas continental shelf. Estuar. Coast. Shelf Sci. 16(2):131-144.

ABSTRACT: This study compares vertical distributions of Penilia avirostris and Temora turbinata with vertical distributions of chlorophyll a over short time periods at a station in the north-western Gulf of Mexico in the summer and early fall of 1978. In June and July P. avirostris and copepodites of T. turbianata were concentrated within the subsurface chlorophyll a layer. Adult T. turbinata were more widely distributed than the copepodites in June but apparently migrated diurnally in July. In September, abundance of all animals generally decreased slightly with depth. This change in animal distribution reflected changes in biotic and abiotic variables between this cruise and previous cruises. In all cruises, animal distributions were positively correlated with chlorophyll a.
KEYWORDS: Texas; continental shelf; biology; plankton; ecology; chlorophyll;

00099
Bishop, J.M. 1980. Climatological oil trajectory model. Mariners Weather Log 24(5): 344-350

ABSTRACT: The Environmental Data and Information Service (EDIS) multiple trajectory model is discussed. In this model, the drift of oil is computed by adding, vectorially, the wind-induced current and the drift resulting from a permanent background current. Oil spreading is disregarded in order to produce conservative estimates of impact. Oil weathering is considered by permitting the trajectory to continue until a predetermined cutoff time is reached. The Campeche oil spill was run on this model, giving the following results. Trajectories initiated in the summer have a low but finite probability of impact along the Texas coast, with average transit times of APPROX. 30-50 days. The increased magnitude of the actual permanent current (especially the Mexican Current) will increase the probability of U.S. coastal impact and decrease average transit time to the U.S. coast. The region of the U.S. coast which has the highest probability of being impacted is from Brownsville to Galveston, TX. The model projected impact along the U.S. coast from late summer until fall if the well was not capped before the summer of 1980.
KEYWORDS: Texas; oil and gas; oil spill; Ixtoc; model;

00100
Blackbourn, S.R. 1980. Texas, 1979-experience with Marco Filterbelt Skimmers on IXTOC 1 and Burmah Agate crude oil spills, p. 398-406. In OCEANS 80 Conference Proceedings, Seattle, WA, 8 Sep 1980. Institute of Electrical and Electronics Engineers, New York.

ABSTRACT: On June 3, 1979, the exploratory drilling rig, Sedco 135, hit a fractured stratum while drilling at 3624 m below the ocean floor in 48 m of water. This oil well is designated IXTOC 1, located 80 km NW of Cindad del Carmen, Mexico. After hitting the fractured stratum, events led to the uncontrolled oil blowout of the IXTOC 1 oil well. With seasonal current and wind patterns pushing the IXTOC 1 oil northward, the U.S. was impacted along the southern Texas coast during Aug/Sep, 1979. On Nov 1, 1979, the ore carrier Mimosa} was heading out of the Galveston ship canal after offloading its cargo. At 0500 hours local time, the Mimosa} struck the 61,674 DWT Burmah Agate} amidships. Both vessels immediately caught fire. It was not until mid-Jan, 1980 that the Burmah Agate} fire and resulting oil spill were under control. During the IXTOC 1 and Burmah Agate} tanker spill recovery efforts, U.S. Navy-owned Marco Class V and a Marco Class XI Oil Recovery System were responsible for the major water-borne spill recovery. This paper addresses the experiences involving the Marco oil spill recovery equipment during these two spills.
KEYWORDS: Texas; Mexico; barrier island; coastal waters; continental shelf; oil and gas; oil spill; environmental impact; Ixtoc;

00101
Blus, L.; Cromartie, E.; McNease, L.; Joanen, T. 1979. Brown pelican: population status, reproductive success, and organochlorine residues in Louisiana, 1971-1976. Bull. Environ. Contam. Toxicol. 22:128-135.

ABSTRACT: In the previous report (Blus et al., 1975), we briefly described the recent troubled history of the brown pelican (Pelecanus occidentalis) in Louisiana and discussed the relationship of organochlorine pollutants and certain metals to the welfare of the newly established breeding colony in Barataria Bay. The purpose of this report is to further interpret the impact of organochlorine residues on population status and reproductive success of Louisiana brown pelicans.
KEYWORDS: Louisiana; biology; chemistry; bird; brown pelican; endangered species; environmental impact; pesticide;

00102
Blus, L.; Joanen, T.; Belisle, A.A.; Prouty, R.M. 1975. The brown pelican and certain environmental pollutants in Louisiana. Bull. Envir. Contam. Toxicol. 13:646-655.

ABSTRACT: The recent history of the eastern brown pelican (Pelecanus occidentalis carolinensis) in Louisiana has involved the extirpation of a once flourishing population; a small breeding population has now been reestablished from birds taken from the stable Florida population. The elimination of the pelican as a breeding bird in Louisiana came about with little publicity, and the process was complete by the early 1960's. The pelican population in Louisiana was a large one, but it is difficult to determine the thoroughness and accuracy of the early counts. Bailey (1920) reported 50,000 brown pelicans on the Mud Lumps, which are small islands at the mouth of the Mississippi River. Pearson (1919) reported 65,000 brown pelicans on the Gulf Coast from Texas to Florida. Oberholser (1938) listed about 5,000 breeding pairs for the entire State and estimated only 4,550 pelicans on the Mud Lumps. The last record of nesting brown pelicans in Louisiana was in 1961 when Van Tets (1965) found 200 breeding pairs and 100 nestlings on North Island. We do not know the reasons for the population decline, although Joanen and Dupuie (1969) theorized that hurricanes, diseases, and pesticides were the major causes. Pelicans have been exposed to hurricanes and diseases throughout their existence, but the addition of adverse effects induced by pesticides or other pollutants may have been enough to push them into extinction in Louisiana. Now that transplanted pelicans from Florida have established a small breeding population, it is important to determine the levels of environmental pollutants in these pelicans and to determine the effects of these pollutants.
KEYWORDS: Louisiana; biology; chemistry; environmental impact; bird; brown pelican; endangered species; pesticide;

00103
Board of Commissioners of the Port of New Orleans. 1983. Port of New Orleans, 1983-84 annual directory. Board of Commissioner of the Port of New Orleans, New Orleans, LA. 112 p.

ABSTRACT: The Port of New Orleans 1983-84 Annual Directory briefly describes the commerce activities at the Port during the previous year, and outlines forth coming changes and additions in the Port's facilities. In addition, the directory lists the private industries associated with local waterborne commerce, as well as relevant government agencies and trade development office.
KEYWORDS: Louisiana; Mississippi River; socioeconomics; shipping;

00104
Board of Commissioners of the Port of New Orleans. 1984. Port of New Orleans barge information. Board of Commissioners of the Port of New Orleans, Marketing Division, New Orleans, LA. 1 p.

ABSTRACT: This is a compilation of barge activity in the Port of New Orleans during the ten year span form 1973 through 1982. Data includes the number of barges, tonnage handled, and the percent of the total tonnage handled in the port carried by barges.
KEYWORDS: Louisiana; Mississippi River; socioeconomics; shipping;

00105
Boehm, P.D. 1982. Ixtoc oil spill assessment: Appendices. Report to Bureau of Land Management, New Orleans, LA. 86 p. Contract No. AA851-CT0-71. NTIS order No. PB82-197799.

ABSTRACT: The Ixtoc I oil well blowout in the Bay of Campeche resulted in the largest documented spill in history. Approximately half a million metric tons of oil were released into the marine environment from June 1979 to March 1980, with an unknown quantity of oil impacting the northwest Gulf of Mexico shelf. This study was undertaken to establish the effects of residues of Ixtoc oil on the inner shelf. During the study the Burmah Agate oil tanker spilled part of its cargo of light crude oil following a collision off Galveston, Texas. A suite of chemical analytical techniques was employed successfully to firmly establish the range of compositions of Ixtoc and Burmah Agate oils which might be encountered in sediments and animal tissue.
KEYWORDS: Texas; Mexico; continental shelf; coastal waters; oil and gas; biology; chemistry; oil spill; sediment; hydrocarbon; shrimp; environmental impact; Ixtoc;

00106
Boehm, P.D. 1982. Ixtoc oil spill assessment: Executive summary. Report to Bureau of Land Management, New Orleans, LA. 41 p. Contract No. AA851-CT0-71. NTIS order No. PB82-197773.

ABSTRACT: The Ixtoc I oil well blowout in the Bay of Campeche resulted in the largest documented spill in history. Approximately half a million metric tons of oil were released into the marine environment from June 1979 to March 1980, with an unknown quantity of oil impacting the northwest Gulf of Mexico shelf. This study was undertaken to establish the effects of residues of Ixtoc oil on the inner shelf. During the study the Burmah Agate oil tanker spilled part of its cargo of light crude oil following a collision off Galveston, Texas. A suite of chemical analytical techniques was employed successfully to firmly establish the range of compositions of Ixtoc and Burmah Agate oils which might be encountered in sediments and animal tissue.
KEYWORDS: Texas; Mexico; continental shelf; coastal waters; oil and gas; biology; chemistry; oil spill; sediment; hydrocarbon; shrimp; environmental impact; Ixtoc;

00107
Boehm, P.D. 1982. Ixtoc oil spill assessment: Final report. Report to Bureau of Land Management, New Orleans, LA. 335 p. Contract No. AA851-CT0-71. NTIS order No. PB82-197781.

ABSTRACT: The Ixtoc I oil well blowout in the Bay of Campeche resulted in the largest documented spill in history. Approximately half a million metric tons of oil were released into the marine environment from June 1979 to March 1980, with an unknown quantity of oil impacting the northwest Gulf of Mexico shelf. This study was undertaken to establish the effects of residues of Ixtoc oil on the inner shelf. During the study the Burmah Agate oil tanker spilled part of its cargo of light crude oil following a collision off Galveston, Texas. A suite of chemical analytical techniques was employed successfully to firmly establish the range of compositions of Ixtoc and Burmah Agate oils which might be encountered in sediments and animal tissue.
KEYWORDS: Texas; Mexico; continental shelf; coastal waters; oil and gas; biology; chemistry; oil spill; sediment; hydrocarbon; shrimp; environmental impact; Ixtoc;

00108
Boehm, P.D.; Fiest, D.L. 1980. Biological/chemical survey of Texoma and Capline sector salt dome brine disposal sites off Louisiana, 1978-1979. Volume VI. Determine hydrocarbon composition and concentration in major components of the ecosystem. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-30. 167 p. NTIS order No. PB81-174971.

ABSTRACT: A biological/chemical baseline survey of two proposed salt dome brine disposal sites off Louisiana, West Hackberry and Weeks Island, was conducted from June 1978 to May 1979. Samples of surface sediment, unfiltered seawater, white and brown shrimp and epibenthic organisms were collected during four samplings at five stations located within a 5-mile radius at each site. The hydrocarbon composition of the samples was characterized by glass capillary gas chromatography and synchronous spectro-fluorometry. Surface sediments at both sites contain moderate concentrations of hydrocarbons. White and brown shrimp contain low concentrations of hydrocarbons at both sites. Epibenthic fauna (crabs) contain much higher concentrations of hydrocarbons.
KEYWORDS: Louisiana; coastal waters; biology; chemistry; brine disposal; water quality; environmental impact; sediment; shrimp; hydrocarbon; Strategic Petroleum Reserve;

00109
Boehm, P.D.; Fiest, D.L. 1982. Subsurface distributions of petroleum from an offshore well blowout. The Ixtoc I blowout, Bay of Campeche. Environ. Sci. Technol. 16(2):67-74.

ABSTRACT: Concentrations of oil were measured in seawater in the vicinity of the blowout of the exploratory well Ixtoc I located in the Bay of Campeche (Gulf of Mexico) during the month of September 1979. Seawater samples from more than 20 stations located within 100 km of the blowout were analyzed aboard ship for petroleum hydrocarbons by synchronous fluorescence spectroscopy. Concentrations of oil ranged from 5 μg/L at a distance of 40 km to 10600 μg/L within several hundred meters of the blowout. A subsurface plume of oil droplets suspended in the top 20 m of the water column extended 25 km to the northeast of the blowout. The physical processes which might be controlling the behavior of the oil in the plume are discussed.
KEYWORDS: Mexico; continental shelf; chemistry; physical; oil and gas; oil spill; hydrocarbon; environmental impact; Ixtoc;

00110
Boehm, P.D.; Fiest, D.L.; Mackay, D.; Paterson, S. 1981. Physical-chemical weathering of petroleum hydrocarbons from the Ixtoc I blowout -- chemical measurements and a weathering model, p. 453-460. In Proceedings, 1981 oil spill conference (prevention, behavior, control, cleanup). American Petroleum Institute, Washington, DC.

ABSTRACT: None
KEYWORDS: Mexico; Texas; oil and gas; chemistry; hydrocarbon; oil spill; Ixtoc;

00111
Boehm, P.D.; Hirtzer, P. 1982. Gulf and Atlantic survey for selected organic pollutants in finfish. National Marine Fisheries Service, Woods Hole, MA. Northeast Fisheries Center. Rep. No. NOAA-TM-NMFS-F/NEC-13. 121 p. NTIS order No. PB82-254111.

ABSTRACT: The issues combines two reports. The first report, 'Gulf and Atlantic Survey for Selected Organic Pollutants in Finfish. 1: Gulf of Maine to Cape Hatteras,' presents information on both finfish and benthic invertebrates. The second report, '2: Chesapeake Bay to Port Isabel, Texas,' presents information on finfish only. Selected finfish and benthic epifaunal samples were analyzed for levels of petroleum hydrocarbons, chlorinated hydrocarbons, and polynuclear aromatic hydrocarbons contained in edible flesh. The project's goals were to scrutinize a 100-sample subset for the above organic pollutants.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; coastal waters; chemistry; fish; benthos; hydrocarbon; pesticide;

00112

Boehm, P.D.; Requejo, A.G. 1986. Overview of the recent sediment hydrocarbon geochemistry of Atlantic and Gulf coast outer continental shelf environments. Estuar. Coast. Shelf Sci. 23(1):29-58.

ABSTRACT: An overview of the hydrocarbon geochemistry of recent marine sediments from the U.S. Atlantic and Gulf of Mexico Outer Continental Shelf (OCS) regions is presented. Hydrocarbon levels along the Atlantic OCS are fairly uniform, ranging between < 0.1 and 20 ppm, with the higher values occurring in areas of fine-grained sediment accumulation. Elevated hydrocarbon concentrations appear to be associated with anthropogenic inputs of silt/clay-sized particles to OCS sediments via particulate resuspension and transport, as evidenced by an increase in contributions from the unresolved complex mixture (UCM) feature in gas chromatograms. Compositional characteristics of hydrocarbons in the high-carbonate sediments of the Eastern Gulf OCS indicate a primarily marine origin. Proceeding north and west along the shelf, sedimentary hydrocarbons assume a more terrestrial and/or anthropogenic character in response to a greater input of silt/clays from the Mississippi River. Highest hydrocarbon concentrations in this region (up to 70 ppm) are found in the shallow nearshore areas west of the Mississippi River discharge and in the vicinity of Galveston Bay along the South Texas OCS. In the North Atlantic, Eastern Gulf, South Texas Gulf and coastal Louisiana sediments a linear relationship exists between total hydrocarbon and total organic carbon concentrations, indicating that each area consists of a geochemical 'province' defined by a source input or depositional regime specific to the region. The use of tracer parameter/bulk parameter ratios (such as total hydrocarbon or individual PAH concentrations/total organic carbon content) in defining such provinces, and thus in serving as a basis for evaluating variations in source inputs as part of future surveys, is demonstrated. This approach views the hydrocarbon content and composition of Atlantic and Gulf coast OCS sediments as points on a spectrum defined by input types (sources) and deposition patterns (sedimentation and erosion), which conceptually link all the regions into a unified system.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; continental shelf; chemistry; geology; hydrocarbon; sediment;

00113

Boesch, D.F. [ed.]. 1982. Proceedings of the conference on coastal erosion and wetland modification in Louisiana: Causes, consequences, and options. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59. 256 p.

ABSTRACT: None
KEYWORDS: Louisiana; marsh; barrier island; biology; geology; erosion; dredging; environmental impact;

00114

Boesch, D.F. 1987. Louisiana estuaries: issues, resources, status, and management, p. 3119-3128. In Coastal Zone '87, Proceedings of the Fifth Symposium on Coastal and Ocean Management. American Society of Civil Engineers, New York, NY.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; biology; geology; chemistry; ecology;

00115

Boesch, D.F.; Levin, D.; Nummedal, D.; Bowles, K. 1983. Subsidence in coastal Louisiana: causes, rates, and effects on wetlands. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-83/26. 30 p.

ABSTRACT: Coastal wetlands are being lost at a rapid and accelerating rate in Louisiana. Much of this loss is attributable to a relative lowering of the wetland surface below the level adequate to support vegetation. Such rapid subsidence is a natural phenomenon, related to the progradation and abandonment of distributary lobes of the Mississippi River Deltaic Plain. For a considerable period after abandonment of new sediment sources, wetlands are able to keep pace with subsidence by accreting sediments reworked by marine processes. But inundation of interior wetlands removed from such an active sediment supply, wave exposure, and saltwater intrusion eventually result in deterioration of the wetlands. Human activities may accelerate this process by disrupting sediment supplies for wetland accretion, raising global sea level, causing saltwater intrusion, and withdrawals of subsurface materials. Present subsidence rates from tide gauge records exceed 40 mm/yr at the modern Mississippi River delta and approximate 10 mm/yr in wetlands near the gulf coast. Subsidence rates over the last 1,000 years appear to have been half the rates observed. This either results from natural variability, inaccuracy of tide gauge records, or human influences. The effect of the high rate of increase in locally apparent sea level on wetlands is difficult to quantitatively predict because of local variations in subsidence and accretion uncertainty regarding future global sea level, and lack of knowledge of the accretionary limits of wetlands.
KEYWORDS: Louisiana; Mississippi River Delta; marsh; coastal waters; geology; erosion; sedimentation;

00116

Boesch, D.F.; Rabalais, N.N. [ed.]. 1987. The long-term effects of offshore oil and gas development. Elsevier Applied Science, New York. 708 p.

ABSTRACT: Contents include: An assessment of the long-term environmental effects of U.S. offshore oil and gas development activities: future research needs; Petroleum industry operations: present and future; Dominant features and processes of continental shelf environments of the United States; Offshore oil and gas development activities potentially causing long-term environmental effects; Transport and transformations: water column processes; Transport and transformation processes regarding hydrocarbon and metal pollutants in offshore sedimentary environments; Transport and transformation of petroleum: biological processes; Biological effects of petroleum hydrocarbons: assessments from experimental results; The biological effects of petroleum hydrocarbons in the sea: assessments from the field and microcosms; Biological effects of drilling fluids, drill cuttings, and produced waters; Offshore oil development and seabirds: the present status of knowledge and long-term research needs; Effects of offshore oil and gas development on marine mammals and turtles; Physical alterations of marine and coastal habitats resulting from offshore oil and gas development activities; and A review of study designs for the detection of long-term environmental effects of offshore petroleum activities.
KEYWORDS: United States; continental shelf; oil and gas; biology; chemistry; geology; physical; hydrocarbon; oil spill; environmental impact; drilling fluid; cuttings;

00117

Boesch, D.F.; Turner, R.E.; Day, J.W., Jr. 1984. Deterioration of coastal environments in the Mississippi Deltaic Plain: Options for riverine and wetland management, p. 447-466. In V. Kennedy [ed.], The estuary as a filter. Academic Press, New York.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; marsh; erosion; dredging; management;

00118

Bogdanov, D.W.; Sokolov, V.A.; Kromov, N.S. 1968. Regions of high biological and commercial productivity in the Gulf of Mexico and Caribbean Sea. Oceanography 8(3):371-381.

ABSTRACT: Hydrological conditions, hydrochemical conditions, plankton distribution and commercial possibilities of common fishes in the Gulf of Mexico and Caribbean are discussed. High biological and commercial productivity are correlated with regions of upwelling and continental runoff. Regions associated with upwelling have high and constant productivity and commercial yield, while regions associated with continental runoff are characterized by seasonal and annual fluctuations of productivity and seasonal commercial yield.
KEYWORDS: Gulf of Mexico; biology; fisheries; plankton; ecology;

00119

Boland, G.S. 1980. Morphological parameters of the barnacle, Balanus tintinnabulum antillensis (Megabalanus antillensis) as indicators of physiological and environmental conditions. M.S. thesis. Texas A&M University, College Station, TX. 69 p.

ABSTRACT: Specimens of the barnacle, Balanus tintinnabulum antillensis were collected using SCUBA gear from stations in the Buccaneer Oil and Gas Field, 50 km south-southeast of Galveston, Texas. Collections were made during all four seasons of 1978 and in summer 1979. For comparison, a collection was made during summer 1979 at a platform 125 km east-northeast of the Buccaneer Field. Thirty individuals from each station were analyzed for meat wet weight, meat dry weight, cavity volume, mean tergum length, and mean scutum length. Statistical analyses were performed on log-transformed data. An index of condition or health was selected using the parameters of meat dry weight and cavity volume. These variables were used to construct linear regression relationships and were found to be dependent on depth, season, and proximity to some types of offshore platform discharges.
KEYWORDS: Texas; continental shelf; biology; oil and gas; environmental impact; Buccaneer Field;

00120
Boland, G.S.; Gallaway, B.J.; Baker, J.S.; Lewbel, G.S. 1983. Ecological effects of energy development on reef fish of the Flower Garden Banks. Report to National Marine Fisheries Service, Southeast Fisheries Center, Galveston, TX. Contract No. NA80-GA-C-00057. 466 p.

ABSTRACT: Eight research cruises were conducted at the Flower Garden Banks in the northwestern Gulf of Mexico from 1980 to 1982 as part of a study designed to evaluate effects of the operations of a drilling platform (Mobil HI-A389-A) on fish populations at the adjacent East Flower Garden Bank. The platform was installed in early fall of 1981. The Flower Garden Banks were found to have characteristic fish assemblages zoned by depth and/or habitat types. Seasonal standing stocks were estimated for each of 16 reef fish taxa. Based on the abundance of fishes before, during, and after drilling, bottom water discharge of drilling muds and cuttings during 1982 did not result in any measurable impacts on the reef fish populations.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; biology; oil and gas; fish; reef; environmental impact;

00121
Boothby, R.N.; Avault, J.W. 1971. Food habits, length-weight relationship, and condition factor of the red drum (Sciaenops ocellata) in southeastern Louisiana. Trans. Am. Fish. Soc. 100(2):290-295.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; ecology; fish; drum;

00122
Boothe, P.N.; James, W.D. 1985. Neutron activation analysis of barium in marine sediments from the north central Gulf of Mexico. J. Trace Microprobe Tech. 3(4):377-399.

ABSTRACT: The neutron activation analysis (NAA) technique utilizing 11.5 day Ba-131 was validated and optimized for Ba determinations in marine sediments by the analysis of more than 600 samples. A Ba-131 half-life study showed that the 496.2 KeV photopeak was free of spectral interferences in all sediment types analyzed. However, NBS 1633a coal fly ash standard reference material showed evidence of significant spectral interference at 496.2 KeV (approx. 9%) from Ruthenium-103 (497.1 KeV). Standard materials were calibrated against single element Ba standards. Accuracy of the technique was .+-. 4% based on the analysis of known standard materials by both the Ba-131 and Ba-139 (short-irradiation) techniques and spike recovery checks. Depending on the barium and iron concentrations of the sediments, the standard error of the calculated Ba concentration and limit of quantitation (i.e., .+-. 10% of correct value) ranged from .+-. 0.9-4.7% and 80-128 mg/kg (ppm) dry weight respectively. The Ba-131 373.2 KeV peak (i.e., 373 hereafter) gave acceptable determinations only for samples containing > 1500 ppm Ba. Barium concentrations in Mississippi River suspended matter and surface (< 2 cm) and sub-surface sediments from the Texas-Louisiana continental shelf and slope are given. These data show widespread elevations (mean = 160 ppm) in surface Ba levels due to the discharge of > 5 .times. 106 metric tons of Ba from offshore petroleum drilling operations in this area.
KEYWORDS: Texas; Louisiana; continental shelf; chemistry; trace metal; sediment;

00123
Boothe, P.N.; Presley, B.J. 1985. Distribution and behavior of drilling fluids and cuttings around Gulf of Mexico drilling sites. Report to American Petroleum Institute, Washington, DC. 105 p. + app.

ABSTRACT: Surface and subsurface sediments within 500 m around six offshore drilling sites in the northwestern Gulf of Mexico were studied. Sediment type was described in terms of sediment texture and concentration of organic carbon, calcium carbonate, aluminum, and iron. The influence of drilling activities was characterized by determining sediment concentrations of elements known to be major constituents of drilling fluids (e.g., barium) and of trace elements of environmental concern (cadmium, chromium, copper, mercury, lead, and zinc) and hydrocarbons that may be released during drilling. Exploration, development, and production sites in both shallow and deep water were studied to determine how the amount of drilling, water depth, and elapsed time between cessation of drilling and sampling influence the characteristics of surrounding sediments (within 500 m).
KEYWORDS: Louisiana; Texas; continental shelf; oil and gas; chemistry; geology; physical; sediment; trace metal; drilling fluid; cuttings;

00124

Boothe, P.N.; Presley, B.J. 1987. The effects of exploratory petroleum drilling in the northwest Gulf of Mexico on trace metal concentrations in near rig sediments and organisms. Environ. Geol. Water. Sci. 9(3):173-182.

ABSTRACT: For a typical offshore petroleum well, 500-1000 tons (dry weight, excluding cuttings) of drilling fluid solids are discharged into the sea. In this study, concentrations of selected trace elements present in drilling fluids (Ba, Cd, Cr, Cu, Fe, Pb, Ni, V) were determined in surface sediments and macroepifauna around a Gulf of Mexico exploratory drilling site before, during, and after drilling operations. Observed significant increases in the levels of Fe in organisms and Ba and Cr in sediments were attributed to drilling discharges. Shrimp, which constitute the largest commercial fishery in the region, were intensively studied. Shrimp collected during the last few days of drilling had abdominal muscle Fe concentrations more than twice those in shrimp sampled before or after drilling. Enhanced Fe solubility (bioavailability) in seawater, caused by soluble organic chelating agents in the drilling fluids, is the most likely explanation for the observed increases. Significant increases in sediment Ba were observed at all sampling radii, but large increases (up to 7.5-fold) were observed only within a few hundred meters of the drilling site. An accurate mass balance of total discharged (excess) Ba present in sediments within 1000 m of the drilling site was determined. Only 9.3% of the total Ba used (and presumably other similar drilling mud components traced by Ba) was present within 1000 m at the conclusion of drilling; after 2.6 mo, only 6.6% was present. Significant sediment resuspension and transport occurring in the high-current nearshore study site (24 m water depth) was responsible for the low retention and rapid loss of discharged Ba in sediments. The largest mean increase in sediment Cr (26%) occurred at the 1000 m sampling radius.
KEYWORDS: Texas; continental shelf; chemistry; oil and gas; sediment; trace metal; drilling fluid; shrimp;

00125

Bosart, L.F. 1976. The role of the Gulf of Mexico in cyclogenesis. In Collection of preprints of papers presented at Conference on Meteorology over the Gulf of Mexico, 14-16 January 1976. Center for Applied Geosciences, Texas A&M University, College Station, TX.

ABSTRACT: A detailed case study is made of cyclogenesis in the extreme northeastern Gulf of Mexico and adjacent southeastern U.S. coast. The results show the importance of ageostrophic motions in establishing the Georgia-Carolinas coastal baroclinic zone which precludes any well-defined warm front passage across Florida. A second case study is made of cyclogenesis in southern Louisiana for which convection appeared to play a role in the initial stages of development.
KEYWORDS: Gulf of Mexico; physical; meteorology; hurricane;

00126

Bosart, L.F. 1984. Texas coastal rainstorm of 17-21 September 1979: an example of synoptic-mesoscale interaction. Monthly Weather Rev. 112(6):1108-1133

ABSTRACT: A case study is made of the Texas coastal rainstorm of Sept. 17-21, 1979, in which more than 50 cm of rain inundated the area. The precipitation developed along a weak baroclinic zone left in place by a trough passage at higher latitudes. A cold upper tropospheric vortex over the southwestern U.S. permitted relatively cooler and drier air to flow southward over the warmer waters of the western Gulf of Mexico. Differential heating and moistening along a Texas coastal front slowly destabilized the atmosphere and set the stage for a convective-scale response. A mesoscale cyclonic circulation formed near the southwestern end of the coastal front and along the western edge of a convective cloud cluster. Embedded within this circulation was a short-lived mesocyclone that achieved tropical storm strength for 12 hr. The case is a specific example of mesoscale circulation in which origin and evolution are controlled by synoptic-scale patterns. The mesoscale disturbance, once formed, moves northeastward parallel to the coast. It gradually moves into an environment more favorable for quasi-geostrophic intensification as the circulation expands in area.
KEYWORDS: Texas; physical; meteorology;

00127

Bouma, A.H.; Bryant, W.R.; Davies, D.K.; Tieh, T.T. 1968. Study of the continental shelf of the Gulf of Mexico. Report to the U.S. Geol. Survey. Texas A&M University, Department of Oceanography, College Station, TX. Project 506, Reference 68-2T. 139 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; geology; geologic history; mineralogy; sediment; stratigraphy;

00128

Bouma, A.H.; Chemlik, F.B.; Rezak, R. 1961. East Bay, Mississippi River Delta. Trans. Gulf Coast Assoc. Geol. Soc. 21:273-389.

ABSTRACT: None
KEYWORDS: Louisiana; geology; Mississippi River Delta;

00129

Bouma, A.H.; Coleman, J.M.; Wright-Meyer, A.A.; Stelting, C.E. 1985. Mississippi Fan: DSDP Leg 96 drilling results, p. 105-112. In Proceedings, 17th Annual Offshore Technology Conference, vol. 2. Paper No. OTC 4909.

ABSTRACT: The Mississippi Fan in the Gulf of Mexico is a Pleistocene accumulation of deepwater deposits, about 300,000 km(2) in areal extent and up to 4 km thick. Seismic reflectors of regional continuity divide the fan into at least seven individual, slightly lenticular, bodies called fanlobes. A general migration from west to east and basinward occurred through the Pleistocene. Each fanlobe is characterized by a channel-overbank complex divisible into four main areas: canyon, upper-, middle-, and lower fan. The youngest fanlobe starts at the Mississippi Canyon, a feature formed by retrogressive slope failures. This canyon changes into an erosive and slightly aggradational channel on the upper fan (1200-2200 m water depth).
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; geologic history; Deep Sea Drilling Project;

00130

Bouma, A.H.; Stelting, C.E.; Coleman, J.M. 1984. Mississippi fan: Internal structure and depositional processes. Geo-Mar. Lett. 3:147-153.

ABSTRACT: The Mississippi Fan is a Quaternary accumulation composed of more than seven elongated fan lobes. Isopach and structure maps show frequent shifting of these lobes. The Mississippi Canyon, formed by retrogressive slumping, connects to the youngest fan lobe. The upper fan-lobe is characterized by a large, incised, partially infilled, leveed channel. The middle fan-lobe is aggradational, convex in cross section, with a channel-levee complex on its apex. The lower fan-lobe contains a recently active small channel and several abandoned ones. Depositional patterns can be explained by several processes: "fluvial," debris flows, and turbidity currents.
KEYWORDS: Louisiana; continental slope; Mississippi Fan; geology; sedimentation; geologic history;

00131

Boyd, R.; Penland, S. 1981. Washover of deltaic barriers on the Louisiana Coast. Trans. Gulf Coast Assoc. Geol. Soc. 31:243-248.

ABSTRACT: Washover processes play an important role in the transgressive development of barrier coastlines. Sea level elevation necessary for overwash is composed of a storm surge component, a wave setup component, a wave runup component, and an astronomical tide component. The nature and severity of overwash is a function of overwash elevation, its frequency of occurrence, and regional barrier geometry. Washover deposits on Louisiana barriers often account for over 50 percent of total sediment storage. Louisiana barriers have evolved by deltaic distributary abandonment; continuing sequential evolution of Mississippi Delta complexes has generated a corresponding sequence of transgressive barriers. The resulting spectrum of barrier geometries has provided an ideal field site for the examination of washover form variability and its controlling processes.
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; erosion; geology;

00132

Boyle, E.A.; Reid, D.F.; Huested, S.S.; Hering, J. 1984. Trace metals and radium in the Gulf of Mexico: An evaluation of river and continental shelf sources. Earth Planet. Sci. Lett. 69 (1):69-87.

ABSTRACT: Several studies have provided evidence for the enrichment of trace elements in coastal waters, particularly for copper. These enrichments have been attributed to diffusion from continental shelf sediments and to an influx of river water. The author attempted to resolve between these sources by undertaking an extensive suite of measurements of trace metals (Cu, Ni, Cd), super(226)Ra and super(228)Ra in the surface waters of the Gulf of Mexico, along with trace metal profiles at 6 stations (April 1981 and December 1982). These data establish that enrichments of copper, nickel and cadmium occur in the shallow waters of the Gulf of Mexico. On the Mississippi continental shelf, high trace element concentrations (Cu, Ni: similar to 9 nmol/kg Cd: similar to 200 pmol/kg) in lower-salinity waters (16ppt) are similar to those observed in the Mississippi plume at the same salinity. This evidence suggests a river water source.
KEYWORDS: Gulf of Mexico; continental shelf; chemistry; sediment; trace metal; radionuclide;

00133

Brandsma, M.G.; Davis, L.R.; Ayers, R.C., Jr.; Sauer, T.C., Jr. 1980. A computer model to predict the short-term fate of drilling discharges in the marine environment, p. 588-610. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: oil and gas; drilling fluid; physical; model;

00134
Branstetter, S. 1981. Biological notes on the sharks of the north central Gulf of Mexico. Contrib. Mar. Sci. 24:13-34.

ABSTRACT: From Jan. 1978 to Feb. 1980, 621 sharks of 18 spp. were examined or tagged in the north central Gulf of Mexico between the mouth of the Mississippi River and Cape San Blas, Florida, USA, and offshore to waters 2000 m deep. The majority of sharks were caught on floating longlines. Specimens were taken in all months of the year, but many species were caught more frequently in Oct. and Nov. The numbers of females were about twice those of males in all species except Sphyrna lewini where males greatly outnumbered females. Most species had a widespread distribution, but Carcharhinus brevipinna was taken primarily west of Mobile Bay, Alabama, and C. plumbeus occurred more commonly east of there. For most species, males mature at a smaller size than females, and do not attain as great a length. Rhizoprionodon terraenovae, Carcharhinus acronotus, C. brevipinna, and C. limbatus were taken in sufficient quantities to determine their reproductive cycles. All 4 spp. have a breeding period in June and July, a gestation period of 10-12 mo., and a parturition period from late April or early May through early June. The limited reproductive data for the remaining species tended to follow a similar trend, except possibly for Galeocerdo cuvieri and Carcharhinus obscurus. A range extension for C. signatus was established with 1 specimen taken near the surface over 2000 m of water at 27.degree.58'N 87.degree.33'W. The species discussed include Isurus oxyrinchus, Sphyrna mokarran, S. tiburo, Carcharhinus isodon, C. falciformis, C. leucas, Negaprion brevirostris, Alopias vulpinus and Eugomphodus taurus.
KEYWORDS: Louisiana; Mississippi; Alabama; Florida; coastal waters; continental shelf; continental slope; biology; fish; shark;

00135
Branstetter, S.; McEachran, J.D. 1983. A first record of the bigeye thresher, Alopias superciliosus, the blue shark, Prionace glauca, and the pelagic stingray, Dasyatis violacea, from the Gulf of Mexico. N.E. Gulf Sci. 6(1):59-61.

ABSTRACT: Details are presented on the findings of: (1) Alopias superciliosus off the north Texas coast on 21st August 1980 and 23rd May 1981 off the south Texas coast (2) Prionace glauca in the northwestern Gulf on 21st August 1980 and (3) Dasyatis violacea in the northwestern Gulf on 27th April 1980.
KEYWORDS: Texas; coastal waters; continental shelf; biology; fish; shark;

00136
Braunstein, J. [ed.]. 1970. Bibliography of Gulf Coast geology, special publication 1. Gulf Coast Association of Geological Societies, New Orleans, LA. 2 vol. 1045 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; geology; bibliography;

00137
Brent, C.R.; Williams, H.P.; Bergin, W.A.; Tyvoll, J.L.; Myers, T.E. 1979. Organic carbon, inorganic carbon, and related variables in offshore oil production areas of the northern Gulf of Mexico, p. 245-264. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; chemistry; oil and gas; organic carbon; biochemical oxygen demand; environmental impact; Offshore Ecology Investigation;

00138

Brice, L.P. 1983. Zooplankton community structure: the effects of long-term petroleum operations in southeastern Louisiana salt marshes. Master's Thesis. Louisiana State University and Agricultural and Mechanical College, Baton Rouge, LA. 69 p.

ABSTRACT: The salt marsh ecosystem in southeastern Louisiana was studied to test for differences in zooplankton community structure resulting from activities related to petroleum recovery. Research was undertaken from June 1976 through May 1977 in Bayous Ferblanc and Laurier and the Texaco Leevile oil field. Copepod nauplii and total zooplankton (200-400 um) showed a significant increase in abundance in oil field ponds. This increase in abundance may be associated with high concentrations of small phytoplankton in the area. No differences in zooplankton abundance were reported when size fractions were combined. Detritus weight (200-400 um, 400-560 um) was also significantly higher in oil field bayous, probably related to boat traffic and dredge and spoil operations. Zooplankton abundance varied as a function of seasonal variations in salinity and temperature. Average zooplankton biomass and production calculated from published length-weight relationships and turnover times were 27.5 mg/m3 and 1.84 mg/m3/yr for bayous, and 41.9 mg/m3 and 3.16 mg/m3/yr for ponds. Marsh ponds appear to be productive aquatic habitats in salt marsh ecosystems, and it is suggested that killifish communities from these ponds may provide a vehicle for transport of production to large consumer species.
KEYWORDS: Louisiana; marsh; oil and gas; biology; ecology; plankton; environmental impact;

00139

Bright, T.J. 1968. A survey of the deep sea bottom fishes of the Gulf of Mexico below 350 meters. Ph.D. Dissertation. Texas A&M University, College Station, TX. 218 p.

ABSTRACT: Deep sea bottom fishes were collected by dredge from the Desoto Canyon to the Mississippi fan and Sigsbee Deep areas of the Gulf of Mexico below 350 meters. Samples were taken during cruises 67-A-5, 66-A-9 and 68-A-3 of the Texas A&M University research vessel R/V Alaminos. In addition to the dredge, some fishes were collected with an Isaacs Kidd mid-water trawl. Data include notes on the abundance and diversity of deep sea fishes of the Gulf as well as their distribution, depth range and capture location. Diagrammatic illustrations are included with systematic notes and graphs show the depth distribution of different species.
KEYWORDS: Gulf of Mexico; continental slope; deep sea; biology; fish;

00140

Bright, T.J. 1977. Coral reefs, nepheloid layers, gas seeps, and brine flows on hard-banks in the northwestern Gulf of Mexico, p. 39-46. In Proceedings, Third International Coral Reef Symposium, University of Miami. Vol 1.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; reef; biology; chemistry; geology;

00141

Bright, T.J. (No date). Survey of deep sea bottom fishes, Gulf of Mexico. Texas A&M University, College Station, TX. 218 p.

ABSTRACT: Deep sea bottom fish obtained through dredging in the Gulf of Mexico are reported on. Data available includes the identified specimens, location, depth, numbers caught, and morphometric measurements. Data were collected from June, 1964 to June, 1969.
KEYWORDS: Gulf of Mexico; biology; deep sea; fish;

00142

Bright, T.J.; Kraemer, G.P.; Minnery, G.A.; Viada, S.T. 1984. Hermatypes of the Flower Garden Banks, northwestern Gulf of Mexico: A comparison to other western Atlantic reefs. Bull. Mar. Sci. 34 (3):461-476.

ABSTRACT: The East and West Flower Garden Banks, at the continental shelf edge 103 nautical miles southeast of Galveston, Texas, exist in clear, oceanic water with annual temperature variations from 18 to 32 degrees C. Submerged tropical coral reefs dominated by Montastrea annularis and harboring 15 additional hermatypic coral species and 10 genera of red calcareous algae occupy the bank tops between 15 and 36 m. The banks are dominated overwhelmingly by crustose coralline algae between 50 and 85 m. Eighty-five percent of the substratum on the shallowest reefs is hard, the rest is coarse carbonate sand or coral gravel. Live coral cover on the hard substratum exceeds 50%, with Montastrea annularis covering approximately 30%. Coral diversity is low compared to Caribbean and Florida reefs, but very similar to that of Bermuda reefs. Accretionary and encrusting growth rates of corals at the Flower Gardens are similar to those of the same species in Florida and the Caribbean.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; reef; biology; benthos; ecology; taxonomy;

00143

Bright, T.J.; LaRock, P.A.; Lauer, R.D.; Brooks, J.M. 1980. A brine seep at the East Flower Garden Bank, Northwestern Gulf of Mexico. Int. Rev. Gesamt. Hydrobiol. 65(4):535-549.

ABSTRACT: Dissolution of Triassic-Jurassic, intrusive salt deposits within 150 m of the sea floor produces a hypersaline brine seep (approx 200 o/oo) at 71 m water depth on the East Flower Garden Bank. The anoxic, sulfide-rich brine supports large populations of sulfur oxidizing bacteria. Toxic effects of the brine on surrounding epifauna, infauna and fishes are limited to the brine and a very narrow surrounding zone. Leafy algae, coralline algae, foraminifers, sponges, bryozoans, anemones, polychaetes, sipunculids, amphipods and pelecypods live on the hard substratum within 2 cm of the brine-seawater interface. Sixty meters from the brine outflow, at dilutions of 50 to 1, the carbonate sand harbors polycheates, ostracods, nematodes, amphipods, tanaidaceans, isopods, copepods, pelecypods and gastropods. Certain species of fish momentarily enter the brine and brine-seawater mixtures.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; geology; biology; ecology; seep; salinity; bacteria; benthos; fish;

00144

Bright, T.J.; Pequegnat, L.H. [ed.]. 1974. Biota of the West Flower Garden Bank. Gulf Publ. Co., Houston, TX. 435 p.

ABSTRACT: Topics include biotic zonation; heavy metals; foraminifera; hydroids; corals; mollusks; ostracods; crustaceans and other arthropods; worms; echinoderms; animals associated with the sea urchin, Diadema antillarum; and fishes.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; biology; reef; benthos; fish;

00145

Bright, T.J.; Powell, E.N.; Rezak, R. 1980. Environmental effects of a natural brine seep at the East Flower Garden Bank, northwestern Gulf of Mexico, p. 291-316. In R.A. Geyer [ed.], Marine Environmental Pollution. Elsevier Oceanography Series, 27A, Elsevier, New York.

ABSTRACT: The East Flower Garden (EFG) brine seep is a natural example of a point-source brine discharge. As such, it could provide a natural experiment on the as yet unknown long-term effects of brine discharges on the continental shelf benthic biota. Brines, as point-source pollutants, will probably become more and more common in coastal embayments and on the continental shelf, with an increase in oil production, the development of a strategic petroleum reserve, and the development of desalination technology. The effects of such brine discharges on the biota of the receiving basin have been reviewed recently by Mackin (1973), and Moseley and Copeland (1974). This recent interest in man-made high-salinity systems has somewhat obscured the fact that naturally occurring brine discharges and other high-salinity systems are not uncommon, particularly in certain areas such as the Gulf of Mexico. These may be important components of, and have important effects on, the natural ecosystem in these areas.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; biology; chemistry; seep; reef;

00146

Bright, T.J.; Powell, E.N.; Rezak, R. 1980. Environmental effects of a natural brine seep at the East Flower Garden Bank, northwestern Gulf of Mexico, p. 291-316. In R.A. Geyer [ed.], Environmental Pollution. Elsevier Oceanography Series 27A. Elsevier, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; Flower Garden Banks; reef; biology; chemistry; seep; salinity; benthos; ecology;

00147

Bright, T.J.; Rezak, R. 1976. A biological and geological reconnaissance of selected topographical features on the Texas continental shelf. Report to Bureau of Land Management, New Orleans, LA. Contract No. 08550-CT5-4. 377 p. NTIS order No. PB80-166036.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; reef; biology; geology;

00148
Bright, T.J.; Rezak, R. 1977. Reconnaissance of reefs and fishing banks of the Texas continental shelf, p. 113-150. In R.A. Geyer [ed.], Submersibles and Their Use in Oceanography. Elsevier, New York.

ABSTRACT: Extensive scientific studies were conducted during 1974-1976 over the major commercial fishing banks and coral reefs found at considerable distances offshore on the Texas-Louisiana Outer Continental Shelf. The results of these survey and research efforts in which the submersible DIAPHUS played a significant and critical role are described in this chapter. The purpose of this research was to conduct "baseline" studies to obtain a better understanding of existing ecological conditions at these fishing banks and coral reefs. This information in turn is to be used in developing criteria to promulgate realistic regulations pertaining to the drilling for and production of oil and gas; as well as transporting these hydrocarbons to terminals and refineries along the Gulf Coast.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; reef; biology; geology;

00149
Bright, T.J.; Rezak, R. 1978. Northwestern Gulf of Mexico topographic features study. Report to Bureau of Land Management, New Orleans, LA. Contract No. AA550-CT7-15. 2 vol. NTIS order Nos. PB294-769/AS and PB81-106205.

ABSTRACT: Descriptive reconnaissance studies were completed in 1977 for Bouma, Bright, Ewing, Parker, Sackett, Sonnier, and 18 Fathom Banks. The reconnaissance studies include the geology and biology of the banks as observed from the submersible. In addition, at the East Flower Gardens, Sonnier, Bright, and Sackett Banks, the study included: the size distribution and mineralogy of the surrounding sediments; hydrography in the vicinity of the banks; chemical analyses of sediments and selected faunal components for trace metals and heavy molecular weight hydrocarbons; chemical analyses of the water column for nutrients, dissolved oxygen, and low molecular weight hydrocarbons; and temperature, salinity, transmissivity and current velocity profiles of the water column. A monitoring study was initiated within the living coral portion of the East Flower Gardens Bank. Through the use of long and short term time lapse camera systems, the spread of pathological conditions and the effect of physical damage to reef coral was observed. The brine lake discovered in 1976 was visited and further observations of this phenomenon were made. Also at the East Flower Gardens, a study of very near-bottom current magnitude and turbulence was made using dye emission apparatus observed from the submersible. The study of the distribution of reworked fossil coccoliths on the South Texas Outer Continental Shelf initiated during 1976 was continued, and has resulted in a much more detailed map of the transport pathways of suspended sediment.
KEYWORDS: Texas; Louisiana; Flower Garden Banks; continental shelf; reef; biology; geology; chemistry; physical;

00150
Bright, T.J.; Rezak, R. 1978. South Texas Topographic Features Study. Report to Bureau of Land Management, New Orleans, LA. Contract No. AA550-CT6-18. 2 vol. NTIS order Nos. PB294-768/AS and PB81-106197.

ABSTRACT: Detailed bathymetric charts were produced for Stetson Bank, the East Flower Garden Bank, and 28 Fathom Bank, southwest peak. Descriptive reconnaissance studies were completed in 1976 for Aransas Bank, Blackfish Ridge, Mysterious Bank, and 28 Fathom Bank. A descriptive account of biotic communities inhabiting Claypile Bank was prepared using existing data. The reconnaissance studies include: geology and biology of the banks and surrounding sediments; hydrography in the vicinity of the banks; chemical analyses of sediments and selected faunal components for trace metals and heavy molecular weight hydrocarbons; chemical analyses of the water column for nutrients, dissolved oxygen, and low molecular weight hydrocarbons, and temperature, salinity and transmissivity profiles of the water column. Post-drilling environmental assessments were made at Stetson Bank, South Baker Bank, Southern Bank and the East Flower Garden Bank. A high salinity brine lake was discovered and documented at the East Flower Garden Bank during the post-drilling assessment. Quantitative ecological studies were pursued into the relationships of epibenthic community distribution and abundance to the nepheloid layers at the Southern Bank and Hospital Rock.
KEYWORDS: Texas; continental shelf; biology; geology; chemistry; physical; reef; Flower Garden Banks;

00151

Brooks, D.A. 1983. Effects of a major hurricane on circulation in the western Gulf of Mexico. EOS Trans. Am. Geophys. Union 64(45):740. (Summary only.).

ABSTRACT: The tidal-residual circulation in the western Gulf of Mexico is strongly influenced by incident Loop Current anticyclones and their decay products. The eddy kinetic energy of the current fluctuations is generally larger than the corresponding mean KE over the west Texas continental slope, for example and current speeds of order 1 ms super(-1) have been observed in the upper thermocline. In August, 1980, a major hurricane crossed the western Gulf. As the storm approached landfall near Brownsville, Texas, it passed over a Loop Current anticyclone and an array of current meters moored over the continental slope. The background circulation and water mass properties in the thermocline were profoundly altered by the passage of the storm. In a period of about one day, relatively cool and fresh water, which was flowing offshore before the storm, was obliterated and replaced with northward-flowing water having Gulf Stream characteristics. The residual effects were evident for at least one month, long after the inertial storm wake had died out. The moored-instrument data suggest that the anticyclone was deformed or fragmented by the hurricane.
KEYWORDS: Texas; continental shelf; continental slope; physical; hurricane; current;

00152

Brooks, D.A. 1984. Current and hydrographic variability in the northwestern Gulf of Mexico. J. Geophys. Res. 89(C5):8022-8032.

ABSTRACT: From July 1980 to February 1981, ten current meters on three moorings were deployed in the 200- to 700-m depth range over the continental slope in the northwestern Gulf of Mexico. The currents were characterized by energetic fluctuations with time scales of a week to several months. Westward drifting Loop Current anticyclones provided the principal driving mechanism for the fluctuations. Longshore current speeds at the 200-m depth occasionally exceeded 70 cm/s and were persistently >50 cm/s during a 2-month period in the fall. Except during a hurricane, the currents were only marginally coupled with the winds measured at Brownsville, Texas. Tidal motions accounted for <1% of the current variance.
KEYWORDS: Gulf of Mexico; physical; continental slope; current; tide;

00153

Brooks, D.A.; Eble, M.C. 1982. Moored array observations in the Gulf of Mexico: Current meter data report for the July 1980 to February 1981 mooring period. Texas A&M University, Ref. No. 82-12-T.

ABSTRACT: An array of three moorings was deployed along the 730 m isobath in the western Gulf of Mexico at common depths of 200, 450, and 700 m. The central moorings were separated about 55 km, nearly along the 96■W meridian. The instruments recorded current speed and direction, temperature, and conductivity for about 6.5 months, from 18 July 1980 to 4 February 1981. The two shallowest meters at the northern mooring lost their speed sensors (rotors) early in the period, but the other variables were sampled throughout the mooring period. Further hydrographic information about the area is given by Brooks and Eble (1982), in a companion report.
KEYWORDS: Gulf of Mexico; physical; continental shelf; continental slope; deep sea; current;

00154

Brooks, D.A.; Legeckis, R.V. 1982. A ship and satellite view of hydrographic features in the western Gulf of Mexico. J. Geophys. Res. 87(C6):4195-4206.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; remote sensing; temperature;

00155

Brooks, D.A.; Nakamoto, S.; Kelly, F.J. 1984. Investigation of low frequency currents in the Gulf of Mexico. A report by Texas A&M Univ. Research Foundation for Conoco, Inc. and Amoco Research Co. Contract No. 110483-HHH-1AH.

ABSTRACT: The research investigated the recurrence frequency and velocity field characteristics of energetic processes in the Gulf of Mexico. Continental shelf waves and westward migrating eddies shed by the Loop Current were the primary processes examined. Energic events of low frequency, i.e., frequencies smaller than inertial and amplitudes greater than 30 cm/s were studied. Local wind-induced forcing was excluded except as needed to examine the forcing of shelf waves and to differentiate non-wind-forced events. By using a combination of public domain and private data bases, it was possible to make a more quantitative assessment of the processes than contained in the literature for the region.
KEYWORDS: Gulf of Mexico; physical; continental shelf; deep sea; wind; eddy; current;

00156

Brooks, G.R.; Doyle, L.J.; McNeillie, J.I. 1986. A massive carbonate gravity-flow deposit intercalated in the Lower Mississippi Fan, p. 541-546. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; sediment; sediment transport; Deep Sea Drilling Project;

00157

Brooks, J.M. 1975. Sources, sinks, concentrations, and sub-lethal effects of light aliphatic and aromatic hydrocarbons in the Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX.

ABSTRACT: The spatial distribution and sources of light hydrocarbons in the Gulf of Mexico are evaluated from surveys of over 5,000 miles of cruise tracks aboard the R/V GYRE, R/V ALAMINOS, and R/V MISS FREEPORT, and from over 300 discrete water samples.
KEYWORDS: Gulf of Mexico; chemistry; hydrocarbon;

00158

Brooks, J.M. 1976. The flux of light hydrocarbons into the Gulf of Mexico via runoff, p. 185-200. In H.L. Windom and R.A. Duce [ed.], Marine Pollutant Transfer. Lexington Books, Lexington, MA.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon;

00159

Brooks, J.M. 1979. Sources and distributions of petroleum hydrocarbons in the Gulf of Mexico: Summary of existing knowledge. Texas A&M University, College Station, TX. Tech. Rep. 80-17-T. 55 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon;

00160

Brooks, J.M.; Bernard, B.B.; Sackett, W.M.; Schwarz, J.R. 1979. Natural gas seepage on the south Texas shelf, p. 471-474. In Proceedings, 11th Annual Offshore Technology Conference. Paper No. OTC-3411.

ABSTRACT: An area of extensive gas seepage has been found on the South Texas shelf. The seep area extends for a distance of approximately 25 miles on a transect out from the coast at latitude 26°10'N. Water depths range between 65 and 130 meters. During nine samplings over a three year period, elevated near-bottom concentrations of methane (up to 500 nl/L), ethane (0.6 nl/L), and propane (0.5 nl/L) compared to nearby surface and other near-bottom waters were observed. Anomalous gaseous hydrocarbon levels were also observed in the interstitial waters at three stations sampled in the region. Ethane and propane concentrations were typically one order of magnitude higher in these sediments compared to typical South Texas shelf sediments. The $C_1/(C_2+C_3)$ ratios in the sediments were as low as 14 indicating that the seepage may be of a petrogenic origin and not from shallow biogenic (microbial) sources. Significantly higher percentages of hydrocarbonoclastic bacteria were observed in the seep area. These may be a direct result of hydrocarbon seepage. No anomalous interstitial gas concentrations were observed in the 'Serendipity Gas Seep Area' of South Texas.
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; methane; seep;

00161

Brooks, J.M.; Bernard, B.B.; Sauer, T.C., Jr.; Abdel-Reheim, H.A. 1978. Environmental aspects of a well blowout in the Gulf of Mexico. Environ. Sci. Technol. 12:695-702.

ABSTRACT: Studies were conducted around a well blowout site on the Texas continental shelf that resulted in the escape of large quantities of gas and creation of a crater 95 m deep and 500 m wide. Four months after the blowout a plume of suspended sediment and gas continued to emanate from the crater at a seep rate of approximately 10 X 10^6L/day. At this time molecular and isotopic analyses of the seeping gas indicated that the gas was principally of biogenic origin (predominantly methane and delta 13C of -60‰ ppt) and not accompanied by any brine seepage. The seep gas did, however, contain a small thermocatalitic component as evidenced by the $C_1/(C_2+C_3)$ ratio (about 95) and its liquid hydrocarbon content (1.23 mg/L). Measurements of gaseous and liquid hydrocarbons dissolved in the water in the vicinity of the seep indicated rapid dilution of the high concentrations observed over the plume. The depth to which sediments were redeposited around the crater was determined by carbon isotope measurements on the carbonate fraction of the sediment. Analysis of hydrocarbons in redeposited sediments indicated that the original blowout gas was of predominantly thermocatalitic origin, containing higher concentrations of C_2-C_{14} hydrocarbons than are presently seeping from the blowout. The impact of the blowout on temperature, salinity, dissolved oxygen, DOC, POC, TSM, helium, CO_2, ΣCO_2, and sulfate in the waters and sediment near the crater is also discussed.
KEYWORDS: Texas; continental shelf; chemistry; oil and gas; environmental impact; methane; hydrocarbon;

00162

Brooks, J.M.; Bright, T.J.; Bernard, B.B.; Schwab, C.R. 1979. Chemical aspects of a brine pool at the East Flower Garden Bank, northwestern Gulf of Mexico. Limnol. Oceanogr. 24(4): 735-745.

ABSTRACT: A small pool on the flank of the East Flower Garden bank at a depth of 72 m in the Gulf of Mexico contains anoxic, hypersaline (about 200 g/kg) water. The flux of brine into and out of the pool contributes to erosional processes on the bank. The bulk ionic composition of the brine is similar to that of the Orca Basin brine, but differences between the two in gaseous hydrocarbon and carbon isotope content indicate different modes of origin. High levels of bacterial activity in the brine are indicated by ATP (>80 ng/liter), hydrogen sulfide (>2,000 umol/liter), isotopically light total CO_2 (delta ^{13}C = -23 ppt), and the apparent generation of elemental sulfur.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; chemistry; stable isotope; hydrocarbon; seep;

00163

Brooks, J.M.; Bryant, W.R. 1985. Geological and geochemical implications of gas hydrates in the Gulf of Mexico. Texas A&M University, College Station. Dept. of Oceanography. Report to Department of Energy, Washington, DC. Rep. No. DOE/MC/21088-1964. 137 p. Contract No. FG21-84MC21088. NTIS order No. DE86001011/XAB.

ABSTRACT: This document presents the results of a study of the geological and geochemical implications of gas hydrates in the Gulf of Mexico. The report is based primarily on data obtained from available seismic surveys of the Green Canyon, Garden Banks, Mississippi Canyon, and Orca Basins areas of the northern continental margin of the Gulf of Mexico. The study also includes the data and analysis obtained from several gas hydrate cores recovered in these areas. The report provides new data relevant to gas hydrate research for more in-depth research of the Gulf of Mexico gas hydrates and provides significant information which advances the knowledge and understanding of gas hydrate formations in the natural environment. The report contains several high resolution seismic surveys. In the four hydrate sites studied in detail, the seismic ''wipeout'' zones were all associated with collapsed structures, fault scarps, and/or salt piercement structures. These features provide conduits for the upward migration of either biogenic or thermogenic gas from depth.
KEYWORDS: Gulf of Mexico; continental shelf; oil and gas; geology; chemistry; hydrocarbon; methane; sediment; seep;

00164

Brooks, J.M.; Cox, H.B.; Bryant, W.R.; Kennicutt, M.C. II; Mann, R.G.; McDonald, T.J. 1986. Association of gas hydrates and oil seepage in the Gulf of Mexico. Adv. Org. Geochem. 10:221-234.

ABSTRACT: Gas hydrates were recovered from eight sites on the Louisiana slope of the Gulf of Mexico. The gas hydrate discoveries ranged in water depths from 530 to 2400 m occurring as small to medium sized (0.5-50 mm) nodules, interspersed layers (1-10 mm thick), or as solid masses (>150 mm thick). The hydrates have gas:fluid ratios as high as 170:1 at STP, $C_1/(C_2+C_3)$ ratios ranging from 1.9 to >1000 and delta 13C ratios from -43 to -71 ppt. Thermogenic gas hydrates are associated with oil-stained cores containing up to 7‰ extractable oil exhibiting moderate to severe biodegradation. Biogenic gas hydrates are also associated with elevated bitumen levels (10-700 ppm). All gas hydrate associated cores contain high percentages (up to 65‰) of authigenic, isotopically light carbonate. The hydrate-containing cores are associated with seismic "wipeout" zones indicative of gassy sediments. Collapsed structures, diapiric crests, or deep faults on the flanks of diapirs appear to be the sites of the shallow hydrates.
KEYWORDS: Louisiana; continental slope; chemistry; oil and gas; hydrocarbon; methane; seep;

00165

Brooks, J.M.; Estes, E.L.; Wiesenburg, D.A.; Schwab, C.R.; Abdel-Reheim, H.A. 1980. Environmental assessment of Buccaneer Gas and Oil Field in the northwestern Gulf of Mexico, 1975-1980. Volume I. Investigations of surficial sediments, suspended particulates, and volatile hydrocarbons at Buccaneer Gas and Oil Field. NOAA Tech. Mem. NMFS-SEFC-47. 89 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; geology; chemistry; sediment; hydrocarbon; Buccaneer Field;

00166

Brooks, J.M.; Fredericks, A.D.; Sackett, W.M. 1973. Baseline concentrations of light hydrocarbons in Gulf of Mexico. Environ. Sci. Technol. 7:639-642.

ABSTRACT: A 2500-mile survey of light hydrocarbon concentrations in surface water of the Gulf of Mexico was conducted to determine baseline concentrations for a program to identify problems related to oceanic environmental quality. High concentrations seem to be associated solely with man's activities in the vicinity of ports and offshore petroleum drilling and production operations and in one case on the high seas, near a tanker reportedly discharging "clean ballast water."
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon; methane;

00167

Brooks, J.M.; Gormly, J.R.; Sackett, W.M. 1974. Molecular and isotopic composition of two seep gases from the Gulf of Mexico. Geophys. Res. Lett. 1(5):213-216.

ABSTRACT: Gas samples collected on the Texas-Louisiana continental shelf from two natural seeps had molecular (methane >99%) and isotopic (delta 13C of about -60° ppt) compositions highly indicative of a biogenic origin.
Bottom seepage of natural gases appears to be a common phenomenon on the northwestern continental shelf of the Gulf of Mexico. These gas seeps which are generally associated with topographic highs can readily be detected by commercial sonar equipment. They also may produce surface anomalies in low-molecular-weight hydrocarbon concentrations. The acoustical detection of the location of gas seeps is viewed in most of the literature as a petroleum exploration tool based on the concept that seeps are of a petrogenic origin and therefore indicate the location of oil and gas reservoirs. We present evidence here that at least part of the gas seepage from the continental shelf of the Gulf of Mexico is of biogenic as opposed to petrogenic origin.
KEYWORDS: Texas; Louisiana; continental shelf; chemistry; oil and gas; seep; hydrocarbon; methane;

00168

Brooks, J.M.; Kennicutt, M.C. II; Bidigare, R.R. 1987. Oil seep related chemosynthetic ecosystems on the Gulf of Mexico continental slope, p. 23. In 1987 AAAS annual meeting: 153rd National Meeting, Chicago, 14-18 February. (Abstract only).

ABSTRACT: Chemosynthetic organisms (tube worms, mussels and/or clams) have been identified at 17 sites on the Gulf of Mexico continental slope. All of these sites co-occur with seismic "wipe-out" zones which are associated with gas, oil and/or gas hydrates in the sediments. These discoveries significantly expand previous findings that these organisms are present at two sites on the continental slope offshore of Louisiana (600-800 m). Of 39 trawls in "wipe-out" zones, chemosynthetic-based tube worms, clams and mussels, or their remains, were recovered in 21, 10 and 4 trawls, respectively. Carbon isotopic analysis of more than 200 organisms confirmed the presence of chemosynthesis. All of the tube worms and mussels were carbon isotopically light, as compared to background fauna.
KEYWORDS: Louisiana; continental slope; oil and gas; biology; chemistry; seep; chemosynthesis; stable isotope;

00169

Brooks, J.M.; Kennicutt, M.C. II; Carey, B.D., Jr. 1986. Offshore surface geochemical exploration. Oil Gas J. 84 (42):66.

ABSTRACT: The migration of fluids, both brines and hydrocarbons, in the subsurface is a well established geologic phenomenon. Surface geochemical exploration is based on the premise that the detection of upward migrated hydrocarbons in near-surface sediments from deep sourced rocks, natural gas, or crude oil accumulations is useful information for the petroleum explorationist. Surface geochemical data historically have been used both to map fields and as regional indicators of whether an area is oil or gas prone. The Geochemical & Environmental Research Group (GERG) at Texas A&M University has been developing surface geochemical exploration methodologies through cooperative programs with the oil industry for the last 5 years. GERG has analyzed more than 35,000 samples from the Gulf of Mexico, California, Alaska, North Sea, West Africa, eastern South America and the Caribbean Islands during this period.
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon; geology;

00170
Brooks, J.M.; Kennicutt, M.C. II; Bidigare, R.R.; Fay, R.A. 1985. Hydrates, oil seepage, and chemosynthetic ecosystems on the Gulf of Mexico slope. Eos 66(10):106.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental slope; oil and gas; chemistry; hydrocarbon; chemosynthesis; seep;

00171
Brooks, J.M.; Kennicutt, M.C. II; Bidigare, R.R.; Fay, R.R.; Childress, J.J.; Fisher, C.R. 1987. Hydrates, oil seepage, and chemosynthetic ecosystems on the Gulf of Mexico slope: an update. Eos 68(18):498-499.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental slope; oil and gas; chemistry; hydrocarbon; chemosynthesis; seep;

00172
Brooks, J.M.; Kennicutt, M.C. II; Fay, R.R.; McDonald, T.J.; Sassen, R. 1984. Thermogenic gas hydrates in the Gulf of Mexico. Science 225:409-411.

ABSTRACT: Thermogenic gas hydrates were recovered from the upper few meters of bottom sediments in the northwestern Gulf of Mexico. The hydrates were associated with oil-stained cores at a water depth of 530 meters. The hydrates apparently occur sporadically in seismic "wipeout" zones of sediments in a region of the Gulf continental slope at least several hundred square kilometers in area.
KEYWORDS: Texas; Louisiana; continental slope; chemistry; hydrocarbon; methane;

00173
Brooks, J.M.; Reid, D.F.; Bernard, B.B. 1981. Methane in the upper water column of the northwestern Gulf of Mexico. J. Geophys. Res. 86(C11):11,029-11,040.

ABSTRACT: Shallow subsurface dissolved methane maxima were commonly observed in the northwestern Gulf of Mexico during a series of cruises between 1975 and 1977. Although there were often several methane maxima at various depths at any one particular station, the most prevalent and widespread occurred over a narrow band of sigma-t, in a range from 24 to 26 and could be traced as layers extending along and outward from the continental shelf. These layers generally followed the local stratification and were associated with the upper part of the pycnocline. Advection was undoubtedly of importance in determining the extent and distribution of these methane maxima layers, but in situ production appears to have supported them. Some vertical profiles revealed associations between methane, ATP, and suspended matter maxima. It is postulated that methane forms in situ in reducing microenvironments associated with suspended particulates, which are advected from the shelf or which have accumulated in the upper pycnocline due to increase in buoyancy forces.
KEYWORDS: Texas; Louisiana; chemistry; hydrocarbon; methane;

00174
Brooks, J.M.; Sackett, W.M. 1973. Sources, sinks, and concentrations of light hydrocarbons in the Gulf of Mexico. J. Geophys. Res. 78(24):5248-5258.

ABSTRACT: A survey of the concentrations of light hydrocarbons in the Gulf of Mexico has been made aboard the R.V. Alaminos of Texas A&M University. Coastal waters of the Gulf of Mexico are not in equilibrium with the atmosphere insofar as low molecular weight hydrocarbons are concerned, even though methane in most of the open Gulf of Mexico is in fairly close equilibrium with the atmosphere. The coastal waters of the Gulf act both as a source and as a sink for atmospheric methane. The important man-derived sources of methane in the Gulf are ports with their associated shipping and industrial activity, offshore petroleum drilling and production operations, and open ocean shipping activity. High light hydrocarbon concentrations have been found in the vicinity of a tanker discharging 'clean ballast water.' The important natural sources include seepage from oil and gas reservoirs and anaerobic production of methane. The main sink for atmospheric methane in the Gulf of Mexico is the Yucatan area, where there is major upwelling of deep water with low hydrocarbon concentrations.
KEYWORDS: Gulf of Mexico; coastal waters; chemistry; oil and gas; hydrocarbon; methane;

00175
Brooks, J.M.; Wiesenburg, D.A.; Burke, R.A., Jr.; Kennicutt, M.C. II. 1981. Gaseous and volatile hydrocarbon inputs from a subsurface oil spill in the Gulf of Mexico. Environ. Sci. Technol. 15:951-959.

ABSTRACT: Low-molecular-weight (C_1-C_4) and volatile liquid hydrocarbons (C_5-C_{14}) were determined in water and oil samples around the Ixtoc-I well blowout on the Campeche Shelf. Volatile liquid hydrocarbon (VLH) concentrations as high as 400 μg/L were measured in the surface seawater near the wellhead. However, rapid dilution down plume reduced VLH levels to 63 and 4 μg/L at 6 and 12 mi, respectively, from the wellhead. VLHs away from the immediate vicinity of the blowout were dominated by light aromatic compounds (benzene -->o-xylene). Most VLHs in the water column originated at the wellhead and not from dissolution of floating oil/mousse which resulted from the blowout. VLHs and low-molecular-weight hydrocarbons (LMWHs) showed similar concentration patterns. Concentrations of both VLHs and LMWHs in the water decreased by 1, 1.5, 2, and 3 orders of magnitude at stations 6, 12, 18, and 24 mi, respectively, downstream from the blowout site. The decrease was due to both dilution and hydrocarbon venting to the atmosphere. VLHs were also rapidly lost from the oil/mousse floating on the sea surface. This loss was principally a result of evaporation and occurred within a few miles downstream of the blowout.
KEYWORDS: Mexico; continental shelf; chemistry; oil and gas; hydrocarbon; oil spill; environmental impact; Ixtoc;

00176
Brooks, J.M.; Wiesenburg, D.A.; Schwab, C.R.; Estes, E.L.; Shokes, R.F. 1981. Surficial sediments and suspended particulate matter, p. 69-115. In B.S. Middleditch [ed.], Environmental effects of offshore oil production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; geology; chemistry; sediment; environmental impact; Buccaneer Field;

00177
Browder, J.A. 1983. Vessel activity relative to the Texas closure, 1981 and 1982. Texas closure of the Gulf of Mexico shrimp fishery. National Marine Fisheries Service, Miami, FL. Southeast Fisheries Center. Rep. No. NOAA-TM-NMFS-SEFC-118. 68 p. NTIS order No. PB84-127406.

ABSTRACT: A quantitative description of shrimp vessel activity in the Gulf of Mexico relative to the Texas closure in 1981 and 1982 has been prepared to address socioeconomic questions that have been raised about the closure.
KEYWORDS: Texas; Louisiana; Mississippi; Alabama; coastal waters; continental shelf; socioeconomics; fisheries; shrimp;

00178
Brower, W.A.; Meserve, J.M.; Quayle, R.G. 1972. Environmental guide for the U.S. Gulf Coast. NOAA Environmental Data Service, National Climate Center, Asheville, NC. 177 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; Alabama; Mississippi; coastal waters; estuary; physical; meteorology;

00179
Brown, A.R.; Wright, R.M.; Abriel, W.L.; Burkart, K.D. 1984. Interactive seismic mapping of net producible gas sands in the Gulf of Mexico. Geophysics 49(5):653. (Summary only.).

ABSTRACT: In the Garden Banks area offshore Louisiana, several gas sands have been drilled and found productive. However, the sands are laterally variable in thickness and effectiveness. An improved understanding of the spatial distribution of net producible gas sand is highly desirable for reservoir management. 3-D seismic data show strong bright spots associated with the gas sands. The bright reflections from the top and base of each sand were tracked automatically on an interactive interpretation system. This yielded time structure maps and hence isochron maps for each gross sand interval.
KEYWORDS: Louisiana; continental slope; geology; oil and gas; sediment;

00180
Brown, G.L.; Ghosh, D.N.; Gurshey, R.; Hancuff, P. 1980. A research report of a telephone interview of recreational shrimpers along the Gulf coast for 1979. Gulf States Marine Fisheries Commission, Gulf Coast Research Laboratory, Ocean Springs, MS. 13 p.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; coastal waters; fisheries; recreation; socioeconomics; fishery statistics; shrimp;

00181

Brown, G.L.; Gursky, R.; Hitlin, R.A.; Hempstead, J.D.; Hancuff, P. 1980. A survey of recreational shrimpers in the bay and sound systems of the Gulf Coast. Gulf States Marine Fisheries Commission, Gulf Coast Research Laboratory, Ocean Springs, MS. 176 p.

ABSTRACT: A total of 3,866 interviews were conducted in the survey of recreational shrimpers along the Gulf Coast. In Phase I, which covered the brown shrimp season, 925 interviews were conducted. In Phase II, which covered the white shrimp season, 2,941 interviews were conducted. These data were collected and analyzed to describe the effort and catch of recreational shrimpers. Various tables have been developed to present frequencies, means, and/or standard deviations on many variables. The major variables of interest include pounds of shrimp per shrimping trip by species, pounds of shrimp per hour by species, and count per pound of shrimp by species for each state. In some cases, large sample sizes have allowed breakdowns of these data beyond the state level. For example, appendices provide catch data by site of intercept, by date of interview, and by location of catch for the state of Louisiana in Phase II of the survey,
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; coastal waters; fisheries; recreation; shrimp; socioeconomics; fishery statistics;

00182

Brown, L.R. 1980. Fate and effect of oil in the aquatic environment -- Gulf coast region. U.S. Environmental Protection Agency, Washington, DC. EPA-600/3-80-058a. 102 p.

ABSTRACT: The purpose of this research was to determine the fate and effect of crude oil in the aquatic environment of the coastal Gulf of Mexico. The project was multi-disciplinary and multi-institutional in scope and involved both laboratory and field sized pilot-plant ecosystem studies. Emphasis was placed on the long-term, low-level chronic effects of oil pollution on the ecosystem.
KEYWORDS: Gulf of Mexico; oil and gas; hydrocarbon; biology; chemistry; environmental impact; oil spill; shrimp; oyster; plankton; fish;

00183

Brown, M.L.; Minchew, C.D. 1980. Geographic distribution of petroleum hydrocarbons in surficial bottom sediments of the Gulf of Mexico, p. 181-205. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; sediment; hydrocarbon;

00184

Bruce, A.C.; Davis, J.C.; Brugger, R.D.; Browder, J.A. 1978. Croaker workshop report and socioeconomic profile. National Marine Fisheries Service, Southeast Fisheries Center, Miami, FL. Sea Grant-SR-16.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; fisheries; socioeconomics; fish; croaker;

00185

Brunett, L; Wills, D. 1981. A guide to wildlife management areas. Louisiana Department of Wildlife and Fisheries, New Orleans, LA. 92 p.

ABSTRACT: This is an overview and descriptive guide to the 35 Louisiana Wildlife management areas. The state managed areas consist of 981,000 acres, of which 497,000 acres are owned by the Department of Wildlife and Fisheries. Wildlife management areas represent every habitat type found in the state, including marsh, bottomland hardwoods, cypress tupelo swamps, mixed pine hardwoods, cut over pine lands, pure pines, and backwater areas.
KEYWORDS: Louisiana; coastal waters; marsh; recreation; socioeconomics; wildlife; biology;

00186

Bryant,W. 1975. Soil borings and test results at four locations in South Pass area. Texas A&M University, College Station, TX.

ABSTRACT: A report is available presenting results of field and laboratory soil investigations and scientific analysis at four offshore locations in the South Pass area off the Louisiana coast.
KEYWORDS: Louisiana; coastal waters; geology; sediment; South Pass;

00187
Buckley, J. 1984. Habitat suitability index models: larval and juvenile red drum. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/10.74. 15 p.

ABSTRACT: A review and synthesis of existing information were used to develop a habitat model for larval and juvenile red drum. The model is scaled to produce an index of habitat suitability between 0 (unsuitable habitat) and 1 (optimally suitable habitat) for estuarine areas along the Gulf of Mexico and Atlantic coasts. Habitat suitability indices are designed for use with habitat evaluation procedures developed by the U.S. Fish and Wildlife Service. Guidelines for model application and techniques for estimating model variables are provided.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; biology; fish; drum; model;

00188
Bullis, H.R. 1956. Preliminary results of deep-water exploration for shrimp in the Gulf of Mexico by the M\V OREGON (1950-1956). Comm. Fish. Rev. 18(12):1-17.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; shrimp; fisheries;

00189
Bullis, H.R., Jr.; Arnold, E.L., Jr. 1956. Capture of an immature oar-fish, Regalecus glesne, in the Gulf of Mexico. Copeia 1956(3):191.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fish; taxonomy;

00190
Bunpapong, M.; Reid, R.O.; Whitaker, R.E. 1985. An investigation of hurricane-induced forerunner surge in the Gulf of Mexico. U.S. Army Corps of Engineers, Washington, DC. Tech. Rep. CERC-85-5. 217 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; continental shelf; model; meteorology; hurricane;

00191
Burchfield, H.P.; Wheeler, R.J.; Subra, W. 1979. Nutrient concentrations in Timbalier Bay and the Louisiana oil patch, p. 223-233. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; chemistry; oil and gas; nutrient; environmental impact; Offshore Ecology Investigation;

00192
Bureau of Land Management. 1977. Draft environmental impact statement. Proposed 1978 outer continental shelf oil and gas lease sale. Bureau of Land Management, Gulf of Mexico OCS Regional Office, New Orleans, LA. OCS No. 65. 2 vol.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; biology; chemistry; geology; physical; socioeconomics; oil and gas; environmental impact;

00193
Bureau of Land Management. 1979. Environmental Impact Statement for the proposed 1979 outer continental shelf oil and gas lease sale 58 -- western and central Gulf of Mexico. Bureau of Land Management, Washington, DC. Two volumes.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; oil and gas; biology; chemistry; geology; physical; socioeconomics; fisheries; environmental impact;

00194
Bureau of Land Management. 1980. Final environmental impact statement. Proposed outer continental shelf oil and gas lease sales A62 and 62. Bureau of Land Management, Gulf of Mexico OCS Regional Office, New Orleans, LA. 116 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; biology; chemistry; geology; oil and gas; physical; socioeconomics; environmental impact;

00195
Bureau of Land Management. 1981. Regional pipeline environmental assessment record: an aggregate analysis of major areas of pipeline concern and impact on the outer continental shelf (Gulf of Mexico). Bureau of Land Management, New Orleans, LA. Rep. No. BLM-YM-P/T-81-012-1792. 298 p. NTIS order No. PB82-131301.

ABSTRACT: Oil and gas pipeline activities on the Gulf of Mexico Outer Continental Shelf (OCS) affect a wide range of living and nonliving environmental variables (i.e., water, biologically sensitive areas, and food-web relations). These industrial activities have been increasing steadily over the past 20 years. Much of the information included herein pertains to a description of the existing environment for offshore Louisiana and Texas and an analysis of potential pipeline proposals and alternatives. The document is not as complete as an environmental impact statement (EIS) but it is sufficient in scope to consider the analysis of impacts of the majority of pipeline activities occurring in the northern and western Gulf of Mexico OCS. This report will be useful in evaluating pipeline impacts on the regional environment in the future. Rather than treating each pipeline application extensively, the information included herein will be referenced, thereby reducing the paperwork involved in environmental analysis.
KEYWORDS: Louisiana; Texas; continental shelf; oil and gas; biology; geology; chemistry; physical; pipeline; environmental impact;

00196
Burford, R.L.; Dugger, J.W. 1969. The shell dredging industry in Louisiana. Louisiana Wildlife and Fisheries Commission, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; dredging; socioeconomics;

00197
Burk and Associates, Inc. 1975. Louisiana coastal resources inventory. Vol. 1, Geographic areas of particular concern. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: An inventory by parish (Questionnaires were sent to each parish) including recreational facilities, historical, cultural, and tourist features, archaeological sites, and development areas of particular concern.
KEYWORDS: Louisiana; estuary; beach; marsh; archaeology; biology; socioeconomics; recreation; ecology;

00198
Burk and Associates, Inc. 1975. Louisiana coastal resources inventory. Vol. 2, Impact assessment review. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: An inventory of federal, state, regional, and metropolitan agencies and their plans and projects which affect the coastal zone.
KEYWORDS: Louisiana; estuary; beach; marsh; archaeology; biology; socioeconomics; recreation; environmental impact; ecology;

00199
Burk and Associates, Inc. 1975. Louisiana coastal resources inventory. Vol. 3, Significant coastal plans and projects. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: An analysis of completed, under construction, and proposed projects which may have a significant impact on the coastal area.
KEYWORDS: Louisiana; estuary; beach; marsh; archaeology; biology; socioeconomics; recreation; environmental impact; ecology;

00200
Burk and Associates, Inc. 1976. Unique ecological features of the Louisiana coast. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Describes 23 categories of unique ecological features (zoological, botanical, and geological) of the Louisiana coast.
KEYWORDS: Louisiana; estuary; beach; marsh; biology; geology; ecology;

00201
Burk and Associates, Inc. 1977. Potential preservation and restoration areas in the Louisiana wetlands. Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: This report considers fifty potential natural areas representing a cross-section of all major physiographic types in coastal Louisiana which were evaluated as natural areas. The evaluations are addressed in this report under three headings: (1) Standards and criteria for preservation and restoration areas: (2) Evaluation of potential preservation areas; and (3) Priority ranking of preservation areas. Two maps depicting potential restoration areas and potential preservation areas are included.
KEYWORDS: Louisiana; estuary; archaeology; biology; marsh; ecology; socioeconomics;

00202
Burk and Associates, Inc. 1977. Recreational potential along the Louisiana coast: Proposed new and expanded sites for recreation. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Lists, arranged by parish, containing recommendations for both expansion of existing facilities and new potential sites in areas where facilities are now non-existent along the Louisiana coast.
KEYWORDS: Louisiana; estuary; archaeology; biology; marsh; ecology; socioeconomics;

00203
Burk and Associates, Inc. 1978. Louisiana shorefront access plan. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: This document provides a means whereby the state can improve coastal shorefront recreational opportunities by presenting a list of coastal shorefront access locations appropriate for acquisition or expansion as public recreation or preservation areas. This report includes facility recommendations, cost estimates for implementing the proposed projects, and possible sources of funding, as well as management guidelines for each of the areas and programs described. It includes aesthetic, environmental, historical, cultural, recreational, and ecological considerations.
KEYWORDS: Louisiana; estuary; beach; marsh; archaeology; biology; socioeconomics; recreation; environmental impact; ecology;

00204
Buroker, N.E. 1983. Population genetics of the American oyster Crassostrea virginica along the Atlantic Coast and the Gulf of Mexico. Mar. Biol. 75 (1):99-112.

ABSTRACT: An examination by protein-gel electrophoresis of 19 different geographical populations of the American oyster C. virginica (Gmelin) was conducted along the Atlantic coast and the Gulf of Mexico. Estimates were made of levels of genetic variation and similarity among the populations based on 32 structural loci. The percentage of loci polymorphic ranged from 46.9 to 65.6% along the Atlantic coast while the estimate ranged from 54.8% to 68.8% on the Gulf of Mexico. The percentage of loci heterozygous ranged from 18.6 to 23.6% along the Atlantic coast and from 20.0 to 25.4% in the Gulf of Mexico. The genetic similarities between all contiguous populations from Cape Cod, Massachusetts to Corpus Christi, Texas were estimated as 99%, while the same estimate between Corpus Christi and Brownsville, Texas was computed as 93%, indicating a major transition in genetic structure for the Brownsville population of the Laguna Madre.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; estuary; coastal waters; biology; oyster; genetics;

00205
Bushnell, V.C. [ed.]. 1972. Chemistry, primary productivity, and benthic algae of the Gulf of Mexico. Serial Atlas of the Marine Environment, Folio 22. Am. Geogr. Soc., New York. 29 p.

ABSTRACT: Topics include organic and inorganic chemistry, distribution of organic carbon, primary productivity and standing crop of phytoplankton, diatom and dinoflagellate distribution, and benthic algae and seagrasses.
KEYWORDS: Gulf of Mexico; biology; chemistry;

00206
Butler, P.A. 1959. Annotated bibliography of unpublished estuarine research in the Gulf of Mexico, 1925-1959. Supplement I (1960). Gulf States Marine Fisheries Commission, New Orleans, LA. 51 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; bibliography; estuary; physical; geology; fisheries; biology; socioeconomics;

00207
Byrne, P.; et al. 1976. Barataria Basin: Hydrologic and climatologic processes. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: Gives hydrologic aspects of the basin, including data on water level changes, meteorological driving forces, tides, salinity, and water temperature. Also, an analysis of environmental responses to weather types.
KEYWORDS: Louisiana; estuary; marsh; Barataria Bay; physical; meteorology; current; tide; salinity; temperature;

00208
Caffrey, J.M.; Day, J.W., Jr. 1986. Control of the variability of nutrients and suspended sediments in a Gulf coast estuary by climatic forcing and spring discharge of the Atchafalaya river. Estuaries 9 (4A):295-300.

ABSTRACT: Water column nutrients (nitrate, ammonium, soluble reactive phosphate, total Kjeldahl nitrogen, and total phosphorus) and suspended sediments (SS) were measured during one 44-h and two 28-h periods in March 1982 at two stations in Fourleague Bay, Louisiana, which is located at the mouth of the Atchafalaya River, a distributary of the Mississippi River. River water (a source of nitrate, total Kjeldahl nitrogen, total phosphorus, and suspended sediments to Fourleague Bay) flows into the upper reaches of the bay during high tide and frontal overrunning conditions with northerly and westerly winds. During one sampling period, decreasing wind speed and the rising tide resulted in Atchafalaya River water inundating the bay and nitrate concentrations in the upper bay increasing from 30-70 .mu.M to 90-118 .mu.M. Significant variations in nutrients associated with the movement of water masses from the river, marshes, and Gulf of Mexico occurred over several different time scales. Tidal transport occurred over 25-h periods, while frontal passages occurred at 3-d to 5-d intervals. Variability in nutrient and suspended sediment concentrations over these relatively short time scales can be as great as seasonal variability in the bay.
KEYWORDS: Louisiana; Atchafalaya River; estuary; chemistry; nutrient; sediment;

00209
Cahoon, D.; Cowan, J., Jr. 1987. Spray disposal of dredged material in Louisiana wetlands. Louisiana Sea Grant Pub. No. LSU-T-87-005. 30 p.

ABSTRACT: A review and evaluation of existing information about spray technology as used for the disposal of spoil in dredging new access canals through marsh in the Louisiana coastal zone. Report is directed at industry and regulatory personnel, as well as wetland scientists.
KEYWORDS: Louisiana; marsh; dredging; environmental impact;

00210
Caillouet, C.W. 1965. Abundance of postlarval shrimp in the Vermilion Bay area of Louisiana. U.S. Fish and Wildlife Service, Circ. 230. 46 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Vermilion Bay; biology; fisheries; shrimp;

00211
Caillouet, C.W. 1966. Studies of postlarval shrimp in Vermilion Bay, Louisiana. U.S. Fish and Wildlife Service, Circ. 246. 28 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Vermilion Bay; biology; fisheries; shrimp;

00212
Caillouet, C.W. 1967. Population dynamics of white shrimp and brown shrimp in Vermilion Bay, Louisiana. U.S. Fish and Wildlife Service, Circ. 268. 19 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Vermilion Bay; biology; fisheries; shrimp;

00213
Caillouet, C.W. 1968. Studies of postlarval shrimp in Vermilion Bay. U.S. Fish and Wildlife Service, Circ. 295. 18 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Vermilion Bay; biology; fisheries; shrimp;

00214
Caillouet, C.W.; Baxter, K.N. 1973. Gulf of Mexico shrimp resource research. Mar. Fish. Rev. 35:21-24

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; shrimp; fishery management;

00215
Caillouet, C.W., Jr.; Fontaine, C.T.; Williams, T.D.; Manzella, S.A.; Indelicato, K.L.W.; Duronslet, M.J.; Revera, D.B.; et al. 1987. The Kemp's ridley sea turtle head start research project: an annual report for fiscal year 1986. NOAA Tech. Mem. NMFS-SEFC-192. 28 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; turtle; endangered species;

00216
Caillouet, C.W.; Fontenot, B.J., Jr.; Perret, W.S.; Dugas, R.J.; Hebert, H.F. 1971. Catches of postlarval white shrimp, Penaeus setiferus (Linn.), and brown shrimp, P. aztecus Ives, and temperature and salinity observations in Vermilion Bay, Louisiana, March 1963 to April 1967. National Marine Fisheries Service Data Rep. No. 64. 39 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Vermilion Bay; biology; fisheries; shrimp;

00217
Caillouet, C.W.; Jackson, W.B.; Gitschlag, G.R.; Wilkens, E.P.; Faw, G.M. 1981. Review of the environmental assessment of the Buccaneer gas and oil field in the northwestern Gulf of Mexico, p. 101-124. In Proceedings, 33rd Annual Gulf Carib. Fish. Instit. San Jose, Costa Rica.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; chemistry; fisheries; oil and gas; environmental impact; Buccaneer Field;

00218
Caillouet, C.W.; Koi, D.B. 1981. Trend in ex-vessel value and size composition of reported in May-August catches of brown shrimp and white shrimp from the Texas, Louisiana, Mississippi and Alabama coasts, 1960-1978. Gulf Res. Rep. 7(1):59-70.

ABSTRACT: Exponential models were used to characterize (1) ex-vessel value (in dollars) per shrimp by size category (count; i.e., number of shrimp per pound, heads off); (2) size composition (expressed as cumulative weight of the catch in pounds, heads off, by size category); and (3) ex-vessel value, composition (expressed as cumulative ex-vessel value, in dollars, of the catch by size category) for reported May-August catches (inshore and offshore combined) of brown shrimp (Penaeus aztecus) and white shrimp (P. setiferus) from the Texas, Louisiana, Mississippi, and Alabama coasts (statistical areas 10-21) from 1960 to 1978. Exponents of the models were used as indices to investigate trends in ex-vessel value per shrimp, size composition, and ex-vessel value composition of the May-August catches during this period. This approach to analysis of catch statistics can be used to monitor these fisheries, and the results can be compared with changes that may be brought about by the closure of the fishery conservation zone off Texas, as proposed by 1981 by the Gulf of Mexico Fishery Management Council, in the fishery management plan for the shrimp fishery of the Gulf of Mexico.
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; coastal waters; biology; socioeconomics; fisheries; fishery statistics; fishery management; shrimp;

00219
Caillouet, C.W.; Koi, D.B. 1982. Cumulative monthly weight and ex-vessel value, and monthly price per pound, for brown shrimp catches from the northern Gulf of Mexico, 1960-1981. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-96. 79 p. NTIS order No. PB84-198035.

ABSTRACT: The reported monthly catches of brown shrimp, Penaeus aztecus Ives, reflect recurring life cycle events and seasonal removals by inshore (landward of barrier islands) and offshore (seaward of barrier islands) fisheries. The seasonal timing of peaks and troughs in the catches may vary from year to year, depending upon climatic influences, recruitment, survival, and growth of shrimp, and market conditions, as well as changes in the timing and duration of open fishing seasons set by shrimp management agencies. Monthly summations of catches (inshore and offshore combined) of brown shrimp and their ex-vessel value were compiled from data files available from the TIMS. Catches used herein represent those portions of the actual catches that were landed by commercial fishermen at domestic ports and reported by the NMFS or its predecessor, the Bureau of Commercial Fisheries, U.S. Fish and Wildlife Service.
KEYWORDS: Alabama; Louisiana; Mississippi; Florida; coastal waters; socioeconomics; fisheries; fishery statistics; shrimp;

00220
Caillouet, C.W.; Koi, D.B. 1983. Size composition of monthly catches of brown shrimp from the Texas Coast, Mississippi River to Texas, and Pensacola to the Mississippi River, 1960-1981. National Marine Fisheries Service, Biological Laboratory, Galveston, TX. NOAA-TM-NMFS-SEFC-116. 78 p.

ABSTRACT: The report summarizes information concerning the biology and population dynamics of brown shrimp in the context of management of the fishery for this species in the Gulf of Mexico. The size composition of the reported monthly catches of brown shrimp, Penaeus aztecus, reflects the combined effects of recruitment, growth and mortality, including losses due to natural causes and those caused by fishing. Annually recurring recruitment has an obvious effect of reducing the size of brown shrimp in the monthly catches, but the time-phasing of open seasons and the intensity of fishing can also alter the size composition patterns.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; coastal waters; biology; fisheries; fishery statistics; shrimp; ecology;

00221
Caillouet, C.W.; Patella, F.J.; Jackson, W.B. 1980. Trends toward decreasing size of brown shrimp, Penaeus aztecus, and white shrimp, Penaeus setiferus, in reported annual catches from Texas and Louisiana. Fish. Bull. 77(4):985-989.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; estuary; coastal waters; fisheries; shrimp; fishery statistics;

00222
Calder, J.A.; Parker, P.L. 1968. Stable carbon isotope ratios as indices of petrochemical pollution of aquatic systems. Environ. Sci. Tech. 2:535-539.

ABSTRACT: Carbon 13/carbon 12 ratio data were collected from 1967 through 1973 on samples of water, bio-material and sediment from areas of the west Florida shelf to the Mississippi Delta and Texas. Approximately 200 observations were made during that time.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; chemistry; stable isotope; oil and gas; sediment;

00223
Caldwell, D.; Siebenaler, J.B.; Inglis, A. 1960. Sperm and pigmy sperm whales stranded in the Gulf of Mexico. J. Mammalogy 41:136-138.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; marine mammal; endangered species;

00224

Campbell, K.J.; Ploessel, M.R. 1986. Large submarine landslides, p. 45. In Abstracts and program: 29th annual meeting of the Association of Engineering Geologists, San Francisco, CA, 5-10 Oct 1986. (Abstract only.).

ABSTRACT: Many of the world's largest landslides are offshore and typically range from tens to hundreds of square miles in extent. Most large submarine slides are on the continental slope, but some are found in shallow water on the continental shelf. Knowledge of large submarine landslides, their failure mechanism, and methods of assessing the potential for seafloor instability are becoming increasingly important as petroleum production facilities move onto the continental slope. Several production structures are in operation or in final design for sites on the continental slope in more than 1000 ft of water exploratory drilling for hydrocarbons has taken place in more than 5000 ft. of water. This paper describes several submarine landslides and the techniques used to assess their potential effects on petroleum production structures. One of these slides, the Bay City slide, is in the northern Gulf of Mexico about 100 mi southeast of Galveston, Texas.
KEYWORDS: Texas; Louisiana; continental shelf; continental slope; geology; submarine landslide; hazard;

00225

Capurro, L.R.A.; Reid, J.L. [ed.]. 1972. Contributions on the physical oceanography of the Gulf of Mexico. Gulf Publ. Co., Houston, TX. 288 p.

ABSTRACT: This book contains a group of related papers directed toward a better understanding of the physical oceanography of the Gulf. Topics include general circulation patterns; the Loop current; numerical modeling; effects of hurricanes on circulation; and tides.
KEYWORDS: Gulf of Mexico; physical; current;

00226

Carnes, M. 1983. Tidal currents measured near the Flower Garden Banks on the Texas-Louisiana outer continental shelf. EOS Trans. Am. Geophys. Union. 64 (45):727. (Summary only.).

ABSTRACT: Amplitudes and phases of currents and temperature fluctuations at tidal frequencies have been computed by harmonic analysis from a large number of time series records measured near the East and West Flower Garden Banks. The large range in the computed amplitudes and phases for each tidal constituent (M2, S2, and K1) indicate the presence of an appreciable baroclinic component to the tidal currents. Separation of the barotropic and baroclinic tides was attempted by two methods which rely on the specific properties of the baroclinic tides at the study site. Examination of internal tide characteristics computed for different seasons at the N2 and K1 frequencies reveal several important properties. The internal K1 tide is generated very near the two banks at the edge of the continental shelf and may, therefore, be nearly phase-locked with the barotropic tidal current. Also, the phase difference between horizontal currents and the temperature measured at mid-depth in the water column should remain relatively constant.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; reef; physical; current; tide;

00227

Carothers, P.E.; Grant, W.E. 1987. Fishery management implications of recruitment seasonality: simulation of the Texas fishery for the brown shrimp, Penaeus aztecus. Ecol. Modelling 36:239-268.

ABSTRACT: The relationship between recruitment seasonality and ordination of alternative management policies for the Texas brown shrimp (Penaeus aztecus) fishery is explored through utilization of a general stochastic simulation model developed for annual crop marine fisheries. The model represents harvest dynamics within the fishery through series of finite difference equations representing recruitment, growth, migration, and mortality of brown shrimp, and fishing effort. The model is parameterized to reflect two alternative representations of brown shrimp recruitment dynamics, and the behavior of each model version is explored under four management policy options. The alternative recruitment representations differ in temporal pattern of postlarval brown shrimp immigration into coastal estuaries, and the management policy options reflect variations in seasonal closures and minimum size restrictions for the fishery. Analysis of model outputs identified a statistically significant interaction between recruitment representation and the performance of the alternative management policies based upon predicted harvests within the fishery. This interaction indicates the failure of the alternative recruitment model versions to produce a consistent predicted harvest response over all management policy options. Under an average representation of postlarval recruitment pattern, no significant differences in management options performance were detected, while two of four management options produced significantly lower harvests under a seasonally variable recruitment pattern.
KEYWORDS: Texas; estuary; coastal waters; fisheries; biology; shrimp; model;

00228

Carr, A.F. 1963. Panspecific reproductive convergence in Lepidochelys kempi. Ergebnisse der Biologie 26:298-303.

ABSTRACT: None
KEYWORDS: United States; biology; coastal waters; ecology; endangered species; turtle;

00229
Carsey, J.B. 1950. Geology of Gulf coastal area and continental shelf. Am. Assoc. Petrol. Geol. Bull. 34:361-385.

ABSTRACT: A coastal plain varying in width to more than 100 miles borders the Gulf of Mexico in the southern part of the United States. This plain is tilted about 5 feet per mile toward the Gulf. This almost imperceptible slope extends out into the open water where the gradient is 8-12 feet per mile on top of the continental shelf, but steepens to 400-600 feet per mile off the edge of the shelf. This change in slope occurs at the 70-fathom line. The shelf is about 50 miles wide south of Mobile Bay and 70 miles wide at the mouth of the Rio Grande, but reaches maximum width of 140-150 miles between these points south of the Sabine River. Several hundred salt domes have been discovered on the coastal plain, and domes have already been located by geophysical work in the open water. More than 140 dome-like topographic prominences, with relief varying from 12 feet to 600 feet, are present along the edge of the shelf. The Mississippi River is building its delta across the shelf at the rate of one mile in 16 to 17 years and is now within 12-15 miles of the edge of the shelf. The natural levee along the Mississippi serves as a ramp from which oil operations have taken place, and ten or more domes are now producing from this ramp. These domes are well out on the shelf; thus, there is actually nothing new about oil production from the shelf area.
KEYWORDS: Texas; Louisiana; Alabama; Mississippi; continental shelf; continental slope; geology;

00230
Carter, M.T. 1983. Probability of hurricane/tropical storm conditions: a users guide for local decision makers. National Climatic Data Center, Asheville, NC. 25 p.

ABSTRACT: In a growing number of communities along the Atlantic and Gulf coasts, local decision makers must initiate protective actions before the National Hurricane Center can confidently issue a Hurricane Warning for their community. In an attempt to provide these decision makers with useful long range forecasts of a hurricane's movement, the National Hurricane Center will issue probabilities that the hurricane will affect any of 44 communities form Brownsville, Texas, to Eastport, Maine. This manual was written to acquaint local decision makers with some of the characteristics of these probabilities and outline some of the ways that they may be used to guide decision making when facing a hurricane threat. While it is hoped that local decision makers find this manual useful in effectively utilizing this new forecast information, it should be remembered that National Weather Service field personnel are available, as always, to answer any questions and to provide specific interpretations of both the probabilities and the forecast tracks that are issued for any given storm.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; coastal waters; physical; hurricane; meteorology;

00231
Caruthers, J.W. 1972. Water masses at intermediate depth, p. 53-64. In Capurro, L.R.A. and Reid, J.L. [ed.], Contributions on the physical oceanography of the Gulf of Mexico. Gulf Publishing Co., Houston, TX. 288 p.

ABSTRACT: None
KEYWORDS: physical; Gulf of Mexico; temperature; salinity; deep sea;

00232
Casey, R.; Amos, A.; Anderson, J.; Koehler, R.; Schwarzer, R.; Sloan, J. 1982. A preliminary report on the microplankton and microbenthon responses to the 1979 Gulf of Mexico oil spills (Ixtoc I and Burmah Agate), with comments on avenues of oil to the sediments and the fate of oil in the water column and on the bottom, p. 273. In Proceedings, 14th Annual Offshore Technology Conference, Houston, TX.

ABSTRACT: None
KEYWORDS: Mexico; Texas; oil and gas; oil spill; environmental impact; benthos; Ixtoc;

00233
Casey, R.E. 1977. Shelled microzooplankton, general microzooplankton, and shelled microzoobenthon of the south Texas outer continental shelf, p. 5-1 to 5-141. In Environmental studies, South Texas outer continental shelf, biology and chemistry. Vol. I. Report to the Bureau of Land Management, New Orleans, LA. Contract No. AA550-CT6-17.

ABSTRACT: Nansen net, Niskin bottle, and sub-cores from bottom grab samples were collected in the BLM-STOCS study area seasonally and monthly during 1976. Shelled microzooplankton and general microplankton were studied from Nansen net and Niskin bottle samples; living benthonic foraminiferans were studied from grab samples; and dead benthonic and planktonic foraminiferans were studied from down-core samples.
KEYWORDS: Texas; continental shelf; biology; plankton; benthos; ecology; taxonomy; STOCS;

00234

Cech, J.J., Jr.; Wohlschlag, D.E. 1982. Seasonal patterns of respiration gill ventilation and hematological characteristics in the striped mullet, Mugil cephalus. Bull. Mar. Sci. 32 (1):130-138.

ABSTRACT: The striped mullet, M. cephalus, endures pronounced diurnal and seasonal temperature changes in the shallow bay system of the Texas coast [USA]. The mullet responds to its temperature-induced changes in metabolic O2 demand with a pattern of respiratory, ventilatory and hematological adjustments. These variables were measured at 14.5.degree. and 28.5.degree. C during each season to separate seasonal from short-term responses. In van Dam-type respirometers, O2 consumption rates remained at essentially constant levels at each temperature through the year (.hivin.x = 42.84 ml O2/kg per h at 14.5.degree. C and 141.83 ml O2/kg per h at 28.5.degree. C). Gill ventilatory flows, frequencies and stroke volumes also remained seasonally constant at each temperature. Seasonal differences at each temperature regime were most evident in the blood characteristics of hemoglobin concentration and hematocrit. While both juvenile and adult fish display increases in response to the energy demands imposed by warmed environments, seasonal peaks of hemoglobin and hematocrit (autumn Hb = 8.24 g%, Hc = 32%) occurred as waters cooled when the adults migrated to the Gulf of Mexico for spawning. This pattern should enhance the ecological fitness of a spawning adult striped mullet by increasing its capacity for aerobic swimming performance during the migration, thereby decreasing mortality by predation.
KEYWORDS: Texas; estuary; biology; fish; mullet; physiology;

00235

Centaur Associates, Inc. 1981. Assessment of space and use conflicts between the fishing and oil industries. Report to the Bureau of Land Management, New York, NY. Contract No. AA551-CT9-26. 5 vol.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; Pacific Ocean; continental shelf; fisheries; oil and gas; socioeconomics;

00236

Centaur Associates, Inc. 1986. Indicators of the direct economic impacts due to oil and gas development in the Gulf of Mexico. Results of Year 1. Report to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. 2 vol. NTIS order Nos. PB86-246188 and PB86-246196.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; socioeconomics; oil and gas; environmental impact;

00237

Centaur Associates, Inc. and Center for Environmental Education. 1986. Issue report and work plan for the development of a marine debris education program for the northwestern Atlantic and Gulf of Mexico. Report to the U.S. Department of Commerce, National Marine Fisheries Service. 62 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; beach; coastal waters; continental shelf; debris;

00238

Center for Natural Areas. 1979. Annotated bibliography of coastal zone management work products--a compilation of state, territory, and federal work products produced via funding from the Coastal Zone Management Act of 1972, as amended. National Oceanic and Atmospheric Administration, Office of Coastal Zone Management, Washington DC. 391 p.

ABSTRACT: The Coastal Zone Management Act (CZMA) of 1972, amended in 1976, provided grants to States and Territories to develop and implement coastal management plans. During their activities, coastal programs have produced a total of over 1400 work products on all aspects of the planning process; the Office of Coastal Zone Management (OCZM) in the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) has published numerous other documents. These work products, funded through the CZMA, represent a substantial amount of invaluable information and experience of use to all professionals and students of the coastal region. This annotated bibliography represents a second edition compilation of the work products published prior to September, 1979. Included are all annotations from the first bibliography prepared by David W. Laist in 1976. This new edition also has an index by key words to help the user locate information in any State or Territory, or by subject. This bibliography was completed following an exhaustive search of the OCZM library of work products in the Coastal Zone Information Center (CZIC) and the State/Territory files. Annotations were prepared directly from the work products or from direct input from the respective State or Territory Program Manager. In an effort to verify each annotation and to ensure a thorough inclusion of all work products, a copy of the draft bibliography was forwarded to each State or Territory Program Manager for their review. Although not all Managers responded, this bibliography represents a best effort to annotate all products. Except for special cases, this bibliography includes all coastal program products funded in part or whole by funds from the Coastal Zone Management Act. Among the exceptions are some draft reports, films, slide shows, grant applications and newsletters. It is inevitable that some work products have been overlooked or discovered too late to be included. Such omissions are unintentional. In most cases, those documents should be filed at the OCZM Coastal Zone Information Center (CZIC).
KEYWORDS: United States; marsh; estuary; barrier island; beach; coastal waters; bibliography;

00239

Center for Wetland Resources, Louisiana State University. 1972. Preliminary recommendations and data analysis--Louisiana superport studies. Rep. 1. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-SG-72-03. 419 p.

ABSTRACT: Preliminary report on the economic feasibility, legal implications and potential for environmental impact of constructing an oil tanker superport off the coast of Louisiana between Bayou LaFourche and Southwest Pass. No field investigations or environmental monitoring programs were conducted and as a result, the data base for certain areas is incomplete. A recommendation for additional baseline data over the next two years is made. The results of this study are that a superport can be effectively located off the coast of Louisiana and if carefully conceived, can be constructed and operated with minimal environmental stress.
KEYWORDS: Louisiana; coastal waters; continental shelf; oil and gas; socioeconomics; shipping; environmental impact;

00240

Center for Wetland Resources, Louisiana State University. 1977. Plans, ports and productivity. Louisiana Sea Grant Pub. No. LSU-W-77-001. 160 p.

ABSTRACT: The 10th National Sea Grant Conference proceedings include addresses by special guests of the meeting. Much of the emphasis is on the problems and opportunities offered to the Sea Grant Program by the nation's ports.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; Pacific Ocean; estuary; coastal waters; shipping; socioeconomics;

00241

Center for Wetland Resources, Louisiana State University. 1982. Evaluation of the brine disposal from the West Hackberry site: the regional impact on menhaden resources: final report: Volume 2, Appendices A-D. Report to Department of Energy, Washington, DC. Rep. No. DOE/PO/10313-T-V.2. 168 p. Contract No. FC96-81PO10313. NTIS order No. DE87004481/XAB.

ABSTRACT: The following appendices are included: (1) station locations and cruise winds; (2) physical oceanography; (3) chlorophyll a and nutrients; and (4) zooplankton, fish eggs, and larvae.
KEYWORDS: Louisiana; biology; chemistry; environmental impact; fish; menhaden; brine disposal; chlorophyll; nutrient; wind; plankton; Strategic Petroleum Reserve;

00242
Center for Wetland Resources, Louisiana State University. 1983. LSU marine and coastal fisheries program for FY 1984-85. Louisiana State University, Office of Research, Baton Rouge, LA. 121 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; fisheries; fishery management;

00243
Chabreck, R.H. 1982. The effect of coastal alteration on marsh plants, p. 92-98. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences, and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: The Louisiana coastal marsh is subdivided into four vegetative types: saline, brackish, intermediate, and fresh. The types occur in bands generally paralleling the coastline and contain characteristic water salinity levels and plant communities. Activities of man coupled with natural processes, such as subsidence and erosion, have removed many natural tidewater barriers and reduced freshwater flow through the marshes. As a result, saltwater intrusion from the Gulf of Mexico has increased and the boundaries of vegetative types have been altered. The saline vegetative type has greatly increased in size and the brackish and intermediate types have shifted inland. This has caused a drastic reduction in the size of the fresh vegetative type.
KEYWORDS: Louisiana; marsh; biology; geology; ecology; environmental impact; flora; erosion;

00244
Chabreck, R.H.; Condrey, R.E. 1979. Common vascular plants of the Louisiana coast. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-T-79-003.

ABSTRACT: Information on more than 100 plants is included, and in most cases descriptions are taken down to the species level. However, in several genera, descriptions are only presented at the generic level (Example: Carex spp.). For each plant the nomenclature, known occurrences, general characteristics, habitat requirements, and value are described on a separate page. Also, as an aid to identification, a line drawing of each plant and its range of known occurrence appears with the description. An appendix of plants by family, genus, and species and a glossary follow the plant descriptions, illustrations, and range maps. Taxonomic nomenclature follows Correll and Correll (1972) and Radford et al. (1968). In cases where the scientific name has been changed in recent years, the name previously assigned to the plant is included in parentheses. Range maps provided with each plant indicate areas of known occurrence as determined by a coastal vegetation survey in August 1968. During that survey, sampling stations were established at 0.25 mile intervals along lines 7.5 miles apart along the Louisiana Coast from the Gulf of Mexico to the northern boundary of marsh, and a listing was made of plants at each station.
KEYWORDS: Louisiana; coastal waters; marsh; biology; flora; taxonomy;

00245
Chamberlain, G.W.; Lawrence, A.L. 1983. Reproductive activity and biochemical composition of Penaeus setiferus and Penaeus aztecus in the Gulf of Mexico. Texas A&M University, College Station, TX. Sea Grant Rep. No. TAMU-SG-84-203. 39 p. NTIS order No. PB84-121078.

ABSTRACT: Penaeus setiferus and P. aztecus compose the bulk of the Texas catch of shrimp, the most valuable fishery product in the state. This study compares the maturation and reproduction of P. setiferus and P. aztecus near an offshore brine diffuser (at a depth of 21 m) to that at two control locations. The parameters used in this evaluation included frequency of capture of ripe mated females, number of eggs and percent hatch from on-board spawns, stage of ovarian development of females, and relative size and biochemical composition (total carbohydrate, total lipid and total protein) of the gonad and hepatopancreas of males and females.
KEYWORDS: Texas; coastal waters; biology; chemistry; shrimp; salinity; ecology; environmental impact; brine disposal; Strategic Petroleum Reserve;

00246
Champ, M.A.; O'Connor, T.P.; Park, P.K. 1981. Ocean dumping of seafood wastes in the United States. Mar. Pollut. Bull. 12(7):241-244.

ABSTRACT: In the United States fish wastes can be ocean dumped without an Ocean Dumping Permit if the wastes contain no additives (flocculating or preserving agents, etc.). Fish wastes are currently ocean dumped off American Samoa, Louisiana and Puerto Rico. Fish wastes are characteristically high in proteins, fats, dissolved and suspended organic materials. Water quality parameters affected by these wastes are biochemical oxygen demand, oil and grease, pH, and turbidity. Other key factors included organic and nutrient enrichment, the attractant of undesirable predator species (i.e. sharks) and the natural oxygen regeneration processes.
KEYWORDS: Louisiana; coastal waters; biology; chemistry; fisheries; environmental impact; water quality; ocean dumping;

00247

Chan, H.S. 1975. A study of the transfer processes of phthalate esters to the marine environment. Ph.D. dissertation. Texas A&M University, College Station, TX. 133 p.

ABSTRACT: Sediment and water samples were collected from 34 stations in the Gulf of Mexico, biota samples from 24 stations and air samples from 8 stations between June, 1973 and February, 1975. Samples were analyzed for DDT, DDE, PCB's and phthalates.
KEYWORDS: Gulf of Mexico; pesticide; phthalate; PCB; chemistry;

00248

Chan, L.H.; Hanor, J.S. 1982. Dissolved barium in some Louisiana offshore waters: problems in establishing baseline values. Contrib. Mar. Sci. 25:149-159.

ABSTRACT: Dissolved barium values in samples of Louisiana offshore waters collected during the Gulf Universities Research Consortium--Offshore Ecology Investigation range from 31 to 67 ug/kg in waters of chlorosities of 11 to 19 g/l. The barium values are higher than normal open Gulf of Mexico values (11-12 ug/kg) and are in excess of those reasonably expected from conservative mixing of Mississippi River and Gulf waters. It is possible that some of this excess barium is the result of the discharge of effluents from offshore drilling platforms. Much of it, however, can probably be accounted for by simple desorption of barium from river-borne suspended material during natural processes of estuarine mixing. Additional work is required to quantify the relative contributions of natural and anthropogenic sources of barium.
KEYWORDS: Louisiana; coastal waters; continental shelf; chemistry; physical; oil and gas; trace metal; drilling fluid;

00249

Chaney, A.H.; Chapman, B.R.; Karges, J.P.; Nelson, D.A.; Schmidt, R.R.; Thebeau, L.C. 1978. Use of dredged material islands by colonial seabirds and wading birds in Texas. U.S. Army Engineer Waterways Experiment Station, Tech. Rep. No. D-78-8. 317 p.

ABSTRACT: The disposal of dredged material resulting from the creation and maintenance of navigation waterways and harbors has become a matter of national interest and concern. Dredging operations in shallow, coastal bays and estuaries have generated islands or chains of islands that have become a substrate for the development of plant and animal communities. Certain of these islands, with their vegetative communities, have become attractive to colonial seabirds and wading birds as nesting sites. The purpose of this study was to aid personnel of the U.S. Army Corps of Engineers in assessing the environmental impact of dredged material disposal sites by gathering information on those islands in Texas waters. Thirty-four islands were selected for detailed study: 17 in the Galveston-Houston area and 17 in the upper Laguna Madre near Corpus Christi. Studies were as follows: (1) the islands were photographed, visited by boat, and measured as to elevation and area; (2) over 3000 soil samples were taken; (3) the vegetation on each island was identified, measured, and quantified in over 3000 quadrats; (4) plant communities were identified, and vegetation maps of each island were constructed; (5) birds using the islands as colonies were identified and their nests were monitored; (6) locations of colonies were plotted on island maps, and nesting information was tabulated; (7) islands, birds, and vegetation were related to each other and discussed; (8) the numbers and species of nesting birds were compared with those nesting on natural sites in each area and for the entire Texas coast; (9) recommendations were made concerning island construction, maintenance, and management in relation to nesting seabirds and wading birds.
KEYWORDS: Texas; estuary; biology; bird; environmental impact; dredging;

00250

Chapman, B.R. 1984. Seasonal abundance and habitat-use patterns of coastal bird populations on Padre and Mustang Island barrier beaches [Following the Ixtoc I oil spill]. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-83/31. 73 p.

ABSTRACT: The report assesses the impact of the Ixtoc I oil spill on coastal bird populations and provides baseline information about the distribution and seasonal abundance of the avian species that use south Texas beach and nearshore habitats. The report synthesizes all available data on waterbirds in the study area, including censuses made from October 1979 through June 1981. The section on results and discussion describes the annual, seasonal, and daily cycles of avian abundance, distribution, and diversity. The species profiles sections provide distribution, status, seasonal abundance, habitat-use patterns, and oil vulnerability information for 26 species.
KEYWORDS: Texas; barrier island; beach; Padre Island; Mustang Island; biology; ecology; bird; oil and gas; oil spill; environmental impact; Ixtoc;

00251

Chapman, C.R. 1966. Channelization and spoiling in Gulf Coast and South Atlantic estuaries, p. 93-106. In Proceedings, Marsh and Estuary Management Symposium, Louisiana State University, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Atlantic Ocean; estuary; marsh; geology; dredging; environmental impact;

00252
Chapman, C.R. 1966. The Texas Basin Project, p. 83-92. In Amer. Fish. Soc. Spec. Pub. No. 3.

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; fisheries;

00253
Chew, F. 1964. Sea-level changes along the northern coast of the Gulf of Mexico. Trans. Am. Geophys. Un. 45:272-280.

ABSTRACT: The changes in the monthly sea level along the northern coast of the Gulf of Mexico are correlated with changes in the winds producing net onshore and offshore water transport. The initial correlation is supplemented by correlating the same variables for two recent five-year periods at three localities. Additional support for these correlations is found in a study of the effects of the height and stratification of a particular water column on the deviation of the monthly sea level, at that locality, for a long-term mean. The evidence warrants the preliminary conclusion that the major features of the July minimum in sea level along the northern coast of the Gulf of Mexico are primarily related to local winds producing offshore transport of water.
KEYWORDS: Gulf of Mexico; physical; sea level; coastal waters;

00254
Chew, F.; Drennan, K.L.; Demoron, W.J. 1962. On the temperature field east of the Mississippi Delta. J. Geophys. Res. 67(1):271.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; physical; salinity; temperature; Loop Current;

00255
Chew, F.; Drennan, K.L.; Demoran, W.J. 1962. Drift bottle return in the wake of Hurricane Carla, 1961. J. Geophys. Res. 67(7):2773-2776.

ABSTRACT: Most of 2000 drift bottles released off the mouths of the eastern distributaries of the Mississippi three weeks before Hurricane Carla in September 1961 were recovered from the vicinity where Carla crossed the Texas coast.
KEYWORDS: Texas; Louisiana; physical; continental shelf; current; hurricane; meteorology;

00256
Childers, R.E. 1985. Revised and recoded ROSCOP forms for Minerals Management Service Gulf of Mexico outer continental shelf Environmental Studies Programs. Report by Ralph Childers Associates to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. Contract No. 14-12-0001-30027. 173 p.

ABSTRACT: This report contains reprints of 143 revised and recoded ROSCOP forms from the preceding decade of BLM and MMS Outer Continental Shelf Environmental Studies Programs.
KEYWORDS: Gulf of Mexico; biology; chemistry; geology; physical; fisheries; oil and gas;

00257
Chin, E. 1958. Shrimping in Galveston Bay. The Conservationist 2:2.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; fisheries; shrimp;

00258
Chin, E. 1960. The bait shrimp fishery of Galveston Bay, Texas. Trans. Amer. Fish. Soc. 89:135-141.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; fisheries; shrimp;

00259
Chittenden, M.E., Jr.; Cummings, J.A.; Harper, D.E., Jr. 1982. Evaluation of brine disposal from the Bryan Mound Site of the Strategic Petroleum Reserve Program. Final report of 18-month postdisposal studies. Texas A&M University, College Station, TX. Report to Department of Energy, Washington, DC. Rep. No. DOE/PO/10114-5-V.2. 391 p. Contract No. FC96-79PO10114. NTIS order No. DE82014491.

ABSTRACT: The Department of Energy's Strategic Petroleum Reserve Program began leaching the Bryan Mound salt dome and discharging brine into the coastal waters of Freeport, Texas on March 10, 1980. This report describes the findings of a team of Texas A and M University scientists and engineers who have conducted an eighteen-month environmental study to evaluate the effects of the Bryan Mound brine discharge. The study addresses the areas of physical oceanography, analysis of the discharge plume, water and sediment quality, nekton, benthos, phytoplankton, zooplankton, and data management.
KEYWORDS: Texas; coastal waters; biology; chemistry; physical; water quality; brine disposal; environmental impact; sediment; benthos; plankton; salinity; Strategic Petroleum Reserve;

00260
Chittenden, M.E., Jr.; McEachran, J.D. 1976. Composition, ecology and dynamics of demersal fish communities on the northwestern Gulf of Mexico continental shelf, with a similar synopsis of the entire Gulf. Texas A&M University, College Station, TX. TAMU-SG-76-208. 104 p.

ABSTRACT: Micropogon undulatus and the family Sciaenidae are dominant on white shrimp grounds, while Stenotomus caprinus and the family Sparidae are primarily centered about brown shrimp grounds. The fish fauna are richer and of greater biomass on brown shrimp grounds. Fishes from the white shrimp grounds have a strong affinity for estuary environs, while fishes of the brown shrimp grounds are independent of estuaries. The ichthyofauna assemblage of the Gulf consists of four major demersal fish communities whose distribution is determined by sediment composition, salinity, topographic relief and temperature. Life history and population dynamics are described for each of 15 major fish species. The observations are primarily for off the Texas Coast and may possibly apply for the northeastern Gulf Coast.
KEYWORDS: Louisiana; Mississippi; Texas; coastal waters; continental shelf; biology; ecology; fisheries; shrimp; fish;

00261
Chittenden, M.E., Jr.; Moore, D. 1977. Composition of the ichthyofauna inhabiting the 110-m bathymetric contour of the Gulf of Mexico, Mississippi River to the Rio Grande. N.E. Gulf Sci. 1(2):106-114.

ABSTRACT: None
KEYWORDS: Louisiana; Texas; continental shelf; biology; fish;

00262
Christman, S.P.; Kochman, H.I.; Lippincott, W.S. 1978. An annotated bibliography of the fish and wildlife resources of Galveston Bay, Texas. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-78/71. 2 vol.

ABSTRACT: The bibliography brings together more than 1600 references, of which more than 1400 are abstracted, pertaining to the fish and wildlife resources of Galveston Bay, Texas. Included are references concerned with all aspects of the ecology of the Galveston Bay system, including the Houston Ship Channel, Trinity Bay, East Bay, West Bay, the San Jacinto River, and all major tributaries. Also included are references about upland areas adjacent to Galveston Bay in Harris, Chambers, and Galveston counties, as well as the marine environment to the 60-foot depth contour in the Gulf of Mexico. The references span the period from the late 19th century to 1978 and range from site-specific impact studies to regional field guides and reports from laboratory studies.
KEYWORDS: Texas; estuary; Galveston Bay; biology; ecology; fish; wildlife; bibliography;

00263
Christmas, J.Y.; Gunter, G. 1960. Distribution of menhaden, genus Brevoortia in the Gulf of Mexico. Trans. Amer. Fish. Soc. 80:338-343.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fish; menhaden;

00264
Christmas, J.Y; Gunter, G.; Whatley, E.C. 1960. Fishes taken in the menhaden fishery of Alabama, Mississippi, and eastern Louisiana. U.S. Fish and Wildlife Service, Spec. Sci. Rep. Fish. No. 339. 10 p.

ABSTRACT: None
KEYWORDS: Alabama; Louisiana; Mississippi; biology; fisheries; fish; menhaden;

00265
Christmas, J.Y.; McBee, J.T.; Waller, R.S.; Sutter, F.C. 1982. Habitat suitability index models: gulf menhaden. U.S. Fish and Wildlife Services, Office of Biological Services, Washington, DC. FWS/OBS-82/10.23. 23 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; ecology; fish; fisheries; model; menhaden;

00266
Christmas, J.Y.; Waller, R.S. 1975. Location and time of menhaden spawning in the Gulf of Mexico. Gulf Coast Research Laboratory, Ocean Springs, MS. 20 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fish; ecology; menhaden;

00267
Churchill, E.P. 1919. Life history of the blue crab. Bull. Bur. Fish. 361(870):95-128.

ABSTRACT: This report discusses the life history of the blue crab, Callinectes sapidus. Habitat and distribution, morphological development, molting, general habits, sexual reproduction, winter habits, autotomy, mating, spawning experiments and number of batches of eggs laid are discussed.
KEYWORDS: biology; fisheries; ecology; blue crab;

00268
Clapp, R.B.; Banks, R.C.; Morgan-Jacobs, D.; Hoffman, W. 1982. Marine birds of the southeastern United States and Gulf of Mexico. Part 1. Gaviiformes through Pelecaniformes. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/01. 637 p.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; biology; bird; ecology;

00269
Clapp, R.B.; Morgan-Jacobs, D.; Banks, R.C. 1982. Marine birds of the southeastern United States and Gulf of Mexico. Part 2. Anseriformes. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/20. 491 p.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; biology; bird; ecology;

00270
Clapp, R.B.; Morgan-Jacobs, D.; Banks, R.C. 1983. Marine birds of the southeastern United States and Gulf of Mexico. Part 3. Charadriiformes. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-83/30. 850 p.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; biology; bird; ecology;

00271
Clark, S.H.; Emiliani, D.A.; Neal, R.A. 1974. Release and recovery data from brown and white shrimp mark-recapture studies in the northern Gulf of Mexico, May 1967-November 1969. National Marine Fisheries Service, Data Rep. No. 85. 152 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp; fishery statistics;

00272
Cloos, E. 1968. Experimental analysis, analysis of Gulf Coast fracture patterns. Am. Assoc. Pet. Geol. Bull. 52:420-444.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; geology; faulting;

00273

Coastal Environmental Services, Ltd. 1986. Operator's manual and guidelines for use of a predictive model (IBLAST) to determine the effects of underwater explosive detonations to fish in shallow water areas. Technical report to the Department of Fisheries and Oceans, Habitat Management Division, Vancouver, BC, Canada.

ABSTRACT: The computer software program described in this manual is designed to provide predictive estimates of the lethal effects of underwater explosive detonations on fish. The program is "user friendly" and does not require that the user has previous knowledge of either fisheries biology or the operation of a microcomputer. The program provides predicted effects for both midwater charges and charges that are drilled and buried in rock substrate. The lethal effects are related to predicted impulse strength which is a characteristic of overpressure waves that travel in the water column away from the site of the explosion. The program is designed to also provide predicted impulse strengths at distance for both midwater and buried charge detonations. It is recommended that overpressure monitoring be conducted during future blasting programs to provide data which can be used to improve the predictive capabilities of the present models.
KEYWORDS: biology; fish; oil and gas; environmental impact; explosion; model;

00274

Coastal Environments, Inc. 1976. A process for coastal resources management and impact assessment. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Presents a background for understanding resource management and an overview of naturally occurring and man-made physical conditions that may be encountered in the Louisiana coastal area. Also, it presents a practical procedure for developing a local coastal resource management program and a systematic approach to resource management and assessment of onshore impacts resulting from Outer Continental Shelf (OCS) energy related resource development.
KEYWORDS: Louisiana; estuary; marsh; beach; oil and gas; biology; ecology; environmental impact;

00275

Coastal Environments, Inc. 1977. A jetty from Point Chevreuil: An evaluation of a proposal to reduce sedimentation in the Cote Blanche Bays and Vermilion Bay. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: This study analyzes the processes that are causing the observable changes in the emerging delta in Atchafalaya Bay, and considers effectiveness of a jetty in controlling these changes.
KEYWORDS: Louisiana; estuary; Vermilion Bay; geology; physical; sedimentation;

00276

Coastal Environments, Inc. 1977. Cultural resources evaluation of the northern Gulf of Mexico continental shelf. Volume I. Prehistoric cultural resource potential. Report to the National Park Service, Office of Archaeology and Historic Preservation, Interagency Archaeological Services, Washington, DC. 361 p. NTIS order No. PB276773/AS.

ABSTRACT: This is a study of the predictability of drowned prehistoric habitation sites in the continental shelf area, northern Gulf of Mexico, from the Rio Grande River to the Florida Keys. Because of the difficulties of obtaining data concerning the location of a submerged site, an indirect approach was formulated incorporating the limitations of the detection devices that are available. A method is presented of forming hypotheses about the nature of the archeological possibilities of the OCS - hypotheses that can be tested with the limited sort of data that can presently be gathered form the OCS. The method is this: the OCS will be divided into Eastern, Central, and Western Gulf areas, corresponding to the adjacent areas on land. The archeological literature of the land areas will be reviewed to identify major cultural manifestations, by time and by type. These can be predicted to have occurred similarly on the OCS in the time periods when and where it was exposed concurrently. These cultural manifestations are examined for the purpose of making tables of index artifacts, environmental-use models, and particularly landforms favored for habitation sites. Then, addressing the problem of increasing one's chances in site prospecting on the OCS: the landforms (detectable, as relicts) that are most frequently favored at any period are assigned a list of "signatures" - discrete site indicators that are capable of being detected by the limited sensing tools and techniques available for OCS survey. An inventory is made of the known sites in the Northern Gulf area that were occupied from 55,000 B.P. to 3,500 B.P. Typical sites from three regions, Eastern, Central, and Western Gulf Coast, are selected for Pre-projectile Point, Paleo-Indian, Archaic, and Poverty Point Periods. Age, ecofacts, artifacts, and associated landforms of these typical sites are discussed. The methodology developed in this study is illustrated with a case study of the Mississippi Delta area.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; archaeology; continental shelf; prehistoric;

00277

Coastal Environments, Inc. 1977. Cultural resources evaluation of the northern Gulf of Mexico continental shelf. Volume II. Historical cultural resources. Report to the National Park Service, Office of Archaeology and Historic Preservation, Interagency Archaeological Services, Washington, DC. 171 p. NTIS order No. PB276774/AS.

ABSTRACT: A study of the occurrence of shipwrecks and related artifacts was conducted for the continental shelf area, northern Gulf of Mexico, from the Rio Grande River to the Florida Keys. The period of consideration extended from 1500 A.D. through 1945 A.D. Published and unpublished reports of losses and locations of known wrecks were utilized along with charts and maps. From this data, a listing of 1,904 reported losses and/or known wrecks was compiled, with a basic data sheet for each wreck. It is estimated that the total number of significant wrecks in the study area is between 2,500 and 3,000. Of the total shipwreck population, approximately 70 percent date from the 19th and 20th centuries. The remaining 30 percent, the wrecks from the 16th, 17th, and some from the 18th century, offer data which, unlike the information from more recent wrecks, may be unavailable from any other source. It is estimated that approximately two-thirds of the total number of wrecks in the northern Gulf are within 1.5 kilometers of the coast. Another 500 wrecks probably lie between the 1.5-kilometer and 10-kilometer line. For the most part, wrecks are associated with approaches to seaports, straits, shoals, or reefs and along well established sailing routes. Current techniques employed in subaqueous cultural resource surveys are discussed and evaluated. These include remote-sensing tools such as magnetometers, side-scan sonars, and sub-bottom profilers. Recommendations for intensity of survey effort in the study area are made in a companion map volume. Zones are identified based on probability of culture resource occurrence, and intensity of survey effort is related to the various zones.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; archaeology; continental shelf; historic; shipwreck;

00278

Coastal Environments, Inc. 1977. Cultural resources evaluation of the northern Gulf of Mexico continental shelf. Vol. III, Maps. Report to the National Park Service, Office of Archaeology and Historic Preservation, Interagency Archaeological Services, Washington, DC. NTIS order No. PB286874/AS.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; continental shelf; archaeology; prehistoric; historic; shipwreck;

00279

Coastal Environments, Inc. 1978. Siting energy related facilities in Louisiana's coastal zone. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Discusses the major items that need to be considered in the process of energy facility siting: the facility (common types considered and parts identified); the environmental setting (discusses Louisiana's coastal area with maps and summarizes factors to be considered in CEIP project assessments); and the institutional aspect (discusses relationships of energy facility siting and coastal zone management interests at federal, state, regional, and local levels). Also discusses the procedure to follow to determine location alternatives, project selection, and facility implementation.
KEYWORDS: Louisiana; estuary; marsh; beach; socioeconomics; oil and gas; environmental impact;

00280

Coastal Environments, Inc. 1979. Cultural resources survey of the Mississippi-Gulf Outlet, Orleans and St. Bernard Parishes, Louisiana. U.S. Army Corps of Engineers, New Orleans District, New Orleans, LA. 165 p.

ABSTRACT: The Mississippi River-Gulf Outlet (MRGO) is located in St. Bernard and Orleans Parishes, southeast Louisiana, between New Orleans and Chandeleur Sound. In order to prevent inadvertent destruction of cultural resources along the MRGO during New Orleans District Corps of Engineers (NODCE) maintenance dredging, Coastal Environments, Inc. (CEI), was contracted to perform a cultural resources survey of the project area. An on-the-ground pedestrian and boat survey of the MRGO channel, spoil canal and spoil retaining levees was conducted in September and October, 1978. Three of a total of nine sites were considered eligible for inclusion in the National Register of Historic Places (16 SB 12, 16 OR 40, and 16 OR 41). Coring to determine the extent of remaining in situ midden has been recommended. The remainder are not considered eligible or require further testing. In addition to the field survey, and extensive background literature search and review of previous archeological research in the study area was conducted. Visits were made to most of the sixteen additional known sites located within 1.6 km of the MRGO. Previous collections from sites along and within 1.6 km of the MRGO were reanalyzed in order to improve the chronological frame of reference necessary in any consideration of the prehistory of an area. In this report, the sequence of development of the St. Bernard Delta lobe has been traced through time in order to reconstruct the paleogeography of the study area and the environment in existence at the time the MRGO sites were utilized.
KEYWORDS: Louisiana; coastal waters; Mississippi River; archaeology; prehistoric;

00281
Coastal Environments, Inc. 1981. Chenier Plain region ecological characterization: A habitat mapping study. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Designed to aid the user of the habitat maps through clarification of labels and terms and a discussion of habitat map interpretative and cartographic processes.
KEYWORDS: Louisiana; estuary; marsh; beach; biology; geology; ecology; remote sensing;

00282
Coastal Environments, Inc. 1981. The Chenier Plain region habitat mapping study. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Identifies and measures habitats in southwestern Louisiana for 1978 at a scale of 1:24,000. Was formulated after the preceding U.S. Fish and Wildlife Service (FWS) Mississippi River Deltaic Plain Region habitat mapping study and completes the 1978 interpretation of the Louisiana Coastal Zone. Available for inspection at the Coastal Management Division offices, Louisiana Department of Natural Resources, Baton Rouge.
KEYWORDS: Louisiana; estuary; marsh; beach; biology; geology; ecology; remote sensing;

00283
Coastal Environments, Inc. 1982. Louisiana's eroding coastline: Recommendations for protection. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Discusses processes of shoreline erosion and wetland deterioration in Louisiana. Characterizes the barrier shorelines, delineates shoreline change rates, analyzes impacts of erosion on land use patterns, and recommend remedial measures to reduce rates of shoreline erosion.
KEYWORDS: Louisiana; barrier island; beach; marsh; geology; erosion;

00284
Coastal Environments, Inc. 1982. Sedimentary studies of prehistoric archaeological sites. National Park Service, Washington, DC. 120 p.

ABSTRACT: Accelerated use of mineral resources on the continental shelf of the United States has precipitated a need for practical techniques to protect submerged archaeological sites within the larger framework of environmental protection and economic development activities. This study outlines criteria for the identification of submerged archaeological sites on the northern Gulf of Mexico continental shelf. By use of conventional bottom sampling instruments, sediment samples from suspected archaeological habitation sites can be examined against specific technical criteria to determine whether cultural resources are present.
KEYWORDS: Gulf of Mexico; archaeology; coastal waters; continental shelf; prehistoric; sediment;

00285
Coastal Environments, Inc. 1983. Recommendations for freshwater diversion to Barataria Basin, Louisiana. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Describes the study area, establishes the salinity goals for optimal resource management, determines the amount of supplemental freshwater needed, evaluates sites for freshwater introduction, describes the recommended delivery and outfall plan, and discusses the predicted results and possible impacts.
KEYWORDS: Louisiana; estuary; Barataria Bay; biology; ecology; salinity;

00286
Cochrane, J.D.; Kelly, F.J. 1986. Low-frequency circulation on the Texas-Louisiana continental shelf. J. Geophys. Res. 91(C9):10,645-10,659.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; physical; current;

00287

Cody, T.J.; Avent, R.M. 1980. Assessment of bottom longline fishing off the central Texas coast. Tex. Parks Wildl. Dep., Austin, TX. Management Data Series Rep. No. TPWD-MDS-16. 32 p. NTIS order No. PB83-112235.

ABSTRACT: From October 1977 through September 1979 the Texas Parks and Wildlife Department conducted a study to assess and evaluate the commercial potential of bottom longline gear as a harvest method for finfish stocks off the central Texas coast. Sampling was conducted quarterly in 10-fm increments out to the 50 fm using 1200-ft sections of halibut-type longline gear and tuna circle hooks. A total of 469 fish representing 32 species was caught at 79 stations. The Atlantic sharpnose shark (Rhizoprionodon terraenovae) was the most abundant species in number (310) and weight (2958 lb) representing 66.1% of the total fish caught and 54.8% of the total biomass. The catch data demonstrated that bottom longlining at depths less than 50 fm is not likely to offer a practical commercial alternative for shrimping fleets unless underutilized species (mainly sharks) could be marketed.
KEYWORDS: Texas; coastal waters; continental shelf; fisheries; shark;

00288

Cody, T.J.; Avent, R.M. 1980. Mark-recapture studies of penaeid shrimp in Texas, 1978-1979. Texas Parks and Wildlife Department, Management Data Series Proj. 2-312-R. 66 p.

ABSTRACT: As part of the MEXUS-GULF Shrimp Tagging Program in the western Gulf of Mexico, the Texas Parks and Wildlife Department and National Marine Fisheries Service conducted 10 mark-recapture studies to determine movement and growth of penaeid shrimp stocks along the Texas coast. All shrimp were tagged with colored polyethylene streamer tags and released in either inshore or offshore areas near Port Aransas, Port Mansfield or Port Isabel. From May 1978-Oct 1979, 77,843 shrimp were released 559 have been recaptured. The recapture rates for inshore studies were 0.0-2.2% while those for offshore studies were 6.7@10.0%. Most of the recovered shrimp had moved less than 37 km and were recaptured within 28 days. Short-term recoveries came from all directions with dominant movement alongshore to the northeast and south. All long-term recaptures from the offshore studies came from the south. Growth rates for individual shrimp were highly variable. During August-October 1978 recaptured shrimp had a mean growth rate of 5-6 mm (tail length) per 2-week period. After an initial period of slow growth following inshore releases in April-May 1979, the overall population growth rate was 6-9 mm (tail length) per 2-week period from late May through July 1979.
KEYWORDS: Texas; estuary; coastal waters; biology; fisheries; shrimp;

00289

Coleman, E. 1983. Coastal Louisiana - climate and recreation. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. 24 p.

ABSTRACT: This brochure briefly describes the recreational potential of coastal Louisiana. General information presented includes charter boat locations, coastal wildlife management areas, fish records, and climatological conditions.
KEYWORDS: Louisiana; coastal waters; estuary; marsh; barrier island; socioeconomics; recreation; wildlife;

00290

Coleman, J.M. 1975. Deltaic processes. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Technical Rep. No. 197. 25 p.

ABSTRACT: Depositional facies in deltaic sediments result from interacting dynamic processes (climate, wave energy, tidal action, etc.), which vary in both intensity and frequency. The results of a comparison of 55 major world deltas indicated that no one delta model could be formulated to use as a basis for predicting vertical sequences in all of the deltas. The study showed that sand body distribution, geometry and internal characteristics are primarily a function of wave energy distribution, river-mouth dynamics, nearshore currents, tidal energy, and tectonics and geometry of the receiving basin.
KEYWORDS: Louisiana; Mississippi River Delta; geology; sediment transport; sedimentation; stratigraphy;

00291

Coleman, J.M.; Bouma, A.H.; Stelting, C.E.; Prior, D.B. 1984. Framework of Mississippi Fan, Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 68(4):464. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology;

00292

Coleman, J.M.; Gagliano, S.M. 1964. Cyclic sedimentation in the Mississippi River Deltaic Plain, p. 67-80. In Trans. Gulf Coast Assoc. Geol. Soc. 14th Ann. Convection Convention, October 28-30, 1964, Corpus Christi, TX. Gulf Coast Association of Geological Societies, New Orleans, LA.

ABSTRACT: A major characteristic of modern Mississippi River sediments is the orderly repetition of depositional events. This cyclic repetition consists of alternations of detrital and nondetrital deposition. Each major deltaic lobe is composed of a detrital lens or complex of lenses bounded on all sides by essentially nondetrital sediments indigenous to the basin of deposition. Examples of major cycles are provided by the modern and pre-modern lobate deltas. A shift in the point source of sediment supply is responsible for the abandonment of an active delta and initiation of a second cycle related to the new point source. The abandoned delta, deprived of nourishment, undergoes coastal retreat and inundation due to continuing subsidence. During this process, reworked and in situ deposits accumulate over the detrital lens, forming the bounding component of the cycle. The pre-modern deltas, varying in time of abandonment, afford a natural laboratory for the study of these capping accumulations. Two such examples, the St. Bernard and Sale-Cypremort deltas, are presented. Subdeltas or crevasses are scaled down versions of the major deltaic cycle and can be used as a model. Because of their smaller size and shorter duration, the processes of deposition and facies relationships of the detrital component can be more easily studied than in the major deltaic lobes. Vertical and lateral distribution of environmentally controlled facies within a deltaic mass are the result of the cyclic nature of sedimentation and delta growth. Some possible facies relationships are explored in a hypothetical sequence of overlapping cycles and compared with an actual vertical section taken at Fort Jackson, Louisiana.
KEYWORDS: Louisiana; Mississippi River Delta; geology; sediment; sediment transport; sedimentation;

00293

Coleman, J.M.; Gagliano, S.M.; Morgan, J.P. 1969. Mississippi River subdeltas: natural models of deltaic sedimentation. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Bull. No. 3:23-27.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; geology; sedimentation; model;

00294

Coleman, J.M.; Garrison, L.E. 1978. Geological aspects of marine slope stability, northwestern Gulf of Mexico, p. 9-44. In Marine geotechnology, Volume 2. Marine slope stability. Crane, Russak and Co.

ABSTRACT: The improvement of sensors such as various high-resolution seismic and navigational systems and side-scan sonar, of offshore shallow-water drilling techniques, and of laboratory analyses has allowed the marine geologist to make more accurate identifications and maps of the distribution of numerous types of marine sediment instabilities, as well as to determine the mechanisms responsible for their occurrence. A large number of data on the continental shelf and upper continental slope off the modern delta of the Mississippi River have been complied; these data will be used to document the major types of slope instabilities. The continental shelf and slope off the modern Mississippi River delta display various types of sediment instability. High rates of sedimentation (up to 80 m per century), weak, high-water-content clays, and differential weighting of clay sediments characterize this region. The major types of sediment instabilities that have been documented include (a) peripheral slumping, (b) shallow diapiric intrusions, (c) radial graben (tensional faulting), (d) circular collapse depressions, (e) surface mudflows, (f) shelf-edge arcuate slumps, and (g) various deep-seated faults.
KEYWORDS: Louisiana; continental shelf; continental slope; geology; sedimentation; hazard; submarine landslide;

00295

Coleman, J.M.; Prior, D.B. 1981. Deltaic environments of deposition. Am. Assoc. Pet. Geol. Bull. 65:139-177.

ABSTRACT: Delta environments have a wide variety of individual depositional facies within the overall delta sequence. This complexity results from the following factors: (a) modern deltas exist in a wide range of geographic settings,ranging in climatic regimes from arctic to temperate to tropical to arid, with basin tectonics ranging from rather stable basins to extremely actively subsiding basins; (b) deltas form primarily in the zone of interaction between freshwater and marine processes, one of the most complex process settings in all coastal environments; (c) deltas carry large volumes of sediment, ranging in grain size from gravel to clay, and deposit these sediments both overbank and into the marine environment through distributary channels; (d) rapid rates of deposition often result in formation of extremely weak foundations, with a wide variety of mass movement processes resulting in complex redistribution of the deltaic sediment. Thus sand bodies within deltas display a variety of geometries and vertical- sequence characteristics. The complexity of environmental settings under which deltas exist results in a variety of vertical sequences that can form within the delta facies. Delta types range from river dominated to tide dominated and wave-current dominated (Coleman, 1976). From the standpoint of petroleum accumulation, however, river- and tide-dominated deltas are probably the most important. In these two delta settings, reservoir-quality rocks are often deposited in close proximity to potential source beds, contemporaneous structure which forms major trapping potentials in common, and most deltas exist in rapidly subsiding basins, allowing thick deltaic sequences to develop over a rather short time framework. The highly wave-reworked delta sequences are often devoid of major source rock deposits and often do not form in structure settings that result in major trapping characteristics of the deposits. Deposits described represent the most common sand-body types in river- and tide-dominated delta sequences.
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi River Delta; coastal waters; geology; sediment; sedimentation; erosion;

00296

Coleman, J.M.; Prior, D.B.; Adams, C.E., Jr. 1981. Erosional furrows on continental shelf edge, Mississippi Delta region. Geo-Marine Letters 1(1):11-15.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; continental shelf; geology; erosion;

00297

Coleman, J.M.; Prior, D.B.; Garrison, L.E. 1978. Submarine landslides in the Mississippi River Delta, p. 1067-1074. In Proceedings, 10th Annual Offshore Technology Conference, May 8-11, 1978, Houston, TX.

ABSTRACT: Systematic side-scan sonar and high-resolution seismic records from the shallow-water offshore areas of the Mississippi Delta have revealed widespread subaqueous slope failures in bottom sediments. These failures have resulted in damage and loss to offshore structures and pipelines. The features occur on slopes with very low inclination (ranging from 0.2 deg. to 1.5 deg.) and in water depths of 5-100 m. The types of features include collapse depressions, bottleneck slides, elongate slides and slumps, mudflow gullies, and overlapping mudflow lobes. Although movements include both vertical and rotational displacements, the basic mechanism can be approximated as downslope translation of shallow slabs of debris. Although movement rates of up to several hundred meters/year have been documented, it is postulated that large-magnitude surges may be inherent in these features. These submarine landslides result from complex temporal and spatial combinations of wave-induced stresses, sediment loading, and generation of high pore water and methane gas pressures.
KEYWORDS: Louisiana; continental shelf; geology; submarine landslide; hazard;

00298

Coleman, J.M.; Prior, D.B.; Garrison, L.E. 1980. Subaqueous sediment instabilities in the offshore Mississippi River Delta. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. BLM Open File Rep. 80-01. Contract No. AA551-MU9-10. 60 p. NTIS order No. PB80-224629.

ABSTRACT: This paper consolidates previous research describing subaqueous mass wasting around the Mississippi River Delta. A characterization of associated near-surface instabilities is illustrated utilizing seismic and side-scan sonar images and regional deltaic maps. Mass wasting around the periphery of the delta varies in magnitude, frequency of occurrence and driving mechanisms responsible for their formation. This regional overview of the types and distribution of the subaqueous failures will allow detailed surveys in individual oil lease blocks to be better evaluated for changes in bottom features.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; continental slope; geology; hazard; erosion; submarine landslide;

00299
Coleman, J.M.; Prior, D.B.; Roberts, H.H. 1986. Geologic development and characteristics of the continental margins, Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 36:61-64.

ABSTRACT: The continental slope of the Gulf Basin covers an area of more than 500,000 sq km and consists of smooth and gently sloping surfaces, prominent escarpments, knolls intraslope basins, and submarine canyons and channels. It is an area of extremely diverse topographic and sedimentologic conditions. The slope extends from the shelf break, roughly at the 200 m isobath, to the upper limit of the continental rise, at a depth of 2800 m. The most complex province in the basin, and the one of most interest to the petroleum industry, is the Texas-Louisiana slope, occupying an area of 120,000 sq km and in which bottom slopes range from less than 1 degree of greater than 20 degrees around the knolls and basins.
KEYWORDS: Gulf of Mexico; continental slope; geology; geologic history;

00300
Coleman, J.M.; Suhayda, J.N.; Whelan, T.; Wright, L.D. 1974. Mass movement of Mississippi River Delta sediments. Trans. Gulf Coast Assoc. Geol. Soc. 24:49-68.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; geology; sediment transport; hazard;

00301
Collier, A.; Drummond, K.H.; Austin, G.B. 1958. Gulf of Mexico physical and chemical data from Alaska cruises. U.S. Fish and Wildlife Service, Spec. Sci. Rep. Fish. No. 249. 417 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; temperature; salinity;

00302
Collins, L.A.; Finucane, J.H.; Barger, L.E. 1980. Description of larval and juvenile red snapper, Lutjanus campechanus. U.S. Nat. Mar. Fish Serv. Fish. Bull. 77 (4):965-974.

ABSTRACT: Identification and description of the red snapper, L. campechanus, family Lutijanidae, were based on the general morphology, meristic characters, head spination and pigmentation of 18 larval and 6 juvenile specimens, 4.0-22.4 mm standard length. These 24 specimens were selected from a total of 226 larval and juvenile L. campechanus which were collected mainly along the Texas [USA] coast from 1975-1977. Lutjanids < 4.0 mm lacked presently recognizable characters that are diagnostic at the species level. The key to the development of the series was a unique meristic count. Some other useful diagnostic characters were small serrations on the anterior margin of the pelvic spine in specimens of 4.8-12.4 mm and a long unbroken soft ray immediately adjacent to the pelvic spine in specimens of 4.8-10.6 mm. A brief comparison was made between L. campechanus and other lutjanid larvae and juveniles [L. griseus, L. mahogoni, L. synagris, L. analis and L. aya]. [The red snapper, L. campechanus (Poey), family Lutjanidae, is one of the most important commercial and recreational fish species in the Gulf of Mexico.]
KEYWORDS: Gulf of Mexico; biology; fisheries; fish; snapper; taxonomy;

00303
Collum, L.A.; Fritts, T.H. 1985. Sperm whales (Physeter catodon) in the Gulf of Mexico. Southwest. Nat. 30:101-104.

ABSTRACT: The distribution of the sperm whale, Physeter catodon, was documented in the Gulf of Mexico during 1979 to 1981 using regular aerial surveys and opportunistic sightings from ships. Most sightings were in the western Gulf of Mexico in deep waters near the edge of the continental shelf. A total of 47 adults and 12 young animals was sighted in groups containing from one to 14 animals.
KEYWORDS: Gulf of Mexico; biology; marine mammal;

00304
Comiskey, C.E. 1981. Shrimp and redfish studies, Bryan Mound Brine Disposal site off Freeport, Texas, 1979-1981. Volume I(B). Texas coast shrimp catch and effort data analysis. National Marine Fisheries Service, Galveston, TX. NOAA Tech. Mem. NOAA-TM-NMFS-SEFC-65. 256 p. NTIS order No. PB83-122705.

ABSTRACT: Four coastal areas along the northwestern Gulf of Mexico were assessed for brine discharge into near-shore waters. This project deals with potential impacts of brine disposal from the Bryan Mound site.
KEYWORDS: Texas; coastal waters; oil and gas; biology; fish; shrimp; drum; brine disposal; environmental impact; Strategic Petroleum Reserve;

00305
Comiskey, C.E. 1982. Shrimp and redfish studies, Bryan Mound Brine Disposal Site off Freeport, Texas, 1979-1981. Volume 1(A). Analysis of data on shrimping success, shrimp recruitment and associated environmental variables. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-65. 508 p. NTIS order No. PB83-139279.

ABSTRACT: The analyses given in the report address the potential impacts to the Texas shrimp fishery from offshore disposal of brine associated with the U.S. Department of Energy Strategic Petroleum Reserve Program at the Bryan Mound storage site, near Freeport, Texas through the analysis of the historical data base for the fishery (Gulf Coast Shrimp Data) and associated shrimp recruitment and environmental variables. Time series analyses, involving ARIMA modeling and Fourier analysis of monthly brown and white shrimp catches in area 19 for the period 1960-1977 were performed and described in the report.
KEYWORDS: Texas; coastal waters; oil and gas; biology; brine disposal; shrimp; ecology; environmental impact; fisheries; fishery statistics; Strategic Petroleum Reserve;

00306
Comiskey, C.E.; Farmer, T.A. [ed.]. 1981. Characterization of baseline oceanography for the Texoma region brine disposal sites, Vol. I. Final report to the U.S. Department of Energy, Strategic Petroleum Reserve Office, Washington, DC. Contract No. DEAC 01-77US08788.

ABSTRACT: In September 1977, a predischarge baseline monitoring program was initiated at several Texoma region candidate brine disposal sites and several control sites in the nearshore Gulf of Mexico off southwest Louisiana and southeast Texas. The physical oceanographic program provided essentially continuous near surface and near bottom current meter measurements at several sites in the Texoma study region, as well as limited wave-tide observations. In addition, a drogue study was conducted to determine Lagrangian velocities and diffusion. Regional wind data were utilized in the synthesis of the current data, and hydrographic data, collected in the biological study, were also displayed and interpreted in light of the regional and local discharge patterns. Chemical sampling was conducted quarterly at three study sites (West Hackberry, West Hackberry Control and Big Hill), and emphasized the delineation of trace metal and high molecular weight hydrocarbon concentrations in the water column (dissolved and particulate), sediments (pore water and leachable), and selected biota. Nutrients in the water column and in sediment pore waters were also determined on the quarterly cruises. Sediment texture was determined for all sediment samples and utilized to determine trends in trace metal and hydrocarbon concentrations. Biological sampling was conducted monthly except for February 1978 at five Texoma study sites and included hydrography, near surface and near bottom nutrient, phytoplankton and zooplankton concentrations, sediment texture, organic carbon and carbonate carbon concentrations and meiobenthos, megabenthos, and nekton densities. Univariate and multivariate analyses were used extensively to show trends within and between biological populations, communities, and the dimensions of the abiotic environment.
KEYWORDS: Louisiana; Texas; coastal waters; physical; geology; biology; chemistry; Strategic Petroleum Reserve;

00307
Compton, H. 1965. A survey of shrimp populations in the inshore Gulf of Mexico off Texas, p. 132-168. In Texas Parks Wildl. Dept., Coastal Fisheries Branch, Proj. Rep. 1965, Proj. No. MS-R-7.

ABSTRACT: In 1965, shrimp and associated bottom organisms were sampled for type, abundance, size, and seasonal availability with a 25-ft flat otter trawl in the Gulf of Mexico off Port Aransas, Port Mansfield, Port Isabel, and Galveston. In regular weekly samples, commercial shrimp of four species, non-commercial shrimp of seven species, two species of squid, and various associated animals were caught in 100 trawl samples.
KEYWORDS: Texas; coastal waters; biology; fisheries; shrimp;

00308
Condrey, R.E.; Turner, R.E.; Rouse, L.J.; Shaw, R.F.; Wiseman, W.J. 1982. Evaluation of the brine disposal from the West Hackberry site: the regional impact on menhaden resources: final report: Volume 1, Chapters 1-8, Addenda 1-2. Report to Department of Energy, Washington, DC. Rep. No. DOE/PO/10313-T-V.1. 157 p. Contract No. FC96-81PO10313. NTIS order No. DE87004200/XAB.

ABSTRACT: A complete assessment of the impact of brine discharge from the Strategic Petroleum Reserve project on the menhaden fishery of the Gulf of Mexico requires an understanding of the distribution of menhaden eggs and larvae over the Louisiana shelf as well as a knowledge of the mechanisms that transport the larvae into the estuaries. This study identifies sources of menhaden eggs and larvae and determines the processes controlling larval transport and distribution across the shelf and into the estuaries.
KEYWORDS: Louisiana; biology; chemistry; environmental impact; fish; menhaden; brine disposal; chlorophyll; nutrient; wind; plankton; Strategic Petroleum Reserve;

00309

Conner, W. 1977. Public administration of Louisiana's coastal wetlands: 1820 to 1976. Louisiana Sea Grant Pub. No. LSU-T-77-001. 75 p.

ABSTRACT: Analyzes the development of water control practices in coastal Louisiana and discusses the roles of a large number of federal and state agencies that have been involved in water control activities since the early 1800s.
KEYWORDS: Louisiana; estuary; marsh; biology; geology; physical; ecology; management;

00310

Conner, W.H. 1977. Public administration of Louisiana's coastal wetlands: 1820 to 1976. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-T-77-001.

ABSTRACT: This report traces the development of wetland management and the present permitting practices in coastal Louisiana. Of the various state and federal agencies that have been involved in water control activities, the U.S. Army Corps of Engineers and the Louisiana Wildlife and Fisheries Commission have emerged as the main agencies of control. The Corp's New Orleans Office issues more than half of all U.S. dredging permits. The number of permits has doubled since passage of the Federal Water Pollution Control Act Amendment of 1972. The intensity and location of permit actions in 1970 and 1974 were examined by plotting the location of each permit on 1:250,000 orthophotomosaics. Computer analysis of permit information showed that the greatest concentration of permits exits in the Terrebonne and Barataria management units. The steadily increasing dredging activity converted 2,835 acres of wetland to open water in 1974. The 1974 Constitution mandated consolidation of numerous management functions in a Office of Coastal and Marine Resources. This may strengthen future efforts to sustain multiple use and productivity of renewable coastal resources.
KEYWORDS: Louisiana; marsh; socioeconomics; oil and gas; dredging;

00311

Conner, W.H.; Day, J.W., Jr. [ed.]. 1987. The ecology of Barataria Basin, Louisiana: an estuarine profile. U.S. Fish Wildl. Serv. Biol. Rep. 85(7.13). 165 p.

ABSTRACT: The Barataria Basin lies entirely in Louisiana between the natural levees of the active Mississippi River and the abandoned Bayou Lafourche distributary. It is characterized by a network of interconnecting water bodies that allows transport of water, materials, and migrating organisms throughout the basin. Natural and artificial levees and barrier islands are the only high, well-drained ground in the basin, which is otherwise characterized by extensive swamp forests and fresh, brackish, and salt marshes. These wetlands and water bodies are extremely productive biologically and provide valuable nursery habitat for a number of commercial and recreational fish and shellfish, as well as habitat for wintering waterfowl and furbearers. The basin is a dynamic system undergoing constant change because of geologic and human processes. The network of bays, lakes, and bayous has gradually enlarged over time due to natural subsidence and erosion. Superimposed on these natural processes has been the construction of levees for flood control and a network of canals constructed for oil and gas exploration and extraction. These human activities have altered natural hydrologic patterns in the basin and may directly or indirectly contribute to wetland losses. Controlling wetland deterioration in the basin is a major management concern.
KEYWORDS: Louisiana; estuary; marsh; barrier island; Barataria Bay; Mississippi River Delta; biology; ecology; geology; physical; chemistry; oil and gas; vegetation; nutrient; plankton; wildlife; benthos; fish; environmental impact;

00312

Conser, R.J.; Beardsley, G.L. 1980. An analysis of billfish catch and effort data from the recreational and longline fisheries in the northern Gulf of Mexico. Collect. Vol. Sci. Pap. ICCAT Recl. Doc. Sci. CICTA Colecc. Doc. Cient. CICAA, 9(3), 606-619. ICCAT SCRS/79/78.

ABSTRACT: There are several areas along the Atlantic and Gulf coasts of the United States where recreational and longline fishermen compete for billfishes. One area where this occurs most frequently is the northern Gulf of Mexico. Intensive recreational fishing for billfishes takes place from a number of ports from Florida to Texas during the months April through October. During the same period, Japanese longliners fish in the same area for yellowfin and bluefin tunas. Because of these unique attributes, catch and effort data for blue marlin, white marlin, and sailfish from this area are analyzed in order to gain better insight and understanding of the dynamics of this fishery. In particular, the assumptions invoked in many analytical modes that catchability is constant and that there is no interaction between catchability and density are studied for each species. Relative fishing power is computed for those cases where the assumption appears to be valid and indices of abundance are computed.
KEYWORDS: Gulf of Mexico; fisheries; fishery statistics; recreation; fish;

00313
Conte, F.S.; Duronslet, M.J.; Clark, W.H.; Parker, J.C. 1977. Maturation of Penaeus stylirostris (Stimpson) and P. setiferus (Linn.) in hypersaline water near Corpus Christi, Texas. Proc. World Maricult. Soc. 8:327-334

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; shrimp; physiology; salinity;

00314
Continental Shelf Associates, Inc. 1980. Video and photographic reconnaissance of Phleger and Sweet Banks, northwest Gulf of Mexico. Report to Bureau of Land Management, Washington, DC. Contract No. AA551-CT9-36. 20 p.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; reef; geology; biology;

00315
Continental Shelf Associates, Inc. 1981. A state-of-the-art review of environmental monitoring technology for offshore oil and gas operations. Report for Mobil Oil Canada, Ltd., Calgary, Alberta, Canada. 75 p. + app.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; oil and gas; chemistry; biology; drilling fluid; cuttings; environmental impact;

00316
Continental Shelf Associates, Inc. 1982. Study of the effect of oil and gas activities on reef fish populations in the Gulf of Mexico OCS area. Report to the Bureau of Land Management, New Orleans, LA. Contract No. AA551-CT9-36. 2 vol.

ABSTRACT: None
KEYWORDS: Louisiana; biology; coastal waters; petroleum platform; continental shelf; reef; oil and gas;

00317
Continental Shelf Associates, Inc. 1983. Environmental monitoring program for exploratory well No. 3, lease OCS-G 3316, Block A-384, High Island Area, South Extension near the West Flower Garden Bank. Report to Union Oil Company of California, Houston, TX. 191 p. + app.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; Flower Garden Banks; oil and gas; chemistry; physical; biology; environmental impact; benthos; reef; drilling fluid; cuttings; trace metal; current;

00318
Continental Shelf Associates, Inc. 1984. Impact reconnaissance following an anchoring incident at the East Flower Garden Bank coral reef. Report to Union Exploration Partners, Houston, TX.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; Flower Garden Banks; reef; environmental impact; benthos; shipping;

00319
Continental Shelf Associates, Inc. 1985. Environmental monitoring program for exploratory well No. 1, lease OCS-G 6281, East Breaks area block 166 near Applebaum Bank. Report to Texaco U.S.A., New Orleans, LA. 105 p. + app. (see also addendum dated 31 January 1986).

ABSTRACT: None
KEYWORDS: Texas; continental shelf; reef; oil and gas; biology; chemistry; environmental impact; trace metal; benthos;

00320
Continental Shelf Associates, Inc. 1985. Environmental monitoring program for Platform "A", lease OCS-G 2759, High Island Area, South Extension, East Addition, Block A-389 near the East Flower Garden Bank. Report to Mobil Producing Texas & New Mexico, Inc. 353 p. + app.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; Flower Garden Banks; oil and gas; chemistry; physical; biology; environmental impact; benthos; reef; drilling fluid; cuttings; trace metal; current;

00321
Continental Shelf Associates, Inc. 1986. Environmental monitoring program for exploratory well No. 1, lease OCS-G 6613, West Cameron area block 663 near Rankin Bank. Report to Texaco U.S.A., New Orleans, LA. 73 p. + app.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; reef; oil and gas; biology; chemistry; environmental impact; trace metal; benthos;

00322
Continental Shelf Associates, Inc. 1987. Fate and effects of drilling fluid and cutting discharges in shallow, nearshore waters. Phase I report. Report to the American Petroleum Institute, Washington, DC. 40 p. + app.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; continental shelf; oil and gas; biology; chemistry; trace metal; hydrocarbon; benthos; environmental impact; drilling fluid; cuttings;

00323
Corcoran, E.F.; Curry, R.W. 1978. Phthalic acid esters in the marine environment. Rev. Biol. Trop. 26(Suppl. 1):125-33.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Mississippi River; chemistry; sediment; phthalate;

00324
Corliss, J.; Trent, L. 1971. Comparison of phytoplankton production between natural and altered areas in West Bay, Texas. Fish. Bull. 69:829-832

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; plankton; primary production;

00325
Costanza, R.; Neill, C.; Leibowitz, S.G.; Fruci, J.R.; Bahr, L.M.; Day, J.W., Jr. 1983. Ecological models of the Mississippi Deltaic Plain region. Data collection and presentation. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/68. 342 p.

ABSTRACT: This technical report consists of quantified ecosystem models with input-output matrices of the biology, hydrology, geology, and socioeconomics of the major habitats of the Mississippi Deltaic Plain Region. The quantitative framework characterizes the region and provides a data base for future ecological models. The habitats modeled are aggregated from those previously identified in the MDPR by Wicker et. al. (1980) according to the classification system of Cowardin et. al. (1979). Detailed descriptions of the biological, physical, and socioeconomic interconnections within this coastal ecosystem allow coastal managers and decision makers to better assess the impacts of human activity on the region's natural resources. It is hoped that future modeling attempts based on the data collected in this report will help predict human impacts on coastal ecosystems and aid in the arduous task of assessing tradeoffs between nonrenewable resource development and renewable resource preservation. This technical report was designed to supplement the companion narrative description of the Mississippi Deltaic Plain Region as the final products in the Mississippi Deltaic Plain Region Characterization Study. Together these two volumes provide both general descriptions and detailed data on the region.
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; biology; ecology; geology; socioeconomics; model;

00326
Cowardin, L.M.; Carter, V.; Golet, F.C.;. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-79/31. 103 p.

ABSTRACT: None
KEYWORDS: estuary; marsh; coastal waters; continental shelf; biology; ecology;

00327
Craig, N.J.; Day, J.W., Jr. 1977. Cumulative impact studies in the Louisiana coastal zone: Eutrophication and land loss. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: An examination of the causes and consequences of eutrophication and land loss in coastal Louisiana.
KEYWORDS: Louisiana; estuary; marsh; biology; geology; nutrient; erosion;

00328
Craig, N.J.; et al. 1987. The natural communities of coastal Louisiana: Classification and description. Louisiana Department of Natural Resources, Louisiana Natural Heritage Program, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; marsh; beach; barrier island; biology; geology; ecology;

00329
Crance, J.H. 1971. The estuarine zone--uses and concerns. Texas A&M Univ. Sea Grant Publ. No. TAMU-SG-71-108. 14 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; marsh; biology; wildlife; fish; bird; water quality;

00330
Creel, M.; Divita, R.C. 1982. Occurrence of (Penaeus) spp. in the stomachs of trawl-caught fishes from the northwestern Gulf of Mexico, 1981. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-87. 22 p. NTIS order No. PB84-114552.

ABSTRACT: During the FRS OREGON II Texas Closure operations between 4 June and 4 July 1981, samples of trawl-caught finfish were obtained. The objectives of the study were to record the number of Penaeus spp. found in trawl-caught fishes and to document shrimp predator species. The stomachs from the trawl-caught fishes were examined for the presence of brown (Penaeus aztecus), white (P. setiferus), and pink (P. duorarum) shrimp. Thirteen brown shrimp were identified from the stomachs of 7598 fish. The collected data were compiled for further examination to determine the impact of fish predation on shrimp stocks and to estimate natural mortality due to predation.
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; biology; fish; shrimp;

00331
Cross, R.D.; Williams, D.L. [ed.]. 1981. Proceedings of the national symposium on freshwater inflow to estuaries. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-81/04. 1,053 p.

ABSTRACT: None
KEYWORDS: estuary; marsh; biology; ecology; chemistry;

00332

Crout, R.L. 1983. Wind-driven, near-bottom currents over the west Louisiana inner continental shelf. Ph.D. dissertation. The Louisiana State University and Agricultural and Mechanical College. 126 p. (Diss. Abs. 44/04-B:1044).

ABSTRACT: Forcing mechanisms and water column response over the West Louisiana Inner Continental Shelf (WLICS) are investigated at various temporal and spatial scales. The major mechanisms that have an effect on shallow-water currents over the WLICS are winds, runoff from the Mississippi and Atchafalaya rivers, and circulation of the northwestern Gulf of Mexico. Summer wind stress values are low and currents generally meander over the inner shelf during this period. A shift in the direction of the regional wind stress in late June causes a reversal in the current direction over the west Louisiana shelf. Autumn currents are primarily westward in response to predominantly westward wind stress. Winter currents are primarily westward, but during frontal passages the current swings rapidly to the east. As winds become easterly, the currents return to their westward set. During the spring the flood on the Mississippi and Atchafalaya rivers introduces a large amount of fresh water into the coastal waters. The fresh water causes density gradients, which decouple near-bottom flow from surface winds and increase the intensity of the westward currents. During the autumn and winter regional-scale cyclonic flow, generated by a succession of cold-front passages, helps to maintain flow over the WLICS in a westward direction. Four periods of frontal passage in 1979 are studied in detail. Strong alongshelf wind stress is common during the January and March frontal periods. An investigation of water column dynamics reveals that the alongshelf wind stress accelerates the water column and generates a frictional boundary layer at the bottom. A strong high pressure system pushes a front across the WLICS from the north during February. Dynamically, low alongshelf wind stress accelerates the water column, but it is not strong enough to establish a frictional balance. An alongshelf pressure gradient also influences the water column dynamics. South-southeasterly winds and freshwater runoff dominate the April frontal period. The alongshelf wind stress accelerates the water column, but no frictional balance is established. A pressure gradient term due to the Atchafalaya flood contributes to the momentum balance.
KEYWORDS: Louisiana; coastal waters; continental shelf; physical; current;

00333

Crout, R.L.; Hamiter, R.D. 1981. Response of bottom waters on the west Louisiana shelf to transient wind events and resulting sediment transport. Trans. Gulf Coast Assoc. Geol. Soc. 31:273-278.

ABSTRACT: The predominantly longshore near-bottom currents in 10 m of water off the southwest Louisiana coast exhibited seasonal variability. Currents in winter were primarily westward, although easterly currents were generated rapidly by cold-front passages. Velocities increased during the spring, and the current motion was to the south-south-west as stratification developed and mechanisms other than the wind become active in the shallow waters. The summer current regime was characterized by slow, easterly motion in response to generally west and southwest winds. Sediments were entrained by wave action and bottom currents during transient wind events, such as summer storms, winter cold-front passages, and persistent south-easterly wind events during the spring. The summer storm and spring wind events transported sediments to the west at a rate of approximately 30 km/day. Sediments suspended in early winter were moved east and west by bottom currents, but little net transport occurred. Frontal passages in March and early April transported suspended sediments more than 250 km to the west. (Author)
KEYWORDS: Louisiana; coastal waters; continental shelf; physical; geology; current; sediment transport; wind;

00334

Crout, R.L.; Wiseman, W.J.; Chuang, W.S. 1984. Variability of wind-driven currents, west Louisiana inner continental shelf: 1978-1979. Marine Science 27:1-11.

ABSTRACT: Two-month summer time series of winds and currents from the west Louisiana inner shelf show little evidence of local wind forging. Longer records from the fall and winter indicate a strong local current response to the winds associated with cold fronts.
KEYWORDS: Louisiana; coastal waters; continental shelf; physical; wind; current;

00335

Crowe, A.; Bryan, C.E. 1987. Trends in composition of the Texas commercial shrimp fleet. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Management Data Series No. 121.

ABSTRACT: A description of the Texas commercial shrimp fleet was developed to determine trends in numbers, size, license classes and home port distribution during the period 1979-1985. The number of commercial shrimp boats increased only 1% while the number of boats holding multiple shrimp boat licenses increased 35% between 1979-1985. The number of licensed shrimp boats increased from 6,889 in 1979 to 7,333 in 1983 then decreased to 6,959 in 1985. The largest decrease (768 boats) during 1979-1985 was in part-time commercial bay boats ($\leq$7.6 m). Out-of-state boats increased from 294 in 1979 to 688 in 1985 with the greatest increase in commercial Gulf vessels ($\geq$16.8 m). Part-time commercial bay boats were most numerous in the Beaumont-Nederland, Houston-Pasadena-Baytown, Seabrook-Kemah-San Leon-Texas City and Corpus Christi areas. Commercial bay boats ($\geq$7.6-16.8 m) were most numerous in the Seabrook-Kemah-San Leon-Texas City, Galveston, Palacios-Port Lavaca-Port O'Connor and Corpus Christi areas. Commercial Gulf vessels were most numerous in the Port Arthur-Sabine Pass, Galveston, Corpus Christi and Brownsville areas.
KEYWORDS: Texas; estuary; coastal waters; fisheries; fishery statistics; socioeconomics; shrimp;

00336

Crowe, A.; McEachron, L.W.; Hammerschmidt, P.C. 1986. Trends in relative abundance and size of selected finfish in Texas bays: November 1975-December 1985. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Management Data Series No. 114.

ABSTRACT: Trends in relative abundance and size of red drum (Sciaenops ocellatus), spotted seatrout (Cynoscion nebulosus), black drum (Pogonias cromis), sheepshead (Archosargus probatocephalus), southern flounder (Paralichthys lethostigma), Atlantic croaker (Micropogonias undulatus), sand seatrout (C. arenarius), gafftopsail catfish (Bagre marinus), Gulf menhaden (Brevoortia patronus), hardhead catfish (Arius felis), pinfish (Lagodon rhomboides), spot (Leiostomus xanthurus), and striped mullet (Mugil cephalus) have been monitored since 1975 using a standardized fishery independent gill net and bag seine sampling program in eight Texas bay systems. Fall and spring gill net catch rates indicate that declines in red drum and spotted seatrout populations have slowed or stopped since the prohibition of sale of these species in September 1981. However, the effect of these regulations has been affected by a coastwide fish kill caused by freezing temperatures during December 1983 and January 1984. Reduced population levels of red drum, spotted seatrout, and black drum following a freeze during 1983-1984 were observed in the 1984 and 1985 spring gill net catch rates and in the annual (1984) bag seine catches. Increases in both red drum and spotted seatrout populations levels were noted in fall 1985 gill net and in 1985 annual bag seine catch rates. Black drum catch rates increased in fall 1985 gill nets whereas 1985 bag seine catch rates remained the same. The impacts of management decisions based on optimum sustained yield, effects of catastrophic events and stock recruitment relationships can be measured by using estimated of relative abundance based on the fishery independent monitoring program.
KEYWORDS: Texas; estuary; biology; fisheries; fishery statistics; drum; seatrout; croaker; flounder; spot; mullet; catfish; menhaden;

00337

Cry, G.W. 1965. Tropical cyclones of the North Atlantic Ocean: Tracks and frequencies of hurricanes and tropical storms, 1871-1963. U.S. Weather Bureau, Tech. Pap. No. 55. 148 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; meteorology; hurricane;

00338

Cry, G.W.; Haggard, W.H.; White, H.S. 1959. North Atlantic tropical cyclones: Tracks and frequencies of hurricanes and tropical storms, 1881-1958. U.S. Weather Bureau Tech. Pap. No. 36. 214 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; meteorology; hurricane;

00339

Culver, S.J.; Buzas, M.A. 1981. Foraminifera distribution of provinces in the Gulf of Mexico. Nature 290 (5804):328-329.

ABSTRACT: Recent benthic foraminifera distribution patterns form the basis of much paleoenvironmental (particularly paleobathymetric) interpretation used by geologists. An analysis of all published data from the Gulf of Mexico is given. To obtain a synthesis of foraminiferal distribution in the Gulf of Mexico, a computerized catalogue of all published occurrences (presence or absence data) was compiled. Cluster analysis of these data isolated 4 large, marginally overlapping areas or provinces exhibiting a spatial correlation with Gulf of Mexico water masses. A 5th, smaller, discrete area (biofacies) was found at the mouth of the Mississippi delta.
KEYWORDS: Gulf of Mexico; biology; geology; foraminifera;

00340

Curray, J.R. 1960. Sediments and history of the Holocene transgression, continental shelf, northwest Gulf of Mexico, p. 221-226. In F.P. Shepard [ed.], Recent sediments, northwest Gulf of Mexico. Am. Soc. Pet. Geol., Tulsa, OK. 394 p.

ABSTRACT: The continental shelf of the northwest Gulf of Mexico, between the Mexican border and the Mississippi Delta, is a smooth, gently sloping sediment- covered plain interrupted by occasional hills or banks. Many of these banks probably represent the surface expressions of salt domes protruding through the sediment cover. The width to the edge of the shelf at about 65 fathoms ranges from 50 to 130 miles. Drowned barriers relict from lowered sea level are found on the nondepositional part of the shelf. The Holocene (Recent) sediments are divided into marine transgressive basal nearshore sands and shelf facies muds (silty clays and clayey silts). The basal sands are exposed at the surface near the shore line and across almost the entire shelf off the Rio Grande, off east Texas, and off western-most Louisiana. The shelf facies overlies the basal facies off central Texas and off most of Louisiana. The thickness of the Holocene Series is probably less than 20 feet in much of the area where the basal facies has not yet been buried under the shelf facies, but is several hundred feet thick on the shelf in the vicinity of the Mississippi Delta. Texturally about half of the surface sediments are polymodal mixtures of thin overlapping sediment masses deposited on the shelf during different periods of postglacial time. The mixing has been by burrowing organisms and the strong wave surges associated with hurricane waves, the former having produced irregularly interlayered and mottled sands and muds and the latter homogeneously mixed polymodal sediments. The sandy sediments are subarkoses everywhere, except off the central Texas coast where they are orthoquartzites. Some of the sediments contain mixed shallow and deeper shelf faunas. Most of the sand-size particles in the outer shelf silty clays are Foraminifera and fragments of echinoids. Glauconite is locally abundant in the relict basal sands of the outer shelf. The sediments on the shelf are the products of the marine transgression flowing the Wisconsin glaciation. The chronology of this transgression has been traced back 17,000years by radiocarbon dates of shells of nearshore organisms. The sequence of events has been interpreted in the light of textural and mineralogical characteristics of the sediments and from the physiography of the drowned barriers of the east Texas shelf area. These ridges, which slope for long distances down the middle and inner shelf at acute angles to the contours, represent barrier spits deposited at the mouths of rivers during brief periods of regression. Two and possibly three periods of temporary regression interrupting the transgression are suggested. One of these, occurring at about the midpoint of the transgression, correlates well with the Two Creeks interstadial and the advance of the Mankato glaciers of North America. The wind pattern appears to have changed during these periods of regression and reversed the current directions in parts of the gulf.
KEYWORDS: Louisiana; Texas; continental shelf; geology; sediment; geologic history;

00341

Custodi, G.L. 1971. A survey of mercury in the Gulf of Mexico. Master's thesis. Texas A&M University, College Station, TX. 141 p.

ABSTRACT: An investigation was made into the distribution of mercury in the Gulf of Mexico. Water and sediment samples were collected at 44 stations and analyzed for mercury content between February and October, 1971.
KEYWORDS: Gulf of Mexico; chemistry; trace metal; sediment; water quality;

00342

Cuzon Du Rest, R.P. 1962. Distribution of the zooplankton in the salt marshes of southeastern Louisiana. Master's thesis. Texas A&M University, College Station, TX. 96 p.

ABSTRACT: A plankton survey was conducted in the salt marshes of southeast Louisiana during a 21 month period beginning in July, 1957. Physical and chemical parameters were measured concurrently and their effects on zooplankton populations were evaluated.
KEYWORDS: Louisiana; marsh; biology; ecology; plankton;

00343

Cuzon du Rest, R.P. 1963. Distribution of zooplankton in the saltmarshes of southeastern Louisiana. Publ. Inst. Mar. Sci., Univ. Texas 9:132-155.

ABSTRACT: A plankton survey was made at 15 stations in the salt water marshes of southeastern Louisiana from July 1959 to March 1961. The physical and chemical parameters including temperature, oxygen, salinity, turbidity and inorganic phosphate, were measured concurrently. In the study area, which ranged form nearly fresh to nearly marine waters, one species of copepod, Acartia tonsa, dominated the zooplankton with 145,000 per five minute haul and was abundant throughout the year. There were few other populations. Numerically important copepod species were Eurytemora hirundoides, Pseudodiaptomus coronatus, Paracalanus crassirostris, and Oithona spp. Meroplanktonic elements such as nauplii and zoeae of Cirripedia also attained numerical importance. Fresh water and marine faunas were localized and in minor numbers. A major zooplankton outburst occurred in April 1960. No comparable increase was recorded at any other time. Populations were more numerous in open water than in bayou samples. Smallest numbers were found in October.
KEYWORDS: Louisiana; biology; ecology; marsh; plankton;

00344

Daddio, E. 1977. Response of coastal waters to atmospheric frontal passage in the Mississippi Delta region. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Technical Rep. No. 234. 35 p.

ABSTRACT: Two current vector time series obtained in the Mississippi Bight exhibit clockwise polarized currents of near-inertial frequency that are closely associated with shifting winds. Because of the closeness of the local inertial period and the diurnal tidal period, it is difficult at first glance to determine the true nature of the observed rotary currents. However, complex demodulation at the inertial frequency reveals a strong signal accompanying wind shifts that are usually associated with the passage of atmospheric fronts. Spectral analysis for clockwise and counterclockwise frequencies indicates a highly energetic peak in the inertial-diurnal frequency band for the clockwise spectrum. The rotary coefficient computed from the autospectra and quadrature spectrum of the vector components gives CR>0.9 in the vicinity of the inertial-diurnal frequency band. A model using wind stress as a forcing function is highly effective in reproducing sinusoidal oscillations seen in the observed current. These oscillations occur in conjunction with shifts in the wind direction. Because of the close association of the near-inertial oscillations with local wind effects, it is concluded that inertial currents are locally induced by wind stress. Furthermore, wind stress not only initiates the rotary currents by is also highly effective in destroying them.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; physical; current; meteorology; wind;

00345

Daddio, E.; Evans, D.J. 1982. Application of a numerical wind-driven model in hindcasting storm-generated current velocity profiles. In Proceedings, 1982 Offshore Technology Conference, Houston, TX. Paper No. OTC 4324.

ABSTRACT: In order to adequately account for hydrodynamic forces on an offshore structure under storm conditions, it is necessary to determine the vertical profile of maximum current velocity to which the structure will be subjected. Additionally, the time history of the current velocity profile is required to obtain the currents associated with the largest waves. The time-dependent, one-dimensional wind-driven model of Mellor and Durbin represents a significant improvement in hindcasting physically realistic velocity profiles in the upper layer of the ocean where horizontal boundary conditions are not important. It employs a non-constant, stability-dependent eddy viscosity profile of the Richardson number, i.e., depends on the vertical velocity shear and density profile. Three test cases of the model are presented; one involving a storm over a deep continental slope; the second, a storm over the continental shelf region; and a third, a hurricane in deep water.
KEYWORDS: Gulf of Mexico; physical; continental shelf; continental slope; deep sea; current; hurricane; model;

00346

Dagg, M.J. 1984. Temperature, salinity, chlorophyll and nutrient concentrations in Terrebonne Bay, Louisiana from October 1982 to October 1983. Louisiana Universities Marine Consortium, Chauvin, LA. Data Rep. No. 1.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; biology; chemistry; temperature; salinity; chlorophyll; nutrient;

00347

Dames & Moore. 1975. The Louisiana Offshore Oil Port (LOOP) environmental assessment. Louisiana Offshore Oil Port (LOOP), Inc., New Orleans, LA.

ABSTRACT: As part of the LOOP, Inc. environmental assessment, a field study of the offshore mooring site, the onshore storage facility, and the proposed pipeline route was initiated in June, 1973 to continue to May, 1974. The objectives are to describe the ecosystems impacted by the proposed LOOP project, including an environmental inventory. Physical, chemical, and biological parameters are studied. This report deals with the offshore portion of the study.
KEYWORDS: Louisiana; coastal waters; environmental impact; physical; biology; chemistry; pipeline; oil and gas; onshore facilities; shipping;

00348

Danek, L.J.; Tomlinson, M.S. 1981. Currents and hydrography of the Buccaneer Field and adjacent waters, p. 355-385. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; physical; current; Buccaneer Field;

00349
Daniels, K.L. 1977. Descriptions, comparison and distribution of larvae of Cynoscion nebulosus and Cynoscion arenarius from the northern Gulf of Mexico. Master's thesis. Louisiana State University, Baton Rouge, LA. 48 p.

ABSTRACT: This study presents a comparison of spotted seatrout (Cynoscion nebulosus) and sand seatrout (Cynoscion arenarius) in terms of morphological development, pigmentation and osteological development. The specimens examined were taken from 1971 to 1977 on various Oregon cruises.
KEYWORDS: Louisiana; estuary; coastal waters; biology; fish; taxonomy; plankton; seatrout;

00350
Darnell, R.M. 1973. Biology of the Texas coast, p. 70-90. In W.P. James et al. [ed.], Report on the environmental aspects of a supertanker port on the Texas Gulf coast. Texas A&M Univ. Sea Grant Publ. No. TAMU-SG-73-201.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology;

00351
Darnell, R.M. 1976. Bio-energetics study - Gulf of Mexico. Texas A&M University, College Station, TX.

ABSTRACT: The data file represents results of a two year study involving over 150 stations on the northern gulf coast extending from Panama City Florida to Corpus Christi Texas. Samples include benthic fishes and benthic macroinvertebrates.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; continental shelf; coastal waters; biology; benthos; fish;

00352
Darnell, R.M.; Defenbaugh, R.E.; Moore, D. 1983. Northwestern Gulf shelf bio-atlas. A study of the distribution of demersal fishes and penaeid shrimp off soft bottoms of the continental shelf from the Rio Grande to the Mississippi River Delta. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. Open File Rep. No. 82-04. 438 p.

ABSTRACT: None
KEYWORDS: Louisiana; Texas; coastal waters; continental shelf; biology; fisheries; ecology; shrimp; fish;

00353
Darnell, R.M.; Williams, A.B. 1956. A note on the occurrence of the pink shrimp, Penaeus duorarum, in Louisiana waters. Ecology 37(4):844-846.

ABSTRACT: None
KEYWORDS: Louisiana; biology; fisheries; shrimp;

00354
Davies, D.K.; Moore, W.R. 1970. Dispersal of Mississippi sediments in the Gulf of Mexico. J. Sed. Petrol. 40:339-353.

ABSTRACT: Pleistocene and Recent Mississippi sediments possess a distinctive heavy mineral assemblage which retains its identity between Cairo, Illinois and the Gulf of Mexico Abyssal Plains. Thus this assemblage may be used to trace the Mississippi contribution to the Gulf of Mexico from fluvial, through deltaic, neritic and bathyal, to abyssal environments. Significant changes in the heavy mineral assemblage of sediments in the Gulf are related to source changes and not to the reworking or selective sorting of Mississippi sediments. As a result, three district sediment input sources may be recognized for detrital sediments in the Gulf of Mexico Abyssal Plain: (1) The Mississippi, (2) the Rio Grande, and (3) the rivers of north-east Mexico. The Mississippi contribution is dominant and is only replaced by other inputs in the northwest and southwest corners of the abyssal plain. On the Louisiana-Texas Inner Continental Shelf, Mississippi sediment forms a veneer which extends between the present delta and the Salbine River. Dredge samples reveal that underlying sediments were derived from the central Texas rivers to the west, probably during a period of regression which occurred between 10,000 and 7,000 B.P. The interaction of a high zircon content and intense selective sorting in the Inner Continental Shelf sediment resulted in two areas of zircon enrichment which may be of economic significance. Because of the insensitivity of the heavy mineral assemblage of the Mississippi contribution to processes of selective sorting and reworking, only 200 non-opaque grains from one size fraction of one sample are needed to characterize this contribution.
KEYWORDS: Gulf of Mexico; Louisiana; Texas; Mississippi River; continental shelf; continental slope; deep sea; geology; sediment; mineralogy;

00355

Davis, D.; Gary, D. 1975. Presence, growth trends and environmental impact of Louisiana's wetlands settlements. Nicholls State University, Thibodaux, LA.

ABSTRACT: A study of the strip settlements in the deltaic plain in six coastal parishes and the impacts of growth on wetlands.
KEYWORDS: Louisiana; marsh; socioeconomics; environmental impact;

00356

Davis, D.D. 1981. Ceramic classification and temporal discrimination: A consideration of later prehistoric stylistic change in the Mississippi River Delta. Mid-Contin. J. Archaeology 6:55-91.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; archaeology; prehistoric;

00357

Davis, D.W. 1982. Economic and cultural consequences of land loss in Louisiana, p. 140-158. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences, and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: Louisiana's coastal lowlands are facing a serious dilemma. The problem is related directly to man's interference with the Mississippi River's flow regime and the effects of erosion induced by natural processes--winds, waves, currents, and tides. As a result, the wetlands are out of balance. Progradation has been superseded by erosion with land disappearing at an alarming rate. Approximately 103.6 km*2*/yr (40 mi**2/yr) are being destroyed-- changing from barrier island and protected marshes to open water. The next 200 years are critical, since a large portion of Louisiana's coastal zone will be eroded away. In the process an important nursery ground and habitat for migratory waterfowl, fur and hide-bearing animals and fisheries will be lost. "High" land, already scarce, will be at a premium and the cumulative economic effect will be measured in the billions of dollars. New Orleans will lose its natural defense against a hurricane-induced storm surge. With parts of the "Crescent City" 6.1 m (20 ft) below sea level, it cannot afford to be at the mercy of an unimpeded tropical cyclone. Without the surrounding marshes, the first line of defense will have vanished. Trappers will lose the habitat preferred by muskrat and nutria. The Nation's preeminent fur-producing region, producing from $2 million to $24 million in annual pelt sales, will be gone. Additional renewable resources, such as shrimp, oysters, crab, and menhaden, worth hundreds of millions of dollars annually, will no longer have a habitat that supports more than 25% of the country's commercial fisheries. Concomitant with the decline in these industries will be the partial demise of the nearly $200 million recreational industry. Probably the most important single loss to the State will be Louisiana's land/water boundary. As this line retreats, the limit of Louisiana's offshore zone moves shoreward. The end result is the forfeiture of millions of dollars in oil royalties--at least $20 million for each mile of coastal retreat. Further, the multibillion dollar infrastructure associated with the petroleum industry also faces the loss of valuable "high" ground; thus a number of favorable advantages of living and working in Louisiana are changed. Unique lifestyles will also be altered or lost. Centuries-old traditions will die. The cultural heritage of the region will be diluted and the economic resources responsible for billions will be gone. The question is: "Can we afford the loss of Louisiana's wetlands?"
KEYWORDS: Louisiana; marsh; erosion; socioeconomics; fisheries; oil and gas; wildlife; ecology; recreation;

00358

Day, J.W., Jr.; Craig, N.J. 1982. Comparison of effectiveness of management options for wetland loss in the coastal zone of Louisiana, p. 232-239. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana:Causes, Consequences, and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: The coastal wetlands of Louisiana, an area of 14,000 km2 (5,400 mi2), are currently experiencing an overall net loss of approximately 130 km2/yr (50 mi2/yr). Various management options have been suggested to combat the problem of wetland loss. This paper examines the effectiveness of three management options: (1) management of the current land building of the Atchafalaya River, (2) controlled diversion schemes on the lower Mississippi River and (3) strict regulatory control of canals within the coastal zone. Strict regulatory control of new canals could reduce future land loss rate by 30 to 40 km2/yr. This compares with 1 to 3 km2/yr for controlled diversion plans, and 18 km2/yr for the land-building processes of the Atchafalaya River. If the problem of wetland loss is to be properly addressed by regulatory agencies, they must make a serious attempt to control canal construction.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; marsh; geology; erosion; dredging; environmental impact;

00359
Day, J.W., Jr.; Smith, W.G.; Wagner, P.R.; Stowe, W.C. 1973. Community structure and carbon budget of a salt marsh and shallow bay estuarine system in Louisiana. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-SG-72-04.

ABSTRACT: The coastal zone of Louisiana comprises more than 7 million acres of marshes and estuaries, representing about 40% of the total coastal marsh area of the 48 contiguous United States. Partly as a result of this large estuarine zone, total fisheries are in excess of 1 billion pounds annually and rank first in the United States. This paper is a description of Barataria Bay, one of the estuaries in the coastal zone. The salt marsh, water column and benthic communities are each divided into several subunits. Each of these components is treated in terms of seasonal and spatial variations of abundance, feeding habits, life histories, trophic position and commercial importance. A carbon budget is presented for each of the components and for the whole marsh-estuarine community.
KEYWORDS: Louisiana; Barataria Bay; estuary; marsh; biology; fisheries; benthos; ecology;

00360
de la Cruz, A.A. 1979. Recent advances in our understanding of salt marsh ecology. Mississippi-Alabama Sea Grant Consortium, Ocean Springs, MS. MASGP-79-012. 65 p.

ABSTRACT: Our understanding of the ecology of coastal marshes has revolved about the role of this ecosystem as a source and reservoir of energy and nutrients, and as a vital habitat for certain life stages of a number of marine organisms. While recent advances in salt marsh ecology have emphasized the metabolic processes and material fluxes that permeate the marsh-estuary, current research developments are geared towards a better understanding of the marsh as a carbon sink. Thus, investigations of 1) marsh surface productivity, 2) below-ground dynamics, and 3) decomposition processes, may dominate future research developments in salt marsh ecology.
KEYWORDS: Mississippi; coastal waters; marsh; biology; ecology;

00361
de la Cruz, A.A. 1981. Differences between South Atlantic and Gulf Coast marshes, p. 10-20. In R.C. Carey, P.S. Markovits, and J.B. Kirkwood [ed.], Proceedings of the U.S. Fish and Wildlife Service Workshop on Coastal Ecosystems of the United States. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/59.

ABSTRACT: The one factor that determines the biological (plant communities), ecological (primary productivity, food web, energy flow), and chemical (salinity, nutrients) differences between the South Atlantic and Gulf Coast marshes is water--the hydrological processes and hydrodynamic regimes that characterize each region. Gulf Coast marshes are developed primarily on deltaic formations constructed on alluvial deposits created by several major river systems, while the South Atlantic marshes are basically formed on estuarine and lagoonal soft silt deposits bridging the barrier islands and the mainland shorelines. Tides in the South Atlantic (a tidal dominated coast) are normally semidiurnal with fluctuations of more than 2.0 m; meteorological phenomena are more stable with fewer events of major storm surges. In the Gulf, tides are generally diurnal with maximum fluctuation of 0.3 m; but during periods of lowest fluctuations, tides can change over to very weak semidiurnal occurrences. Prevailing local weather conditions, the occurrence of seasonally changing major wind directions, high energy summer tropical storms, and Gulf basin natural oscillations complicate the hydrodynamics of the Gulf marsh system. The peculiar hydrology of the Gulf Coast (a wave dominated coast coupled with the great freshwater input dominated by the Mississippi River) influences salinity producing a more diverse vegetation structure and seasonal fluxes of material into the Gulf Coast marsh-estuary.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; marsh; biology; ecology;

00362
Deegan, L.A.; Johnson, B.; Gosselink, J.G.; Day, J.W., Jr. 1982. Comparison of sources and timing of primary production with implications for fisheries in five Gulf of Mexico estuaries. Atlantica 5(2):36. Special issue. International Symposium on Utilization of Coastal Ecosystems: Planning, Pollution and Productivity. Rio Grande (Brazil) 22 Nov 1982. (Summary only.).

ABSTRACT: Physical variables were related to the type, area, seasonal patterns and total productivity of estuarine systems across the Gulf of Mexico. Estuaries included in this analysis are: (1) Laguna Madre, Texas (2) Galveston Bay, Texas (3) Lake Pontchartrain, Louisiana, (4) Charlotte Harbor, Florida, and (5) Rookery Bay, Florida. All estuaries show seasonal patterns of sources and quantities of production related to physical variables of climate and hydrology. Mangroves and seagrasses dominate productivity in South Florida with peaks in late summer and early fall. Juncus marshes replace mangroves in north Florida changing to Spartina marshes in Louisiana and west Texas. Seagrasses and aquatic productivity dominate in Laguna Madre. Aquatic primary production rates are higher near river mouths (1-2 gC/m(2)/day) declining towards the Gulf (0.1-0.7 gC/m(2)/day), but because of areal extent changes contribution to total productivity remains fairly constant.
KEYWORDS: Florida; Louisiana; Texas; Laguna Madre; Galveston Bay; estuary; physical; biology; marsh; seagrass; ecology;

00363

Deevey, E.S. 1950. Hydroids from Louisiana and Texas, with remarks on the Pleistocene biogeography of the western Gulf of Mexico. Ecology 31(3):334-367.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; biology; biogeography;

00364

Defenbaugh, R.E. 1976. A study of the benthic macroinvertebrates of the continental shelf of the northern Gulf of Mexico. Ph.D. Dissertation. Texas A&M University, College Station, TX. 476 p.

ABSTRACT: The present study details the occurrence and distribution of the macroinvertebrates of the continental shelf of much of the Gulf of Mexico. The primary study area is the northern Gulf, between Corpus Christi, Texas, and Pensacola, Florida; some information is also provided on the fauna of the Mexican coast, between the mouth of the Rio Soto la Marina, Tamaulipas, and Progreso, Yucatan. The study is based on collections from 146 trawl samples, mostly collected in the depth range of 18 to 183 m. Approximately 50,000 specimens were collected and processed. These represent 356 species in 261 genera and 161 families, and include sponges (10 species), coelenterates (41 species), worms (26 species, in 5 phyla), molluscs (116 species), arthropods (113 species), echinoderms (30 species), ectoprocts (9 species), and urochordates (11 species). Essentially all species are synoptically described, with pertinent comments on distribution and natural history, and are photographically illustrated. Literature pertaining to the fauna and physical characteristics of the Gulf of Mexico is reviewed and discussed. Based upon the results of the present study, the published literature, and unpublished reports, twelve faunal assemblages characteristic of the northern Gulf, from Brownsville, Texas, to Tampa Bay, Florida, in the depth range of 4 to 200 m are proposed. These assemblages are: (a) inner shelf assemblage, Texas-Louisiana shelf (4-20 m); (b) pro-delta fan assemblage (4-20 m); (c) pro-delta sound assemblage (4-20 m); (d) inner shelf assemblage, West Florida shelf (4-20 m); (e) intermediate shelf assemblage, Texas-Louisiana shelf (20-60 m); (f) intermediate shelf assemblage, West Florida shelf (20-60 m); (g) outer shelf assemblage, Texas-Louisiana shelf (60-120 m); (h) outer shelf assemblage, West Florida shelf (60-120 m); (i) upper slope assemblage, Texas-Louisiana shelf (120-200 m); (j) upper slope assemblage, West Florida shelf (120-200 m); (k) submarine bank assemblage, Texas-Louisiana shelf (20-100 m); and (l) Florida Middle Grounds assemblage, (30-60 m). Physical characteristics, geographic extent, and fauna characteristics of each assemblage are briefly described.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; continental shelf; biology; ecology; benthos; taxonomy;

00365

DeLaune, R.D.; Baumann, R.H.; Gosselink, J.G. 1983. Relationships among vertical accretion, coastal submergence, and erosion in a Louisiana Gulf coast marsh. J. Sed. Petrol. 53:147-157.

ABSTRACT: None
KEYWORDS: Louisiana; marsh; geology; erosion; sedimentation;

00366

DeLaune, R.D.; Patrick, W.H.; Brannon, J.M. 1976. Nutrient transformations in Louisiana salt marsh soils. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-T-76-009. 38 p.

ABSTRACT: Louisiana's Barataria Bay salt marsh can be considered a chemical system in the broadest sense. Chemical and microbiological oxidation-reduction (redox) processes occurring in marsh soils influence plant rhizosphere conditions and the availability of plant nutrients. The lack or deficiency of oxygen results in the predominance of reduction processes that create an anaerobic plant root zone. Reduced forms of iron, manganese, nitrogen, and sulfur predominate. Organic matter decomposition is not as rapid nor as complete as under aerated conditions, and organic acids and other toxic substances are present. Marsh plants have specialized gas transport systems that enable them to obtain atmospheric oxygen internally. In addition to the ability to obtain oxygen, the adaptability of plant species to such an environment is determined by their ability to tolerate or neutralize toxic conditions brought on by anaerobic conditions as well as by additional constraints such as salinity and temperature.
KEYWORDS: Louisiana; Barataria Bay; estuary; marsh; chemistry; biology; nutrient;

00367

DeLaune, R.D.; Smith, D.J.; Patrick, W.H. 1983. Nitrogen losses from a Louisiana Gulf Coast salt marsh. Estuar. Coast. Shelf Sci. 17:133-141.

ABSTRACT: Losses of 15N labelled nitrogen in a Spartina alterniflora salt marsh was measured over three growing seasons. Labelled NH4+-N equivalent to 100 g-1 of dry soil was added in four installments over an eight week period. Recovery of the added nitrogen ranged from 93 percent 5 months after addition of the NH4+-N to 52 percent at the end of the third growing season which represented a nitrogen loss equivalent to 34 g N m-2. The availability of the labelled NH4+-N incorporated into the organic fraction was estimated by calculation of the rate of mineralization. The time required for mineralization of 1 percent of the tagged organic N increases progressively with succeeding cuttings of the S. alterniflora and ranged from 152 to 299 days. Only 2 percent of the nitrogen applied as 15N labelled plant material to the marsh surface in the fall could be accounted for in S. alterniflora the following season.
KEYWORDS: Louisiana; marsh; chemistry; nutrient; nitrogen;

00368

Demas, C.R. 1977. Analyses of native water, core material, and elutriate samples collected from the Atchafalaya River and Atchafalaya Bay. U.S. Geological Survey, Open-File Rep. 77-769.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Atchafalaya River; geology; chemistry; sediment;

00369

Demas, C.R. 1983. Hydrology, water quality, and biology of Baptiste Bayou in relation to the lower Mississippi River of Venice, Louisiana. U.S. Geological Survey, Tech. Rept. No. 31. 49 p.

ABSTRACT: Water quality, including suspended sediment, fecal and pathogenic bacteria, and benthic invertebrates were analyzed from samples collected from Baptiste Collette Bayou distributary and the Mississippi River at Venice, July 1980 to April 1982 to determine what factors influence water quality and the distribution of bacterial and benthic invertebrate populations within the stream system. Flow ranged from 22,700 cubic feet per second to 26,600 cubic feet per second near the head of Baptiste Collette Bayou for corresponding flows of 342,000 cubic feet per second to 530,000 cubic feet per second for the Mississippi River at Tarbert Landing. Flow in Baptiste Collette Bayou is distributed unequally between three passes, with approximately 42 percent of the discharge going down Main Pass, 24 percent down Kimbel Pass, and 34 percent down Emeline Pass. Water samples from Baptiste Collette Bayou and the Mississippi River were similar in composition and concentrations during periods of moderate flows in the Mississippi River. Concentrations of major ions such as calcium, magnesium, and chloride were higher in bayou samples than river samples during periods of saltwater intrusion in the river. Concentrations of minor elements and water pesticides were low for both river and bayou samples.
KEYWORDS: Louisiana; Mississippi River; estuary; biology; physical; chemistry; salinity; pesticide; water quality; benthos;

00370

Denes, T.A.; Bayley, S.E. 1983. Long-term rainfall, runoff, and discharge in the Atchafalaya River basin, Louisiana. Proc. La. Acad. Sci. 46:114-121.

ABSTRACT: Several components of the water budget for the Atchafalaya River basin are presented using 42 years of record (1940-1981). The mean annual rainfall, direct land runoff, and Atchafalaya River discharge at Simmesport were 226, 115, and 5,701 m super(3)/s, respectively, during this period. Although precipitation may be seasonally heavy, direct land runoff never contributes more than 6% to the total water flowing to the Gulf of Mexico.
KEYWORDS: Louisiana; Atchafalaya River Delta; physical; meteorology;

00371
Department of Energy, Office of Strategic Petroleum Reserve. 1981. Strategic Petroleum Reserve Phase III Development: Texoma and Seaway Group Salt Domes (West Hackberry and Bryan Mound Expansion, Big Hill Development), Cameron Parish, Louisiana, and Brazoria and Jefferson Counties, Texas. Draft Supplement to Final Environmental Impact Statement. Department of Energy, New Orleans, LA. Strategic Petroleum Reserve Project Management Office. 522 p. NTIS order No. DOE/EIS-0075.

ABSTRACT: Potential environmental impacts associated with construction and operation of crude oil storage and distribution facilities are assessed. This document addresses Phase III expansion of the SPR, which would increase the total SPR crude oil storage capacity from 538 to 750 million barrels (MMB) and SPR drawdown capability from 3.5 to 4.5 MMB per day. The preferred alternative would involve development of additional crude oil storage in Cameron Parish, Louisiana, and Brazoria County, Texas, and new storage in Jefferson County, Texas. This development would provide a total 403-MMB of storage for the Texoma Group, and 220 MMB for the Seaway Group. The preferred alternative is expansion of Bryan Mound by 40 MMB and West Hackberry by 30 MMB and development of a new 140-MMB site at Big Hill salt dome in Jefferson County, Texas. Alternatives considered include no action, expansion of other SPR sites, and development of new sites at (1) other Gulf Coast salt domes, (2) salt domes off the coasts of Texas and Louisiana, (3) inland salt domes in northern Louisiana, Mississippi, and Alabama, and (4) conventional mines.The analysis of the Big Hill site also considers alternative crude oil terminals, pipeline routes, and brine disposal sites. Among the environmental impacts analyzed are potentially significant impacts on local surface water quality, floodplains and wetlands, air quality, endangered and threatened species, natural and scenic resources, archaeological, historical and cultural resources, socioeconomics, flora and fauna of the Gulf Coast area, and biota of the Gulf of Mexico.
KEYWORDS: Louisiana; Texas; coastal waters; oil and gas; biology; chemistry; physical; geology; socioeconomics; archaeology; air quality; water quality; environmental impact; Strategic Petroleum Reserve;

00372
DeWald, O.E. 1980. Severe storm and hurricane impacts along the Gulf and lower Atlantic coasts. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 10 p.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; coastal waters; hurricane; meteorology; physical;

00373
Diaz, F.R. 1983. SEAMAP marine directory. Gulf States Marine Fisheries Commission, Pascagoula, MS.

ABSTRACT: The Southeast Area Monitoring and Assessment Program (SEAMAP) is a cooperative state/Federal/university program for collection, management, and dissemination of fishery-independent data (data collected without direct reliance on any commercial or recreational fishery) and information on the southeast region.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; biology; fisheries; fishery statistics;

00374
Diaz, R.J. 1982. Habitat suitability index models: juvenile Atlantic croaker. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/10.21. 22 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; ecology; fish; fisheries; model; croaker;

00375
Diener, R.A. 1965. Texas estuaries and water resource development projects, p. 25-31. In Proceedings of the ninth annual conference on water for Texas, 1964. Texas A&M University, College Station, TX.

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; ecology; chemistry;

00376
Diener, R.A. 1973. Observations on the hydrology and marine organisms of the tidal Colorado River and adjacent waters, Texas, February-June 1962. Contrib. Mar. Sci. 17:99-110.

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; physical;

00377

Diener, R.A. 1975. Cooperative Gulf of Mexico estuarine inventory and study -- Texas: area description. NOAA Tech. Rept. NMFS Circ-393. 129 p.

ABSTRACT: Seven Texas estuarine areas are described in terms of their dimensions, major vegetation types; geology and geologic history; drainage basins and stream discharge records; hydrological, biological, and benthic properties; population and economic development; pollution; and navigation projects.
KEYWORDS: Texas; estuary; biology; geology; physical; environmental impact;

00378

Diener, R.A.; Inglis, A.; Adams, G.B. 1974. Stomach contents of fishes from Clear Lake and tributary waters, a Texas estuarine area. Contrib. Mar. Sci. 18:7-18

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; fish; ecology;

00379

DiMego, G.J.; Bosart, L.F.; Endersen, G.W. 1976. An examination of the frequency and mean conditions surrounding frontal incursions into the Gulf of Mexico and Caribbean Sea. Mon. Weather Rev. 104(709-718).

ABSTRACT: Maps of mean monthly frequency and duration of frontal incursions into the Gulf of Mexico and Caribbean Sea are presented for the 1965-72 period. The transition from the low-frequency regime of summer to the high-frequency regime of winter is quite sharp in the fall, occurring between September and October. A more gradual decrease in activity occurs in spring. During the cooler months, relative maxima in frequency exist over the western Gulf of Mexico and east of Florida, while an arch-shaped region of maximum duration extends northeastward from the Yucatan Peninsula into the central Caribbean. The frequency along the north coast of the Greater Antilles with a second maximum in the central Caribbean. The frequency and degree of penetration of cold fronts are directly related to topographic features and the position, strength and amplitude of the mid-latitude circulation. Time-sections centered around the time of frontal passage are used to present mean data for three regions. Tropical stations experience veering winds, rising temperatures, falling pressures, and increasing moisture content in the 1000-700 mb layer as fronts approach the area in winter. The stability of the atmosphere decreases and the trade-wind inversion is lifted and weakens in intensity. After the passage of the front, cold advection, subsidence and ridging produce an abrupt reversal of all these trends. A composite-case study shows that the depth of cold air to the rear of the front decreases southward and is accompanied by the development of a low-level anticyclone over the Gulf coast. Ahead of the front, the combination of an inverted trough in the central Caribbean and the subtropical anticyclone in the Atlantic produces a return flow of warm, moist tropical air into mid-latitudes.
KEYWORDS: Gulf of Mexico; physical; meteorology; wind;

00380

Dinnel, S.P.; Wiseman, W.J. 1986. Fresh water on the Louisiana and Texas shelf. Cont. Shelf Res. 6(6):765-784.

ABSTRACT: Hydrographic data collected on monthly cruises over the West Louisiana and Texas shelf from 1963 to 1965 were analyzed and the volume of fresh water on the shelf was estimated for each data set. The freshwater volume exhibits an annual cycle that is dominated by the spring flood of the Mississippi and Atchafalaya rivers. During the winter, shelf freshwater content is low, with the highest content appearing as a discontinuous band along the inner shelf. In summer an isolated high-content region is present in the center of the shelf. This high-content region dissipates and the pattern migrates toward the southeast in the late summer. By late fall the winter distribution is again present. A fill time for the freshwater volume on the shelf was also estimated for each cruise. The freshwater volume appears, in most cases, to have originated near the time of previous spring flood. Two of the study years had river discharges well below the long-term mean, while the third-year discharge approximated the long-term mean. These results, then, may not be applicable to large-discharge years.
KEYWORDS: Louisiana; Texas; physical; continental shelf; coastal waters; salinity;

00381

Ditton, R.B.; Auyong, J. 1984. Fishing offshore platforms central Gulf of Mexico: An analysis of recreational and commercial fishing use at 164 major offshore petroleum structures. U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Office, New Orleans, LA. Rep. No. MMS-GM-PT-84-002. OCS Mono. MMS-84/0006. 157 p. NTIS order No. PB84-216605.

ABSTRACT: This monograph reports on offshore fishing patterns derived from data collected in 1980-1981 on the fishing use directly associated with several hundred oil and gas production platforms located from 3 to more than 100 miles off the coast of Louisiana. Insight is provided into the relative abundance of platform fishing activity by major fishing group (private boats, charter and party boats, scuba boats, commercial boats, and offshore workers), home state of boat fishermen, where they go (depth and distance) when they fish, how they fish, and what species constitute their principal catch. By subdividing the study area into three analysis zones, the investigation effectively shows that demographics, transportation, access, shelf characteristics, and the interrelationship of these factors influence the amount and location of offshore "rig" fishing.
KEYWORDS: Louisiana; coastal waters; continental shelf; fisheries; recreation; petroleum platform; fishery statistics;

00382

Ditton, R.B.; Graefe, A.R. 1978. Recreational fishing use of artificial reefs on the Texas coast. Texas A&M University, College Station, TX. 155 p.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; fisheries; socioeconomics; reef; recreation;

00383

Ditty, J.G. 1986. Ichthyoplankton in neritic waters of the northern Gulf of Mexico off Louisiana: Composition, relative abundance, and seasonality. Fish. Bull. 84 (4):935-944.

ABSTRACT: Ichthyoplankton samples were collected monthly between November 1981 and October 1982 in neritic continental shelf waters off Louisiana. At least 48 families of fishes were represented in samples that included 107 taxa, 54 of which were identified to species. Larval densities were lowest during the winter and highest during the summer with a mean monthly density of 208/100 m(3). Five families accounted for about 90% of total larvae: Engraulidae, Sciaenidae, Clupeidae, Carangidae, and Bothidae. The five most abundant taxa overall, in order of decreasing abundance, were anchovies (Engraulidae); Atlantic croaker, (Micropogonias undulatus); Atlantic thread herring, Opisthonema oglinum; gulf menhaden, Brevoortia patronus; and Atlantic bumper, Chloroscombrus chrysurus.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; fish; plankton;

00384

Djuric, D.; Damiani, M.S., Jr. 1980. On the formation of the low-level jet over Texas. Monthly Weather Rev. 108(11):1854-1865

ABSTRACT: The low-level jet (LLJ) in the winter half year originates as a south wind over the high plains of Colorado, Kansas, western Oklahoma, and West Texas. After formation, the LLJ spreads horizontally and upstream toward the Gulf of Mexico. The air in the LLJ becomes humid when the entrance to the jet moves to the gulf. The water vapor in the LLJ originates in the nearby waters of the gulf and enters Texas within the tropical air mass, which has a recent (1-3 day) polar origin. A mature LLJ often has multiple maxima of the wind speed.
KEYWORDS: Texas; physical; meteorology; wind;

00385

Dobie, J.L.; Ogren, L.H.; Fitzpatrick, J.F. 1961. Food notes and records of the Atlantic ridley turtle (Lepidochelys kempi) from Louisiana. Copeia 1:109-110.

ABSTRACT: The diets of two specimens of the atlantic Ridley Turtle from the Tulane University Museum were examined and found to contain molluscs and crustacean fragments. All specimens on this study were collected from Louisiana coastal waters.
KEYWORDS: Louisiana; coastal waters; biology; ecology; turtle; endangered species;

00386

Dodson, J.K.; LeBlanc, L.A. 1988. Exploration drilling rate remains high across Gulf. Offshore (May 1988) 48(5):71-76.

ABSTRACT: This article provides statistics on the number of exploratory and development wells drilled in the Gulf of Mexico during 1983-1988, broken down by location (Louisiana, Texas, and MAFLA state waters, as well as the Federal OCS) and well type (oil, gas, or dry hole). Data are also presented on the top operators, the top leasing areas, and the percentages of wells drilled in various water depth ranges for each year.
KEYWORDS: Gulf of Mexico; oil and gas;

00387

Dolton, G.L.; Carlson, K.H.; Charpentier, R.R.; Coury, A.B.; Crovelli, R.H.; Frezon, S.E.; Khan, A.S.; Lister, J.H.; McMullin, R.H.; Pike, R.S.; Powers, R.B.; Scott, E.W.; Varnes, K.L. 1981. Estimates of undiscovered recoverable conventional resources of oil and gas in the United States. U.S. Geological Survey, Geological Survey Circular 860. 87 p.

ABSTRACT: In 1980, the U.S. Geological Survey (USGS) reappraised the undiscovered recoverable conventional resources of crude oil and natural gas in the United States. The assessments of undiscovered recoverable oil and gas were based fundamentally upon analysis and review of the province petroleum geology, exploration history, volumetric-yield determinations, finding-rate studies, and structural analyses. Because of the uncertainty in estimating undiscovered resources, the reported quantities include a range of values that correspond to different probability levels. Subjective probability procedures were used in their derivation. The undiscovered recoverable conventional oil resources for the United States area estimated to range from 64.3 to 105.1 billion barrels with a mean estimate of 82.6 billion barrels. Assessed gas resources range from 474.6 to 739.3 trillion cubic feet with a mean estimate of 593.8 trillion cubic feet. Each range corresponds to 95 percent and 5 percent probabilities of more than the respective amount. When compared with the USGS estimates of 1975, the mean estimate of oil for the entire United States has changed little, whereas the mean estimate of natural gas has increased. In making such a comparison, however, the reader should recognize that resources of the continental slopes are included in the current assessment, but were not included in the 1975 report.
KEYWORDS: United States; continental shelf; continental slope; oil and gas; geology; socioeconomics;

00388

Drennan, K.L. 1968. Hydrographic studies in the northeast Gulf of Mexico. Gulf South Research Institute, Environmental Science and Engineering Laboratories, New Iberia, LA. Technical Rep. 68-0-1. 111 p.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; continental shelf; physical; current;

00389

Drew, L.J.; Schuenemeyer, J.H.; Bawiec, W.J. 1981. Estimation of the future rates of oil and gas discoveries in the western Gulf of Mexico. U.S. Geological Survey, Reston, VA. Rep. No. PP-1252. 32 p. NTIS order No. PB82-236266.

ABSTRACT: The purpose of this study was to devise a model to forecast the rate at which oil and gas fields will be discovered in the study area in the Gulf of Mexico. The study area is off Texas and Louisiana and covers 156,639 sq km in which water depths are as great as 200 m. Making a forecast for this region is more complicated than making a similar forecast for a typical onshore basin. These complications arise because exploration for oil and gas in the Gulf of Mexico has been both geographically and temporally restrained by economic, technical, legal, and philosophy-of-exploration factors.
KEYWORDS: Texas; Louisiana; continental shelf; oil and gas; geology;

00390

Dreyer, C.F. 1973. Some aspects of dissolved and particulate organic carbon in nearshore environments of the Gulf of Mexico. Master's thesis, Florida State University, Tallahassee, FL. 88 p.

ABSTRACT: 32 stations in the Gulf of Mexico between the Mississippi River and south Florida were sampled 4 times during 1972. Water samples were analyzed with a total carbon analyzer for dissolved and particulate organic carbon.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; organic carbon; chemistry;

00391

Dugas, R. 1977. Oyster distribution and density on the productive portion of state seed grounds in southeastern Louisiana. Louisiana Department of Wildlife and Fisheries, Seafood Division, New Orleans, LA. Tech. Bull. No. 23. 27 p.

ABSTRACT: Samples were made throughout the remaining productive "Oyster Seed Grounds" east of the Mississippi River in an effort to determine oyster reef distribution, oyster density on these reefs, environmental conditions influencing this density and distribution, and fishing pressure. The overall reef area determined was approximately 8,917 acres. One hundred and seventy-four square meter diving samples were taken on the reefs throughout the area. Vessel interviews were conducted, and from these weekly, monthly, and yearly estimates of catch were made for various sections of the seed ground. The 1974-1975 season on the "State Oyster Seed Grounds" yielded 675,713 barrels of seed and marketable oysters and the 1975-1976 catch amounted to 732,577 barrels. Monthly bottom isohalines and monthly surface current trends are utilized for providing explanation to oyster distribution and sizes on some of the reefs.
KEYWORDS: Louisiana; biology; fisheries; oyster; reef;

00392

Dugas, R.; Guillory, V.; Fischer, M. 1979. Oil rigs and offshore sport fishing in Louisiana. Fisheries 4(6):2-10.

ABSTRACT: The authors offer a discussion of the function of oil production platforms as artificial reefs for sport fishing. They discuss the effectiveness of the structures as attractive habitat for numerous, otherwise locally unknown sports species. As well, the authors subdivide the oil rigs and associated finfish species into nearshore "green water" and offshore "blue water" assemblages, and present a summary of the dominant and/or most desirable species.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; oil and gas; petroleum platform; fisheries; recreation;

00393

Duke, T.W. 1976. Pesticides in aquatic environments; an overview, p. 1-8. In M.A.Q. Khan [ed.], Pesticides in aquatic environments. Plenum Press, New York.

ABSTRACT: The fate and transportation of pesticides in the aquatic environment are discussed. The food chain relationships and biomagnification through the food chain are diagrammed.
KEYWORDS: biology; chemistry; ecology; pesticide; environmental impact;

00394

Dunlap, J.B. 1979. Applied biostratigraphy, south Louisiana and Gulf of Mexico. In American Association of Petroleum Geologists/Society of Economic Paleontologists & Mineralogists Annual Convention, Houston, Texas 1-4 Apr 79. American Association of Petroleum Geologists; Society of Economic Paleontologists & Mineralogists. Abstracts in program, 12 Mar 1979. Papers in "AAPG Bulletin.".

ABSTRACT: None
KEYWORDS: Louisiana; Gulf of Mexico; geology; stratigraphy;

00395

Ebbesmeyer, C.C.; Williams, G.N.; Hamilton, R.C.; Abbott, C.E.; Collipp, B.G.; McFarlane, C.F. 1982. Strong persistent currents observed at depth off the Mississippi River delta. In Proceedings, 1982 Offshore Technology Conference, Houston, TX. Paper No. OTC 4322.

ABSTRACT: Currents recorded off the Mississippi River delta at the Cognac and OTEC sites for 1.8 years show that mean speeds of 0.9-1.7 foot per second persist at depth (about 300-600 ft) during discrete events. Eleven events lasted an average of 8 days, the longest of which persisted for 25 days; intervals between the events varied between 6-76 days with a mean interval of 30 days; and the events occurred in all seasons. During an event the current direction was steady and oriented either eastward or westward along the bottom contours. The vertical structure of an event can be complex with large changes in speed over short depth ranges. The structure of one event showed an isolated core of maximum current centered near a depth of 600 ft. The events are apparently not related to the passage of cyclones or Mississippi River discharge. Most likely the events are associated with effects of the Loop Current.
KEYWORDS: Louisiana; Mississippi River; physical; current;

00396

Ebeniro, J.O. 1986. Structure and crustal type of the northwestern Gulf of Mexico derived from very large offset seismic data. Ph.D. dissertation. The University of Texas at Austin. 170 p. (Diss. Abs. 47/09-B:3685).

ABSTRACT: Understanding the origin and geologic evolution of the Gulf of Mexico requires a good knowledge of the nature and type of the crust beneath the thick sedimentary cover. This thick sedimentary sequence and also numerous, shallow, high-velocity salt and carbonate features existing in the Gulf margins make it difficult, and often impossible, to probe the underlying crustal structures using conventional seismic refraction techniques or modern seismic reflection techniques. In 1983, the University of Texas Institute for Geophysics conducted a large-offset seismic experiment in the northwestern Gulf using large-capacity air guns and digital ocean-bottom seismographs to determine the structure and crustal type for this area. Five profiles were shot over an area extending from the shallow mid-shelf south of Galveston to the continental rise just south of the Sigsbee escarpment. These newly acquired data allowed combined use of near-vertical reflections, wide-angle reflections and refractions for interpretation. In addition to the conventional constant-velocity-layer analysis, several unconventional techniques were used to obtain complementary velocity-depth functions for this area. These techniques included: (1) determination of interval velocities from moveouts of the pre-critical reflections, (2) analysis of pre- and post-critical reflections in the tau-p domain to determine extremal depth bounds for constant-velocity layers, (3) forward modeling using two-dimensional (2-D) raytracing for 2-D velocity distributions, and finally (4) estimation of the thickness of the allochthonous salt from the relationship between the extent of salt refraction and the thickness of the salt. A 13 to 15 km thick sedimentary sequence lies beneath the northwestern Gulf. Various types of salt features exist within the sediments in the slope area, ranging from deeply buried layers and diapirs under the inner slope to shallow, thin, allochthonous bodies under the outer slope. In contrast to the sedimentary section, the crust shows considerable variation in thickness, from normal oceanic crust underneath the continental rise to nearly continental thickness underneath the shelf. The crustal transition under the slope, however, is not monotonous but includes nearly oceanic thickness under the mid-slope, which suggests a failed incipient rifting zone there.
KEYWORDS: Texas; continental shelf; continental slope; geology; stratigraphy; diapir; geologic history;

00397

Ebersole, B.A. 1985. Atchafalaya River Delta. Rep. 8. Numerical modeling of hurricane-induced storm surge. Army Engineer Waterways Experiment Station, Vicksburg, MS. Hydraulics Lab. Rep. No. WES/TR/HL-82-15/8. 96 p. NTIS order No. AD-A152 817/3/XAB.

ABSTRACT: This report contains a description of the US Army Engineer Waterways Experiment Station (WES) Implicit Flooding Model (WIFM) and how it was applied to the Atchafalaya River Delta Project. Input required by the model for this application is discussed. The model is verified to both tidal and hurricane conditions by comparing prototype water-surface elevations to simulated results. Hurricane wind fields are generated using the standard project hurricane (SPH) model. The storm surge model is used to simulate the response of the Atchafalaya Bay area for a set of 12 hypothetical hurricane events. Hurricane parameters defining this ensemble of storms were derived from historical data. Originator supplied key words include: Atchafalaya Bay; Hurricanes; Numerical modeling; and Storm surge.
KEYWORDS: Louisiana; Atchafalaya River Delta; Atchafalaya Bay; estuary; coastal waters; physical; hurricane; wave; wind; model; tide;

00398

Edwards, G.S. 1971. Geology of the West Flower Garden Bank. Texas A&M University, Sea Grant Publ. No. TAMU-SG-71-215. 199 p.

ABSTRACT: The West Flower Garden Bank was investigated with respect to the subsurface structure of the pre-reef pinnacle, the environment currently surrounding the pinnacle, and the carbonate sediments being deposited on the bank. The report also reviews previous work done in the area. Temperature, salinity, light, waves and storms, and currents are described. The Quaternary history of the bank is discussed, and the carbonate producing organisms are described and classified.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; geology; reef;

00399

Edwards, J.C. 1967. Production of the marine shrimp (Penaeus fluviatilis Say and Penaeus aztecus Ives) in Texas and Louisiana waters, and the relation of rainfall and fresh water drainage. Master's thesis. University of Mississippi, Oxford, MS. 43 p.

ABSTRACT: The relationship between rainfall and catches of white and brown shrimp was studied between 1927 and 1964 off the coast of Texas and Louisiana. Any correlation between rainfall amount and catches of either species was documented as well as a relationship between catch size and river discharge.
KEYWORDS: Louisiana; Texas; coastal waters; biology; shrimp; meteorology;

00400
Ehler, C.N.; Basta, D.J. 1983. NOAA's strategic assessment programme in the Gulf of Mexico. Mar. Poll. Bull. 14(9):325-334.

ABSTRACT: This report deals with operational discharges of oil from marine transportation sources and was compiled by Virgil F. Keith, Robert A. Mondor and Nannette J. Goldberg, of Engineering Computer Optecnomics, Inc., Annapolis, MD 21401, and Charles N. Ehler, Daniel J. Basta and Thomas F. LaPointe of the Ocean Assessments Division, Office of Oceanography and Marine Services, National Ocean Service, National Oceanic and Atmospheric Administration, Rockville, MD.
KEYWORDS: Gulf of Mexico; oil and gas; oil spill; environmental impact;

00401
Ehrhardt, M. 1972. Petroleum hydrocarbons in oysters from Galveston Bay. Environ. Pollut. 3(4):257-271.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; oil and gas; chemistry; hydrocarbon; oyster;

00402
Eiseman, N.J.; Blair, S.M. 1982. New records and range extensions of deep water algae from East flower Garden Bank, northwestern Gulf of Mexico. Contrib. Mar. Sci. 25:21-26.

ABSTRACT: Deepwater benthic algal collections were made by the research submersibles Johnson-Sea-Link I and Diaphus in the East Flower Garden Bank region of the northwestern Gulf of Mexico during Sept. of 1976, 1977, 1978 and 1980. Forty-one species were identified, 33 of which were new records for the northwestern Gulf (Texas [USA]). Five species (Halimedia gracilis, Titanophora incrustans, Compsothamnion thuyoides, Apoglossum ruscifolium and Searlesia subtropica) are reported for the 1st time from the Gulf of Mexico.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; biology; flora; taxonomy;

00403
Eisenhardt, W.C.; Holzman, H.T. 1985. Exploration and development Gulf Coast Tertiary, 1983. Oil Gas. J. 83 (27):68-70.

ABSTRACT: The generally recognized "Tertiary trend" extends in a broad arc from Mexico across Texas to extreme southeastern Louisiana in a strike direction and from the Comanchean shelf edge (approximate downdip limit of the Cretaceous trend) to the outer edge of the continental shelf, presently the downdip limit of oil and gas exploration. Two "outliers" are also included: (1) an area encompassing portions of eastern Louisiana and southwestern Mississippi, currently the site of active Wilcox exploration, and (2) a smaller area in the general vicinity of Mobile Bay, Ala., where the search continues for shallow Miocene pays. A comparison of the total number of wells drilled in this trend in 1983 vs. 1982 indicates a decrease in all areas except the Texas and Louisiana offshore, where a slight increase occurred.
KEYWORDS: Texas; Louisiana; continental shelf; geology; oil and gas;

00404
El-Sayed, S.Z. 1972. Primary productivity and standing crop of phytoplankton in the Gulf of Mexico, p. 8-13. In V.C. Bushnell [ed.], Chemistry, primary productivity and benthic algae of the Gulf of Mexico, serial atlas of the marine environment, folio 22. American Geographic Society, New York.

ABSTRACT: This work is a general overview of phytoplankton in the Gulf of Mexico. Measurements on primary productivity, biomass, and standing crop were made. Data is presented on average chlorophyll (mg/m3) and average C(14) uptake (mgC/m(3)/hr).
KEYWORDS: Gulf of Mexico; biology; plankton; primary production; flora;

00405
El-Sayed, S.Z.; Ichiye, T.; Trees, C.C. 1986. Gulf of Mexico/Cuba, p. 67-71. In W.A. Novis, E.F. Szajna, and W.A. Bohan [ed.], Nimbus-7 CZCS. Coastal Zone Color Scanner imagery for selected coastal regions. National Aeronautics and Space Administration, Washington, DC. 99 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; plankton; primary production; chlorophyll; remote sensing;

00406
El-Sayed, S.Z.; Trees, C.C. 1980. Ecological studies of phytoplankton in the Gulf of Mexico during NOAA/NMFS Oregon II cruise. Department of Oceanography, Texas A&M University, College Station, TX. Rep. No. 80-8-T. 53 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; plankton; flora; ecology;

00407
Elder, E.D. 1982. Shrimp unloading facility effluents and their impact on local water quality. Tex. J. Sci. 34:197-206.

ABSTRACT: A large number of the seafood processing industries located on the Gulf of Mexico release screened effluents directly into shore waters. With multiple commercial and recreational uses being made of these waters, assessing the impact of the effluents on the quality of the waters is important. Effluent and harbor samples collected from Conn Brown Harbor in Aransas Pass, Texas were analyzed. Samples from the unloading facilities were collected from thaw-tanks, bilges and drains. Harbor samples were collected from areas receiving effluents and from effluent-free areas to assess the impact of the effluents. Data were analyzed using mean, analysis of variance and Duncan's new multiple range test. The unloading facilities did not adversely affect the quality of the harbor water. The quality did not vary significantly between effluent-free and effluent-receiving areas. The parameters monitored also did not vary significantly with the passage of time. The study area did not meet Texas coastal water quality requirements for biochemical O2 demand, dissolved O2 and oil and grease. Problems in water quality were encountered in and out of the harbor area indicating water quality problems for the general area, not just the effluent-receiving areas.
KEYWORDS: Texas; estuary; chemistry; water quality; fisheries; environmental impact;

00408
Emery, K.O. 1968. Relict sediments on continental shelves of the world. Am. Assoc. Pet. Geol. Bull. 52(3):445-464.

ABSTRACT: None
KEYWORDS: United States; continental shelf; geology; sediment; geologic history;

00409
Enge, K.M.; Mulholland, R. 1985. Habitat suitability index models: Southern and Gulf Flounders. U.S. Fish Wildl. Serv. Biol. Rep. 82(10.92). 37 p.

ABSTRACT: A review and synthesis of existing information were used to develop habitat models for southern and gulf flounders (Paralichthys lethostigma, P. albigutta). The models are scaled to produce an index of habitat suitability between 0 (unsuitable) and 1.0 (optimally suitable) for southern and gulf flounder habitat in the Gulf of Mexico from Florida to Texas.
KEYWORDS: Gulf of Mexico; biology; ecology; fish; flounder; model;

00410
Entzeroth, L.C. 1982. Particulate matter and organic sedimentation on the continental shelf and slope of the northwest Gulf of Mexico. Ph.D. dissertation. The University of Texas at Austin. 271 p. (Diss. Abs. 43/12-B:3885).

ABSTRACT: A study of the source and rate of vertical transport of particulate organic matter on the shelf and slope of the Northwestern Gulf of Mexico was done. The study included zooplankton, total particulate organic matter, surface sediments and sediment cores. The organic matter was characterized with respect to percent carbon and nitrogen, (delta)(13)C and the chemical composition of the lipid fraction. Sediment trap studies on the South Texas shelf and upper slope indicated that approximately 60 to 80 percent of the organic carbon produced is recycled in the upper 100 meters of the water column. There is also a substantial loss of organic matter through oxidation, dissolution or resuspension at the sediment-water interface. Kerogen and humic fractions are the major particulate organic components below the euphotic zone. These fractions retain their isotopic identity as they are incorporated into the sediments. The flux of the lipid fraction decreased more rapidly than the total organic flux both in the water column and at the sediment surface and appears to undergo significant isotopic fractionation as it is incorporated into the sediments. Sedimentary fatty acid and hydrocarbon compositions showed significant quantities of terrestrially derived lipid material across the shelf and upper slope. Profiles of sediment cores from the northwest slope of the Gulf of Mexico showed organic carbon (delta)(13)C values ranging from -19.2 to -27 ppt. Some cores showed distinctive shifts in (delta)(13)C with depth from values around -20 ppt to values around -25 ppt. C/N ratios of these sediment samples generally support the theory that the isotopic changes are due to a shift from interglacial marine-dominated organic matter to terrestrially-dominated organic matter deposited during glacial periods of the Pleistocene.
KEYWORDS: Texas; continental shelf; continental slope; geology; chemistry; sediment; organic carbon; sedimentation; stable isotope;

00411
Environment Consultants, Inc. 1974. Environmental and socioeconomic baseline on the Gulf of Mexico coastal zone and outer continental shelf: supplemental bibliography on environmental processes and conditions in the Gulf of Mexico Region. Vol. 2. Bureau of Land Management, Washington, DC.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; chemistry; geology; physical; socioeconomics; oil and gas; bibliography;

00412
Environment Consultants, Inc. 1974. Environmental and socioeconomic baseline on the Gulf of Mexico coastal zone and outer continental shelf: supplemental bibliography on environmental processes and conditions in the Gulf of Mexico region. Volume 1. Bureau of Land Management, Washington, DC.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; chemistry; geology; physical; socioeconomics; oil and gas; bibliography;

00413
Environment Consultants, Inc. 1974. Socio-economic inventory and analysis of the Gulf of Mexico region. Volume 3. Bureau of Land Management, Washington, DC.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; socioeconomics; oil and gas; shipping; fisheries;

00414
Environmental Data Information Service. 1981. Brine disposal in the Gulf of Mexico: projected impacts for West Hackberry based on Bryan Mound experience. NOAA Environmental Data and Information Service, Washington, DC. 87 p.

ABSTRACT: This report was prepared in compliance with a DOE permit issued by EPA for brine discharge into the Gulf of Mexico from the Strategic Petroleum Reserve West Hackberry facility, Cameron Parish, Louisiana. Projected impacts of brine disposal on the nearshore marine environment are presented in light of post-discharge experience and knowledge gained from the Bryan Mound, Texas brine disposal site which has been operational for one year. Discharge volume at Bryan Mound is limited by permit to about 680 thousand barrels per day brine concentration generally is between 225 and 250 ppt. Discharge volume at West Hackberry will be limited by permit to about 1.1 million barrels per day with a similar range of brine concentrations. An adjustment to an input to the Transient Plume Model has been made based on a comparison of hindcasts to field observations of the Bryan Mound brine plume. Subsequently, the model predicts that: the West Hackberry brine plume will not reach Calcasieu Pass salinity excesses of 1 ppt or more will encompass 6600 acres or less and salinity excesses of 3 ppt or more will encompass 1500 acres or less. Based on Bryan Mound discharge experience, brine disposal at West Hackberry is projected to have minimal impact on the biota and sediment and water quality.
KEYWORDS: Texas; Louisiana; coastal waters; biology; chemistry; oil and gas; brine disposal; environmental impact; water quality; Strategic Petroleum Reserve;

00415
Ernst, L.H.; Barbour, R.W. 1972. Turtles of the United States. University of Kentucky Press, Lexington, KY. 347 p.

ABSTRACT: None
KEYWORDS: United States; biology; ecology; turtle;

00416
Estoque, M.A. 1976. Behavior of fronts over the Gulf of Mexico. In Collection of preprints of papers presented at Conference on Meteorology over the Gulf of Mexico, 14-16 January 1976. Center for Applied Geosciences, Texas A&M University, College Station, TX.

ABSTRACT: A survey of knowledge concerning the behavior of fronts over the Gulf of Mexico is made. The observed properties of two types of fronts are presented. The first type of front is that which corresponds to a stable, slowly dissipating front. Conventional meteorological diagrams and satellite pictures are used to depict its characteristics such as speed of movement, cloudiness, temperature, and moisture. The second type of front which is described is one which intensifies in connection with cyclogenesis. On the basis of our current knowledge, it was conclude that the most important need is a quantitative description of the observed behavior of fronts over the Gulf.
KEYWORDS: Gulf of Mexico; physical; meteorology;

00417

Etter, P.C. 1983. Heat and freshwater budgets of the Gulf of Mexico. J. Phys. Oceanogr. 13:2058-2069.

ABSTRACT: Monthly mean oceanic heat storage rates (QT) for the upper 200 meters of the Gulf of Mexico are calculated directly from multi-annual vertical temperature data. The annual march of QT exhibits a minimum of - 170 W m(-2) in January and a maximum of 170 W m(-2) in May. Spatial distributions of QT are contoured on maps for February, May, August and November. These maps elucidate climatic features of air-sea interactions occurring over the Loop Current and also near the shelf edges of the northern Gulf. Three previous climatic heat budget studies encompassing the Gulf of Mexico are examined to determine the surface heat exchange: Budyko's and Bunker's-supplemented with more detailed but unpublished monthly results; and studies by Hastenrath and Lamb. While Budyko's values provide a familiar basis for comparisons, the more recent unpublished results of Bunker and Hastenrath and Lamb are averaged together to define the monthly mean radiative (QR) and turbulent (QA) heat exchanges in the Gulf of Mexico. Monthly mean advective heat changes (QV) are then derived as residuals in the heat budget equation (QV = QR - QA-QT). These QV values are partially verified by direct computations of the monthly mean vertical and horizontal components of heat advection according to the divergent heat budget equation developed by Emery. The residual QV values reinforce the observations of Elliott concerning the role of detached anticyclonic Loop Current rings in redistributing heat with the Gulf of Mexico. New estimates of the mean hydrologic balance in the Gulf of Mexico are advanced by combining the seasonal oceanic precipitation rates (P) of Dorman and Bourke with the evaporation rates (E) obtained from the averages of Bunker (unpublished) and Hastenrath and Lamb. An annual mean E-P value of 127 cm is obtained. These results are combined with estimates of river discharge rates to evaluate the freshwater continuity of the Gulf of Mexico.
KEYWORDS: Gulf of Mexico; physical; meteorology; current; Loop Current; eddy; model;

00418

Etter, P.C.; Cochrane, J.C. 1975. A summary of water temperature on the Texas-Louisiana continental shelf. Institute of Applied Geosciences, Texas A&M University, College Station, TX. 51 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; physical; temperature;

00419

Etter, P.C.; Ulm, W.F.; Cochrane, J.D. 1985. The relationship of wind stress to heat flux divergence of Texas-Louisiana shelf waters. Cont. Shelf Res. 4(5):547-552.

ABSTRACT: Monthly, multi-annual mean heat budgets are calculated for waters overlying the Texas-Louisiana shelf. Heat storage rates are calculated on the basis of a volumetric temperature-salinity census; unpublished data from Bunker are consulted to determine surface heat exchanges. Monthly heat flux diverges, calculated as residuals in the heat budget equation, show divergence of heat during the months of June and July, the upwelling season for much of the Texas-Louisiana coast, and convergence of heat during the rest year when winds conducive to downwelling prevail.
KEYWORDS: Texas; Louisiana; physical; continental shelf; salinity; temperature; wind;

00420

Everts, C.H. 1981. Human influence on the sediment budget of a barrier island, p. 863-880. In Proceedings of the Coastal Zone '80 Conference. American Society of Civil Engineers, Hollywood, FL.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; barrier island; geology; physical; erosion; sediment transport; sedimentation;

00421

Ewing, M.; Ericson, D.B.; Heezen, B. 1958. Sediments and topography of the Gulf of Mexico, p. 995-1053. In L. Weeks [ed.], Habitat of oil. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: The topography of the floor of the Gulf of Mexico is dominated by the Mississippi Cone, the apex of which lies a few hundred feet below sea level at the Pleistocene mouth of the Mississippi River, and limits of which are formed by the scarps bounding the main basin. On the southwest the Mississippi Cone merges with the remarkably flat Sigsbee abyssal plain. The sediments of the Cone and the closely related abyssal plain are all remarkably similar. The top 30-40 centimeters of each core from the abyssal plain and lower Mississippi Cone is largely composed of foraminiferal lutite. This bed reaches its maximum thickness of 4 meters on the upper cone and on the upper continental rise. The lower portion of each core is composed of gray silty clay which forms a layer so thick that, with one exception it has never been completely penetrated by a 30-foot coring tube. Micropaleontological correlation and radiocarbon dating have established the abrupt transition at the base of the ooze as the Pleistocene-Recent boundary (11,000 years B.P.). In sharp contrast cores from three low knolls rising from the abyssal plain contain no gray silts and represent pelagic deposition well back into the Pleistocene. The deposition of gray silts and clays on the cone and on the floor of the abyssal plain at the same time that pelagic sediment was being deposited on the knolls proves that the gray silts were transported along the sea floor. Evidence from sediments and topography indicates that the Mississippi Cone was formed by the turbidity current transportation and deposition of silty sediments supplied in quantity by the Pleistocene Mississippi River.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; deep sea; geology; geologic history; sediment;

00422

Executive Resource Associates, Inc. 1984. Federal outer continental shelf oil and gas activities: A socioeconomic review. Report to the Minerals Management Service, Washington, DC. Contract No. 14-12-0001-30051.

ABSTRACT: The study objectives were (1) to search current literature to gather existing quantifiable socioeconomic information that identifies OCS-related socioeconomic impacts, summarized by Planning Area; (2) to prepare a series of tables containing relevant socioeconomic baseline information for each Planning Area; (3) to prepare a description of potential OCS oil and gas activity impacts on the socioeconomic environment of each Planning Area; and (4) to translate impact to dollar value using market and non-market valuations. The study produced an annotated bibliography and a 12-volume set of data tables for 21 OCS Planning Areas.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; Pacific Ocean; continental shelf; oil and gas; socioeconomics; environmental impact; bibliography;

00423

Exxon Production Research Company. 1974. Research needed to determine chronic effects of oil on the marine environment. In Workshop Proceedings, November 4-6, 1974, Houston, TX. Exxon Production Research Company, Houston, TX. 43 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; oil and gas; environmental impact; oil spill;

00424

Fable, W. 1979. Environmental studies of the south Texas outer continental shelf, 1977. Snapper/grouper. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. AA550-IA7-21. 23 p. NTIS order No. PB296-645.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; fish; fisheries; ecology; snapper; grouper; STOCS;

00425

Fanning, K.A.; Carder, K.L.; Betzer, P.R. 1982. Sediment resuspension by coastal waters: a potential mechanism for nutrient re-cycling on the ocean's margins. Deep-sea Res. 29(8A):953-965.

ABSTRACT: Nutrient profiles from the continental shelf of the northeastern Gulf of Mexico indicated considerable near-bottom enrichment in silica and nitrate above coarse sediments east of the Mississippi delta. In contrast, near-bottom waters of the carbonate-rich West Florida Shelf showed no such enrichments. Storm-related suspension apparently produced the enrichments because, in near-bottom waters south of Mobile Bay, silica, nitrate plus nitrite, and suspended load increased substantially as a winter storm front passed. Also, laboratory simulation of resuspension by stirring the supernatant seawater over a clay-rich core produced similar increases in silica and nitrate plus nitrite, with ammonia being the apparent precursor to the nitrate and nitrite. Most of the nutrient increase appeared to come from previously deposited sediments in the early stages of resuspension. Using the ratios of nutrients released to sediments resuspended, calculations indicate that resuspension of as little as 1 mm of shelf sediment could intermittently augment overlying productivity by as much as 100 to 200%. Thus, resuspension may accelerate nutrient recycling on continental margins.
KEYWORDS: Gulf of Mexico; continental shelf; physical; chemistry; sediment; nutrient; sediment transport;

00426

Fanning, K.A.; Pilson, M.E. 1973. The lack of inorganic removal of dissolved silica during river ocean mixing. Geochim. Cosmochim. Acta 37:2405-2415.

ABSTRACT: Forty-nine stations were sampled between New Orleans and Galveston in an effort to describe some aspects of the Mississippi River plume. Samples were collected during December, 1969 on the cruise 152 of the R/V Gosnold. Water samples were filtered and analyzed for silica, organic carbon, orthophosphate, NO3, NO2, ammonia and urea.
KEYWORDS: Louisiana; Texas; coastal waters; continental shelf; organic carbon; chemistry;

00427

Farber, S.; Johnson, D.B. 1976. The impact of oil and gas exploration, development, and production on the outer continental shelf of Louisiana: Background and methodology. Louisiana State Planning Office, Baton Rouge, LA.

ABSTRACT: This report contains data on OCS development and some financial implications for the state. The major portion of this study is concerned with alternative methodologies, and their related evaluations, which can be applied to measuring the impact of petroleum and gas mining activity on the OCS adjacent to Louisiana.
KEYWORDS: Louisiana; continental shelf; biology; oil and gas; ecology; environmental impact;

00428

Farrell, D.H. 1979. Benthic molluscan and crustacean communities in Louisiana, p. 401-436. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: This investigation examines species diversity, faunal similarities, and biomass relations of benthic communities in Timbalier Bay and offshore Louisiana. The bay and shelf regions were faunally distinct, with limited species exchange. Benthic fauna was temporally variable, with many species apparently cyclic in occurrence. Seasonality was observed throughout the study area; maximum biomass and maximum species density occurred during spring. Biomass in the bay was not significantly different among study sites, but biomass of the shallow shelf was significantly higher than at deeper, offshore stations. A marked oxygen depletion occurred offshore during July 1973 and was apparently limiting to biomass and most benthic species. The low dissolved oxygen levels apparently resulted from natural causes, probably the unusually high Mississippi River flood during the previous spring. No abnormal environmental stress could be attributed to petroleum activities in the area.
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; benthos; ecology; Offshore Ecology Investigation;

00429

Feeley, M.H. 1984. Seismic stratigraphic analysis of the Mississippi fan. Ph.D. dissertation. Texas A&M University, College Station, TX. 247 p. (Diss. Abs. 46/02-B:453).

ABSTRACT: Examination of extensive multichannel and single-channel data across the Mississippi Fan, Gulf of Mexico reveals that at least eight seismic sequences comprise the Pliocene/Pleistocene section (sequences I-VIII, oldest to youngest). The sequence boundaries are basin-wide unconformities identified on the basis of truncation and reflector terminations. In general, each sequence is lens-shaped in cross-section, thinning laterally from an area of maximum thickness. Isopach and structure maps compiled for each of the sequences indicates a seaward and eastward migration in the fan depocenter during its development. Mapping of the orientation of the axis of maximum thickness for each sequence indicates a major eastward shift in the depocenter during the Late Pleistocene. This shift suggests a major influx of sediment from sources other than the Mississippi River Embayment, possibly from the DeSoto Canyon. Seven seismic facies have been identified within the fan unit, each with one or more facies types. A depositional mechanism has been proposed for each based on the reflection pattern, position within each sequence, and lateral facies relationships. Channel, overbank, mass transport, and turbidity flow deposits have been interpreted within each sequence. Each facies occupies a unique position in the evolution of each sequence, reflecting a succession of depositional regimes. This succession may be related to cycles of sea level fluctuations. Analyses of facies distributions and interpreted depositional mechanisms suggest that the development of an individual sequence can be described in four stages. (1) Initial deposition is characterized by thick, mounded chaotic units, probably the result of mass transport depositional processes. Initiation of canyon development may occur during this stage. Major deposition is possibly triggered by a fall in sea level, when rapid progradation of the shelf edge occurs with associated failure of unstable sediment. (2) Stage 1 deposits are capped by higher amplitude, moderate continuity reflectors which fill across the irregular upper surface of the mass transport deposits. The reflection patterns suggest deposition from predominantly turbidity flows, possibly associated with the middle to late stages of a fall in sea level. Canyon development continues. (3) "Classic" channelized lobe deposition occurs during this stage. The canyon controls deposition, channelizing the flow of the material reaching the fan. (abstract truncated).
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; stratigraphy;

00430

Feeley, M.H.; Buffler, R.T.; Bryant, W.R. 1984. Seismic stratigraphic interpretation of Mississippi Fan, Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 68(4):475. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; stratigraphy;

00431

Feijtel, T.C. 1986. Biogeochemical cycling of metals in Barataria Basin. Ph.D. dissertation. The Louisiana State University and Agricultural and Mechanical College. 303 p. (Diss. Abs. 47/08-B:3269).

ABSTRACT: Metal distribution, accumulation, and differential mobility were determined in the terrestrial and aquatic portions of Barataria Basin. Seasonal variations in surface water and interstitial pore water constituents of marsh and bay bottom sediments, along a salinity transect were determined through a monthly sampling from March 1984 to August 1985. Diffusion and mass transfer coefficients in bay bottom sediments were determined through the use of non-steady state diffusion cell incubations, and the use of a kinetic silica model, respectively. Sedimentation and particle mixing rates were calculated from the (137)Cs distribution, and Fe(2+) and Mn(2+) production rates were obtained by applying a one-dimensional transport-reaction model to the solid phase distribution. An iron and manganese mass balance was calculated for bay bottom sediments in the upper and lower portions of the basin. Diagenetic remobilization in the rapidly accumulating bottom sediments of the lower basin resulted in manganese and iron turnover rates of 20 and 40 days, respectively. Increase in ionic strength and benthic fluxes along this salinity transect resulted in significantly higher concentrations of dissolved iron and manganese in the aquatic portions of the lower basin. However, particulate iron and manganese decreased towards the middle and lower parts of the basin due to desorption processes. Partial metal fractionation in water soluble, exchangeable, reducible, and residual phases in marsh and bottom sediments was performed in order to assess and predict the distribution in labile and non-mobile fractions. Saturation states in respect with the main sedimentary solid phases were determined through the use of Geochem, an ion speciation model. Pyrite content, along this salinity transect, was found to be significantly higher in the brackish environments. Dynamic iron and pyrite cycling in the salt marsh resulted in a low pyritic pool (0.69% FeS(2)), characterized as single fine-grained euhedral crystals, indicating its rapid formation. The differential mobility of iron and manganese resulted in a significant fractionation of both metals in the lower basin. Manganese export was restricted to the saline portions of the basin, and an estimated 0.95 to 1.95 g Mn/m(2) is lost to the Gulf of Mexico every year.
KEYWORDS: Louisiana; Barataria Bay; estuary; marsh; chemistry; geology; trace metal; sediment;

00432
Feijtel, T.C.; DeLaune, R.D.; Patrick, H.W.,Jr. 1985. Carbon flow in coastal Louisiana. Mar. Ecol. Prog. Ser. 24 (3):255-260.

ABSTRACT: Carbon flux data was synthesized to estimate carbon flow along a salinity gradient in Louisiana's Barataria Basin, a major Gulf Coast estuary (USA). Using a mass balance approach, the authors found an estuarine carbon surplus of 150 to 250 g/m2/yr, which originated primarily in the tidal salt marsh. Carbon export from marshes to adjacent water bodies decreases with distance from the Gulf of Mexico. The Barataria basin marshes function as important global carbon sinks within this export gradient. High community respiration, methane emission, and carbon accretion resulting from annual carbon fixation reduce carbon export from the northern part of the basin. Higher primary production, low community respiration, and low methane evolution make the southern part of the basin a source of aquatic carbon.
KEYWORDS: Louisiana; estuary; marsh; Barataria Bay; biology; chemistry; organic carbon;

00433
Felder, D.L.; Chaney, A.C. 1979. Decapod crustacean fauna of Seven and One-Half Fathom Reef, Texas: species composition, abundance, and species diversity. Contrib. Mar. Sci. 22:1-29.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; biology; reef; benthos;

00434
Felder, D.L.; Rabalais, N.N. 1986. The genera Chasmocarcinus Rathbun and Speocarcinus Stimpson on the continental shelf of the Gulf of Mexico, with descriptions of two new species. J. Crust. Biol. 6(3):547-575.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; biology; benthos; taxonomy;

00435
Fenner, F.D.; Presley, B.J. 1984. Iridium in Mississippi River suspended matter and Gulf of Mexico sediment. Nature 312:260-262.

ABSTRACT: The suggestion that a meteorite impact at the end of Cretaceous time (the Cretaceous-Tertiary boundary) caused the extinction of many groups of organisms and left an anomalous iridium concentration in sediments has stimulated interest in both the extinctions and in the geochemistry of Ir. The geochemical behavior of Ir is not well understood, partly because of the scarcity of concentration data for common rocks, soils and waters. The authors report Ir abundances in Mississippi River suspended matter (MRSM) and Gulf of Mexico (GOM) sediments and suggest that these values may be representative of much of the upper continental crust (that accessible to rock weathering). These data imply that the processes leading to the well known enrichment of iridium in deep-sea sediments are similar to those which enrich elements such as Ni and Co.
KEYWORDS: Gulf of Mexico; geology; chemistry; trace metal; sediment;

00436
Ferebee, T.W. 1979. Sedimentation in Mississippi Trough, Gulf of Mexico. Am. Assoc. Petrol. Geol. Bull. 63:792.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Canyon; continental slope; geology; sedimentation;

00437
Ferrari, F.D. 1973. Some Corycaeidae and Oncaeidae (Copepoda: Cyclopoida) from the epipelagic waters of the Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 215 p.

ABSTRACT: Data are presented on the quantitative vertical and horizontal distributions of 21 species of copepods from two families, Oncaeidae and Corycaeidae, in the upper 500 m of the Gulf of Mexico and Yucatan Strait area. Samples were collected with a Longhurst-Hardy sampling system and open half-meter nets. A key and drawings are presented for the species discussed in the study. One new species of the genus Oncaea and a new form of the species Oncaea mediterranea are recognized.
KEYWORDS: Gulf of Mexico; biology; plankton; taxonomy;

00438
Filipek, L.H. 1986. Influence of iron and manganese on the chemical partitioning of copper, zinc, and chromium during early diagenesis in outer continental shelf sediments from the Gulf of Mexico, p. 31-52. In F.A. Mumpton [ed.], Studies in Diagenesis. U.S. Geol. Surv. Bull. 1578.

ABSTRACT: To study how iron and manganese influence the chemistry of copper, zinc, and chromium in continental-shelf sediments during early diagenesis, a sequence of six extractions was used to isolate various forms of these five metals from the upper-most 1.5-2 m of sediment from the outer continental shelf off the coast of Texas. Three cores were collected from low-carbonate sediments in which sulfate reduction was minor. Concentrations in the extracts suggest that the geochemistry of all five metals changed during diagenesis; however, only manganese showed signs of vertical remobilization and only at the shallowest site (water depth = 32 m), which possessed the strongest redox (oxidation-reduction) gradient. In all cores the redox conditions appeared to be too low for the formation of extensive manganese oxides; hence, most of the nonlithogenous manganese was present as a carbonate or in an exchangeable form soluble in 1 molar acetic acid (HOAc). Outer continental shelf sediments provide a geographically large environmental transition between organic-poor, suboxic pelagic sediments and organic-rich, anoxic nearshore sediments. Based on the present results, the chemistry of this shelf environment appears to be controlled mainly by the precipitation and dissolution of hydrous iron oxides, accompanied by minor sulfate reduction. Even though reduced iron is in excess over sulfide, copper and zinc appear to compete successfully for the sulfide so that the shelf sediments provide a sink for these trace metals and act as an important control in their geochemical cycling.
KEYWORDS: Texas; continental shelf; chemistry; trace metal; sediment;

00439
Filipek, L.H.; Owen, R.M. 1980. Early diagenesis of organic carbon and sulfur in outer shelf sediments from the Gulf of Mexico. Am. J. Sci. 280 (10):1097-1112.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; geology; chemistry; sulfur; organic carbon; sediment;

00440
Finley, R.J.; Baumgardner, R.W., Jr. 1980. Interpretation of surface-water circulation, Aransas Pass, Texas, using LANDSAT imagery. Remote Sens. Environ. 10(1): 3-22

ABSTRACT: The development of turbid, surface-water plumes in the Aransas Pass, TX., vicinity has been analyzed by using LANDSAT imagery. The shape and extent of plumes present in the Gulf of Mexico depends upon the wind regime and astronomical tide prior to, and at the time of, the satellite overpass. The best developed plumes are evident when brisk northerly winds resuspend bay-bottom muds and the flow through Aransas Pass is increased by wind stress. Seaward diversion of nearshore waters by the inlet jetties was also observed. A knowledge of surface-water circulation through Aransas Pass under various wind conditions is potentially valuable for monitoring suspended and surface pollutants.
KEYWORDS: Texas; coastal waters; estuary; Aransas Pass; physical; nepheloid; remote sensing; wind; tide;

00441
Finucane, J.H.; Brusher, H.A.; Collins, L.A. 1980. Spawning of bluefish, Pomatomus saltator, in the Gulf of Mexico. Northeast Gulf Sci. 4(1):57-59

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fish;

00442
Finucane, J.H.; Collins, L.A.; Barger, L.E. 1978. Spawning of the striped mullet, Mugil cephalus, in the northwestern Gulf of Mexico. N.E. Gulf Sci. 2(2):148-150.

ABSTRACT: The first report of spawning of M. cephalus off the Texas coast in the northwestern Gulf of Mexico is presented. The diameters of the eggs collected ranged 0.91-0.99 mm newly hatched yolk-sac larvae were 2.1 mm long.
KEYWORDS: Texas; coastal waters; biology; fish; mullet;

00443

Finucane, J.H.; Collins, L.A.; Brusher, H.A.; Saloman, C.H. 1986. Reproductive biology of king mackerel, Scomberomorus cavalla, from the southeastern United States. Fish. Bull. 84 (4):841-850.

ABSTRACT: The reproductive biology of king mackerel, Scomberomorus cavalla, was studied from specimens collected off Texas, Louisiana, and northwest Florida in the Gulf of Mexico and off North and South Carolina in the Atlantic Ocean. Gonads were examined from 1,163 females and 595 males obtained in 1977-78. Spawning was prolonged. Most king mackerel were reproductively active from May through September. A few fish were in spawning condition as early as April and as late as October. All females were mature at 850-899 mm fork length (FL). Estimates of fecundity ranged from about 69,000 to 12,207,000 eggs for fish from 446 to 1,489 mm FL, 618 to 25,610 g total weight (TW), and 1 to 13 years of age. Fecundity (F) was usually significantly correlated with FL, TW, and age in each area but TW was the best predictor of fecundity in all areas combined (F = 1.854 x 10(1) (TW) 1.361)), with r(2) = 0.856.
KEYWORDS: Texas; Louisiana; Florida; biology; fish; mackerel;

00444

Finucane, J.H.; Nakamura, E.L.; Trent, W.L. 1976. Environmental studies of the South Texas Outer Continental Shelf, 1974. Volume I; Plankton and fisheries. Report by NOAA, National Marine Fisheries Service to the Bureau of Land Management, Washington, DC. 162 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; plankton; fisheries; STOCS;

00445

Fisher, W.L.; Brown, L.F., Jr.; McGowen, J.H.; Groat, C.G. 1973. Environmental geologic atlas of the Texas coastal zone -- Beaumont-Port Arthur area. Bureau of Economic Geology, Univ. Texas, Austin. 93 p.

ABSTRACT: This article deals with a wide range of topics related to the geology of the Beaumont-Port Arthur area. The geology, geologic history, and the climate and dynamic coastal processes are discussed. Narratives and maps are included for the following topics: (1) Pleistocene and Modern-Holocene systems (fluvial, strandplain-chenier and offshore, marsh-swamp, bay-estuary-lagoon); (2) physical properties; (3) environments and biological assemblages; (4) current land use; (5) mineral and energy resources; (6) active processes; (7) man-made features; (8) rainfall, stream discharge, and surface salinity; and (9) topography and bathymetry.
KEYWORDS: Texas; estuary; coastal waters; geology; biology; physical;

00446

Fisher, W.L.; McGowen, J.H.; Brown, L.F., Jr.; Groat, C.G. 1972. Environmental geologic atlas of the Texas coastal zone -- Galveston-Houston area. Bureau of Economic Geology, Univ. Texas, Austin. 91 p.

ABSTRACT: This article deals with a wide range of topics relating to the geology of the Houston-Galveston area. Topics discussed include modern erosion and deposition, and climate and dynamic coastal processes. Fluvial, strandplain-chenier and offshore, marsh-swamp, and bay-estuary-lagoon systems are discussed and depicted on an environmental geology map. Narratives and maps are included for the following topics: (1) Pleistocene and Modern-Holocene systems (fluvial, strandplain-chenier and offshore, marsh-swamp, bay-estuary-lagoon); (2) physical properties; (3) environments and biological assemblages; (4) current land use; (5) mineral and energy resources; (6) active processes; (7) man-made features; (8) rainfall, stream discharge, and surface salinity; and (9) topography and bathymetry.
KEYWORDS: Texas; estuary; coastal waters; geology; biology; physical;

00447

Fisk, H.N. 1944. Geological investigation of the alluvial valley of the lower Mississippi River. Mississippi River Commission, Vicksburg, MS. 82 p.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; Mississippi River; geology; sediment transport;

00448
Fisk, H.N.; McClelland, B. 1959. Geology of continental shelf off Louisiana: its influence on offshore foundation design. Geol. Soc. Amer. Bull. 70(10):1369-94.

ABSTRACT: Foundation problems for drilling structures offshore from Louisiana are related to the shearing strengths and scour resistance of near-surface late Quaternary continental shelf deposits. Over much of the shelf area, thick top-stratum clays provide the foundation materials; where clays are thin, underlying substratum sands or weathered late Pleistocene deposits constitute the foundation. Study of the nature of late Quaternary facies and their relation to shelf topography makes it possible to map the sediment types and to date them. Compression tests on clay samples, permit recognition of four categories of strength variation with depth; normally consolidated, underconsolidated approaching normal, underconsolidated, and overconsolidated clays. These tests also demonstrate that substantial time is required for clays to reach a normally consolidated condition.
KEYWORDS: Louisiana; continental shelf; geology; oil and gas; hazard; petroleum platform; sediment; stratigraphy; sediment transport;

00449
Fitzgerald, C.M. 1981. The strategic petroleum reserve - environmental impacts associated with the leaching of salt caverns. D.Env. dissertation. University of California, Los Angeles. 137 p. (Diss. Abs. 42/01-B:126).

ABSTRACT: In order to diminish the vulnerability of the United States to a severe petroleum shortage, the Strategic Petroleum Reserve (SPR) was created in 1975 to provide for the storage of up to one billion barrels of crude oil. Phase I of the program involved the modification of existing underground salt caverns in Texas and Louisiana to provide 248 million barrels of storage for use during an emergency interruption in foreign imports. The crude oil will be pumped from the caverns and transported via pipeline to nearby refineries and terminals for nationwide distribution. In Phase II of the program, an additional 290 million barrels of storage capacity will be developed by leaching new underground caverns at Bryan Mound, Texas and West Hackberry, Louisiana, and acquiring an existing 10 million barrel cavern at Bayou Choctaw, Louisiana. Seven barrels of fresh water are required to leach one barrel of cavern space. Therefore, large volumes of fresh water will be required during the leaching process, with a potential impact on water quality and the aquatic population in the waterways from which the water is withdrawn. Similarly, the leaching process will require the disposal of large quantities of brine with a potentially adverse impact on the marine environment. However, the Department of Energy (DOE), in conjunction with the National Oceanic and Atmospheric Administration (NOAA) and Massachusetts Institute of Technology (MIT), have developed a multiport diffuser system to efficiently disperse the brine in the offshore waters of the Gulf of Mexico. Predictions of model runs and actual operational experience at the Bryan Mound site show excess salinities around the diffuser of no more than the five parts per thousand (ppt) above ambient conditions. The first six months of biological monitoring data collected at the Bryan Mound diffuser indicate no significant changes in the benthos, nekton or plankton in the area. This report describes in detail the environmental impacts associated with the leaching of salt caverns, using the West Hackberry, Louisiana SPR site as an example. A discussion of the SPR system and site facilities is followed by a description of potential impacts associated with fresh water withdrawal and brine disposal in addition to the results of physical biological studies conducted at the operating Bryan Mound diffuser.
KEYWORDS: Louisiana; coastal waters; oil and gas; biology; brine disposal; environmental impact; benthos; Strategic Petroleum Reserve;

00450
Fitzsimons, J.M.; Rogers, J.S.; Cashner, R.C. 1985. Karyologic and electrophoretic studies of the genus Cynoscion (Sciaenidae, Perciformes) from the northern Gulf of Mexico. Jap. J. Ichthyol. 31(4):444-448.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; genetics; fish;

00451
Flandorfer, M.; Skuplen, L. [ed.]. 1980. Proceedings of a workshop for potential fishery resources of the northern Gulf of Mexico. Mississippi-Alabama Sea Grant Consortium, Ocean Springs, MS. MASGP-80-012.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; socioeconomics;

00452
Fleeger, J.W. 1985. Meiofaunal densities and copepod species composition in a Louisiana, U.S.A., estuary. Trans. Am. Microsc. Soc. 104 (4):321-332.

ABSTRACT: Estuarine meiofauna was collected at two Gulf of Mexico sites for a 15-month period. Comparisons of major taxon densities and meiobenthic copepod species composition, densities, and diversity were described for an intertidal vegetated (Spartina alterniflora) marsh site and a nearby subtidal, non-vegetated bayou site. Intertidal marsh total meiofauna averaged 540 multiplied by 10 cm(-2), of which 83% were nematodes and 14% were copepods. The subtidal site averaged 2,300 multiplied by 10 cm(-2) total meiofauna 97% were nematodes and 2% were copepods. Marsh copepod collections were dominated by Nannopus palustris and Enhydrosoma woodini, together comprising 69% of all copepods. Bayou collections were dominated by Pseudostenhelia wellsi and Cletocamptus helobius, which constituted 80% of all copepods. About eight species were collected monthly at each site, and most of these occurred at both sites. However, all abundant copepod species, except Halicyclops coulli, differed in abundance between bayou and marsh stations.
KEYWORDS: Louisiana; estuary; marsh; biology; benthos;

00453
Fleminger, A. 1957. New calanoid copepods of Pontella Dana and Labidocera Lubbock with notes on the distribution of the genera in the Gulf of Mexico. Tulane Stud. Zool. 5:19-34

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; plankton; taxonomy;

00454
Fleminger, A. 1957. New calanoid copepods of the families Aetideidae, Euchaetidae, and Stephidae from the Gulf of Mexico. U.S. Fish and Wildlife Service, Fish. Bull. 117(57):355-363.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; plankton; taxonomy;

00455
Fleminger, A. 1957. New genus and two new species of Tharybidae (Copepoda: Calanoida) from the Gulf of Mexico with remarks on the status of the family. Fish. Bull. 57:347-354

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; plankton; taxonomy;

00456
Flint, R.W. 1979. Ecology of the Texas Gulf of Mexico shelf, p. 123-146. In P.L. Fore and R.D. Peterson [ed.], Proceedings of the Gulf of Mexico coastal ecosystems workshop. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/30. 214 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; benthos; ecology; STOCS;

00457
Flint, R.W. 1983. Computer-accessible annotated bibliography of the Corpus Christi Bay estuary. University of Texas at Austin, Port Aransas Marine Science Institute. Sea Grant Rep. No. TAMU-SG-83-605. 290 p. NTIS order No. PB83-204842.

ABSTRACT: Texas has approximately 600 km of shoreline facing the northwestern Gulf of Mexico. This shoreline is composed of a series of barrier islands behind which lie seven major estuarine systems and three minor estuaries. The Corpus Christi Bay system is one of the major estuaries and covers a surface area of approximately 539.6 sq km, including open bay water, grassbeds and tidal flats. Unlike most other major estuaries of Texas and the remainder of the continental United States, the Corpus Christi Bay system is located in a semi-arid climate, usually receiving less than 70 cm of rainfall annually. Therefore, evaporation normally exceeds precipitation, and this estuary becomes hypersaline.
KEYWORDS: Texas; estuary; Corpus Christi Bay; biology; geology; chemistry; physical; fisheries; bibliography;

00458

Flint, R.W.; Griffin, C.W. [ed.]. 1979. Environmental studies, south Texas outer continental shelf, chemistry and biology. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. 7 vol. NTIS order Nos. PB81-106718, PB81-106726, and PB81-106692.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; chemistry; benthos; plankton; trace metal; hydrocarbon; sediment; STOCS;

00459

Flint, R.W.; Holland, J.S. 1980. Benthic infaunal variability on a transect in the Gulf of Mexico. Estuar. Coast. Mar. Sci. 10 (1):1-14.

ABSTRACT: Macroinfaunal benthos off the south Texas [USA] Coast of the Gulf of Mexico formed different assemblages distributed according to depth: shallow (22 m), mid-depth (36-49 m) and deep water (78-131 m). Species composition of shallower stations were less diverse, composed of eurytopic and opportunistic species adapted to a fluctuating environment. The deep water benthos, in a more stable environment, had a higher diversity. Sediment composition (high proportions of silt) at the mid-depth stations resulted in dominance of deposit feeders. The environmental gradient was related to a species continuum which changed from polychaete dominated groups in shallow water, to deposit feeding mollusks and crustaceans, to a deep water diverse fauna not dominated by any particular group. Environmental heterogeneity, including climatic variability, may be most important in controlling shallow water benthos. In deeper more stable shelf habitats where diversities are higher and species equilibrium is the case, species interactions may determine community structure.
KEYWORDS: Texas; continental shelf; biology; benthos;

00460

Flint, R.W.; Kalke, R.D. 1985. Benthos structure and function in a South Texas estuary. Contrib. Mar. Sci. 28:33-53.

ABSTRACT: The Corpus Christi Bay estuary in the northwestern Gulf of Mexico was investigated for spatial and temporal variation of benthos community structure and function. Four stations were sampled quarterly for 2.5 years to investigate for macroinfaunal species assemblage changes as well as changes in benthic metabolism and nutrient regeneration. Cluster analysis of species assemblages illustrated that community structure changed from the riverine-influenced end of the estuary to the oceanic-influenced end. Taxa number increased away from the fluvial source while total abundance decreased. Maximum biomass was observed in the middle estuary region. Metabolism did not show consistent temporal patterns but sediment nutrient flux always exhibited peak rates during the summer at all sites. Sediment texture differences as well as variability in salinity between sites were thought to influence benthos structure and function in this estuary.
KEYWORDS: Texas; estuary; Corpus Christi Bay; biology; benthos; ecology;

00461

Flint, R.W.; Kamykowski, D. 1984. Benthic nutrient regeneration in south Texas coastal waters. Estuar. Coast. Shelf Sci. 18:221-230.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; biology; current; nutrient; chemistry; sediment;

00462

Flint, R.W.; Kamykowski, D. 1984. Benthic nutrient regeneration in South Texas coastal waters. Estuar. Coast. Shelf Sci. 18 (2):221-230.

ABSTRACT: Because of the variable, unpredictable nature of many potential nutrient sources for coastal phytoplankton primary production needs in the north-western Gulf of Mexico, benthic regeneration was investigated as a more constant source of nutrients to this ecosystem. Water column ammonia profiles taken at several locations on the south Texas inner-shelf in the last seven years showed peak concentrations in bottom waters. Benthic chamber measurements verified the presence of ammonia fluxes at the mud-water interface in south Texas coastal waters. These fluxes were related to benthic faunal activity as measured by sediment metabolism. It was estimated that annual benthic regeneration rates can supply 69% of the nitrogen required to support phytoplankton primary production in these coastal waters.
KEYWORDS: Texas; coastal waters; chemistry; nutrient; biology; plankton; primary production;

00463

Flint, R.W.; Rabalais, N.N. 1980. Environmental studies, South Texas outer continental shelf, 1975-1977. Volume I. Ecosystem description. Report to Bureau of Land Management, Washington, DC. 358 p. Contract No. AA551-CT8-51. NTIS order No. PB80-181506.

ABSTRACT: This study of the South Texas Outer Continental Shelf (STOCS) was conducted on behalf of the Bureau of Land Management and with the close cooperation of personnel of that agency. The results reported on herein constituted a synthesis of three years of an environmental studies program of the STOCS. This study was part of an overall program that included the other elements of (1) geology and geophysics by the U.S. Geological Survey, (2) fisheries resources and ichthyoplankton populations by the National Oceanic and Atmospheric Administration/National Marine Fisheries Service, and (3) biological and chemical characteristics of selected topographic features in the northern Gulf of Mexico by Texas A and M University.
KEYWORDS: Texas; continental shelf; biology; chemistry; geology; fisheries; oil and gas; environmental impact; STOCS;

00464

Flint, R.W.; Rabalais, N.N. 1980. Environmental studies, South Texas outer continental shelf, 1975-1977. Volume III. Study area final reports. Report to Bureau of Land Management, Washington, DC. 650 p. Contract No. AA551-CT8-51. NTIS order No. PB80-181522.

ABSTRACT: This study of the South Texas Outer Continental Shelf (STOCS) was conducted on behalf of the Bureau of Land Management and with the close cooperation of personnel of that agency. The results reported on herein constituted a synthesis of three years of an environmental studies program of the STOCS. This study was part of an overall program that included the other elements of (1) geology and geophysics by the U.S. Geological Survey, (2) fisheries resources and ichthyoplankton populations by the National Oceanic and Atmospheric Administration/National Marine Fisheries Service, and (3) biological and chemical characteristics of selected topographic features in the northern Gulf of Mexico by Texas A and M University.
KEYWORDS: Texas; continental shelf; biology; chemistry; geology; fisheries; oil and gas; environmental impact; STOCS;

00465

Flint, R.W.; Rabalais, N.N. 1980. Polychaete ecology and niche patterns: Texas continental shelf. Mar. Ecol. Prog. Ser. 3(3):193-202.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; ecology; benthos;

00466

Flint, R.W.; Rabalais, N.N. 1981. Environmental studies of a marine ecosystem. South Texas outer continental shelf. University of Texas Press, Austin, TX. 240 p.

ABSTRACT: This book is a summary of research conducted on the south Texas outer continental shelf during the BLM STOCS study. The book includes information on geology and geophysics, fisheries resources and ichthyoplankton, chemistry, and benthic biology.
KEYWORDS: Texas; continental shelf; biology; chemistry; geology; benthos; plankton; STOCS;

00467

Flint, R.W.; Rabalais, N.N. 1981. Gulf of Mexico shrimp production: a food web hypothesis. Fish. Bull. 79(4):737-748.

ABSTRACT: The desire to better understand the dynamics of commercial shrimp populations which support an important regional fishery on the south Texas outer continental shelf stimulated the authors to investigate an extensive data base for links in the various ecosystem components that related to these dynamics. A correlational model was developed that suggested relationships between pelagic and benthic components of the south Texas marine ecosystem. Utilizing tracers, such as nickel concentrations in biota, sediment, and water, they identified pathways of natural transfer between zooplankton, the benthos, and coastal shrimp populations. These results stimulated them to develop a theoretical food web for the shrimp populations, focusing on transfer of carbon. The results of this exercise indicated that the majority of primary production (approximately 80%) is diverted to the benthos.
KEYWORDS: Texas; continental shelf; biology; benthos; shrimp; ecology; model;

00468
Flint, R.W.; Rabalais, N.N.; Kalke, R.D. 1982. Estuarine benthos and ecosystem functioning, p. 185-201. In J.R. Davis [ed.], Proceedings of the symposium on recent benthological investigations in Texas and adjacent states, annual meeting of the Texas Academy of Science, San Angelo, TX, 4-6 Mar 1982.

ABSTRACT: Studies were initiated in the estuarine waters of Corpus Christi Bay, in the northwestern Gulf of Mexico, to define the role of estuarine benthos in the functioning of the ecosystem. Benthos production as measured by sediment oxygen uptake ranged from 0.6 - 1.9 g C/m(2)/day. This variation was related to both sampling site location and seasonal water temperature changes. Net fluxes of ammonia from the sediments ranged from 0.7 - 9.9 mg-atm NH4-N/m(2)/day. These nutrient flux measures were negatively correlated with increasing salinities within the ecosystem. Sediment nutrient fluxes were compared to the amount of nitrogen needed for the observed primary production rates within the estuary and it was found that the benthos supplied from 12% to 98% of needed nitrogen. Benthic nutrient regeneration was also compared to other nutrient sources such as riverine input. Benthic secondary production was contrasted to primary production in this ecosystem and also to the production of potential consumer populations such as shrimp.
KEYWORDS: Texas; Corpus Christi Bay; estuary; chemistry; biology; ecology; benthos; shrimp;

00469
Florida Sea Grant College. 1981. Environmental impact statement and fishery management plan for the reef fish resources of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, FL. 140 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fishery statistics; fishing gear; fishery management; reef; socioeconomics;

00470
Fontaine, C.T. 1971a. Conversion tables for commercially important penaeid shrimp of the Gulf of Mexico. National Marine Fisheries Service, Data Rep. No. 70. 9 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; shrimp;

00471
Fontaine, C.T.; Neal, R.A. 1971. Length-weight relations for three commercially important penaeid shrimp of the Gulf of Mexico. Trans. Amer. Fish. Soc. 100:584-586.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; shrimp;

00472
Fonyo, C.M.; Browder, J.A.; Brunemeister, S.L. 1983. Mobility patterns and characteristics of shrimp vessels fishing off Texas, 1981. National Marine Fisheries Service, Miami, FL. Southeast Fisheries Center. Rep. No. NOAA-TM-NMFS-SEFC-120. 51 p. NTIS order No. PB84-125483.

ABSTRACT: This study, designed to describe the mobility of shrimp vessels in the Texas fishery in 1981, will be used to develop guidelines for a complete analysis of the Gulf of Mexico shrimp fleet: its structure, behavior and mobility patterns.
KEYWORDS: Texas; coastal waters; continental shelf; fisheries; shrimp; socioeconomics;

00473
Fore, P.L. [ed.]. 1977. Proceedings of the 1977 oil spill response workshops. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-77/24. 153 p.

ABSTRACT: None
KEYWORDS: United States; coastal waters; biology; chemistry; oil and gas; environmental impact; oil spill;

00474
Fore, P.L.; Baxter, K.N. 1972a. Collections of larval Gulf menhaden, Brevoortia patronus, from Galveston Entrance (1959-1969) and Sabine Pass (1963-1967), Texas. National Marine Fisheries Service, Data Rep. No. 74. 17 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; fish; menhaden;

00475

Fore, P.L.; Baxter, K.N. 1972b. Diel fluctuations in the catch of larval Gulf menhaden, Brevoortia patronus, at Galveston Entrance, Texas. Trans. Amer. Fish. Soc. 101:729-732.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; fish; menhaden;

00476

Fore, P.L.; Peterson, R.D. [ed.]. 1980. Proceedings of the Gulf of Mexico Coastal Ecosystems Workshop. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/30. 214 p.

ABSTRACT: The purpose of this workshop was to provide training for U.S. Fish and Wildlife field personnel on recent developments in our understanding of Gulf coast ecosystems. The workshop focused on presenting and discussing information related to assessing the impact of human activities on fish and wildlife resources in these ecosystems. Fourteen formal presentations were given during three technical sessions by invited scientists and other professionals. These presentations are the papers included in these proceedings. Two afternoons of the workshop were devoted to field trips to representative coastal habitats of the south Texas region.
KEYWORDS: Gulf of Mexico; marsh; estuary; beach; barrier island; coastal waters; biology; ecology; wildlife;

00477

Forristall, G.Z. 1980. Two-layer model for hurricane-driven currents on an irregular grid. J. Phys. Oceanogr. 10(9):1417-1438

ABSTRACT: Measurements made during Hurricanes ''Carmen'' and ''Eloise'' reveal some features of wind-driven currents which have been incorporated into a numerical model. In the summer, near-surface waters on the continental shelf off Louisiana are usually strongly stratified by river runoff. The passage of a hurricane provides enough energy to mix the surface layer down to a depth between 30 and 45 m. At the same time, a two-layer current system develops, with the mixed layer responding much more directly to the wind shear than the bottom layer. This system was modelled by parameterizing the mixed layer with a relatively high eddy viscosity and the lower layer with a much lower eddy viscosity. A modification of a previously developed convolution integral scheme permits calculation of the detailed structure in both layers without requiring a three- dimensional grid. To eliminate some problems with lateral boundary conditions, the vertically integrated calculations were performed on an irregular grid system representative of the entire Gulf of Mexico. Comparisons with the storm measurements show that the model is reasonably accurate, but some processes remain unmodelled.
KEYWORDS: Louisiana; continental shelf; physical; current; wind; hurricane; model;

00478

Forristall, G.Z.; Reece, A.M. 1985. Measurements of wave attenuation due to a soft bottom: the SWAMP experiment. J. Geophys. Res. 90(C2):3367-3380

ABSTRACT: The Sea Wave Attenuation Measurement Program (SWAMP) was designed to provide measurements of the attenuation of waves as they travel from deep water to relatively shallow water off the Mississippi Delta. The soft bottom was suspected of causing strong attenuation in the area. This effect has now been measured. A wave staff and electromagnetic current meter were used to estimate directional wave spectra at the Cognac platform in 312 m (1025 ft) of water and at platform VV in South Pass Block 27 in 19 m (63 ft) of water. In addition, measurements of vertical bottom motion were made at platform VV. Seven storm periods from Sept. 1979 to Feb. 1981 were studied. The directional spectral comparisons show that the theoretically calculated refraction and shoaling can explain the changes in the spectra when the wave height is low; however, as the wave height increases, a nonlinear attenuation mechanism becomes increasingly strong. The attenuation is a strong function of deep-water wave height and a weak function of wave frequency. The bottom motion measurements show that the bottom moves downward with small amplitude under wave crests.
KEYWORDS: Louisiana; continental shelf; coastal waters; physical; wave;

00479

Fotheringham, N. 1981. Observations on the effects of oil field structures on their biotic environment: platform fouling community, p. 179-208. In B.S. Middleditch [ed.], Environmental effects of offshore oil production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: This report investigates the fouling community, its planktonic larvae, and its predators at the Buccaneer Oil and Gas Field, in an effort to determine the structure and the factors regulating the structure of the fouling community.
KEYWORDS: Texas; continental shelf; oil and gas; biology; environmental impact; Buccaneer Field;

00480

Fotheringham, N.; Weissberg, G.H. 1979. Some causes, consequences, and potential environmental impacts of oxygen depletion in the northern Gulf of Mexico, p. 2205-2208. In Proceedings, Offshore Technology Conference, Houston, TX. Paper No. OTC-3611.

ABSTRACT: Biological and water quality changes in the Gulf of Mexico off the central Louisiana coast were examined during a seasonal period of stratification and oxygen depletion in the water column. Probable causes, observed effects, and potential impacts on the timing of ocean discharges and dumping and on site selection for offshore industries are described. Apparently an annual phenomenon of variable intensity resulting from a large discharge of low-salinity, organic-laden water from the Mississippi and Atchafalaya Rivers at a time of minimal vertical mixing, this midsummer event may be intensified and prolonged by the intrusion of high salinity bottom water from a Loop Current eddy. In 1978, a widespread low-oxygen layer occupied the lower 3 to 8 m of the 6 to 17 m water column for at least three weeks. Dissolved oxygen concentrations were commonly less than 0.1 ppm in this layer, resulting in the mortality of some polychaetes, molluscs, and crustaceans, including blue crabs, and in the reduction of demersal shrimp and fish populations, probably through emigration offshore. The temporal and geographic distribution of this condition and its environmental consequences should be recognized by industries engaged in fishing, offshore petroleum production, and offshore dumping, and also by government agencies regulating these activities.
KEYWORDS: Louisiana; coastal waters; chemistry; biology; hypoxia; dissolved oxygen; ecology;

00481

Fox, L.E.; Lipschultz, F.; Kerkhof, L.; Wofsy, S.C. 1987. A chemical survey of the Mississippi estuary. Estuaries 10(1):1-12.

ABSTRACT: A "snap shot" survey of the Mississippi estuary was made during a period of low river discharge, when the estuarine mixing zone was within the deltaic channels. Concentrations of H+, Ca2+, inorganic phosphorus and inorganic carbon suggest that the waters of the river and the low salinity (< 5.permill.) portion of the estuary are near saturation with respect to calcite and sedimentary calcium phosphate. An input of oxidized nitrogen species and N2O was observed in the estuary between 0 and 4 ppt salinity. The concentrations of dissolved NH4- and O2, over most of the estuary, appeared to be influenced by decomposition of terrestrial organic matter in bottom sediments. The estuarine bottom also appears to be a source of CH4 which has been suggested to originate from petroleum shipping and refining operations. Estuarine mixing with offshore Gulf waters was the dominant influence on distributions of dissolved species over most of the estuary (i.e., from salinities > 5 ppt. The phytoplankton abundance (measured as chlorophyll a) increased as the depth of the mixed layer decreased in a manner consistent with that expected for a light-limited ecosystem. Fluxes of NO3- + NO2- and soluble inorganic phosphorus to the Gulf of Mexico were estimated to be 3.4 .+-. 0.2 .times. 103 g N s-1 and 1.9 .+-. 0.2 g P s-1, respectively, at the time of this study.
KEYWORDS: Louisiana; Mississippi River; Mississippi River Delta; estuary; chemistry; nutrient; salinity; methane; biology; chlorophyll; sediment;

00482

Fox, L.E.; Sager, S.L.; Wofsy, S.C. 1985. Factors controlling the concentrations of soluble phosphorus in the Mississippi estuary. Limnol. Oceanogr. 30(4):826-832.

ABSTRACT: Sediments from the Mississippi River estuary were suspended in solutions with a range of salinities and various initial concentrations of phosphate. After 42 days the suspensions had nearly uniform values for the ion activity product of calcium times biphosphate, [Ca2+][HPO42-] .apprxeq. 10-9 M2. Similar values were observed for this ion product in the Mississippi River and in the upper estuary, suggesting that the concentration of soluble P may be controlled by an equilibrium with sedimentary material. The data are consistent with a mechanism where soluble P is controlled by hydrolysis on the surface of hydroxyapatite particles: Ca10(PO4)6(OH)2 + 6H2O .dblarw. 4[Ca2HPO4(OH)2]surface + 2Ca2+ + 2HPO42-. P levels in the lower estuary are controlled primarily by dilution with low-nutrient waters from the Gulf of Mexico.
KEYWORDS: Louisiana; estuary; Mississippi River; chemistry; nutrient;

00483

Frank, D.J. 1972. Deuterium variations in the Gulf of Mexico and selected organic materials. Ph.D. dissertation. Texas A&M University, College Station, TX. 118 p.

ABSTRACT: Samples of zooplankton were collected from the Gulf of Mexico during cruises 70-A-14, 71-A-3, 71-A-5, 71-A-12 and 71-A-9 of the R/V Alaminos. 160 water samples were also collected from the Gulf of Mexico, Caribbean Sea, and Mississippi and Coatzacoalcos Rivers. Plankton and water samples were analyzed for deuterium and protium and physical data including temperature and salinity were collected.
KEYWORDS: Gulf of Mexico; chemistry; plankton; temperature; salinity;

00484

Franzen, D.M.; Hyde, L.B. 1981. Offshore quartering study - a five year projection into an expanding Gulf of Mexico operations, p. 251-261. In Proceedings, 13th Annual Offshore Technology Conference, Houston, TX, 4 May 1981, vol. 4. Paper No. OTC-4141.

ABSTRACT: The South Texas Offshore District of ARCO Oil & Gas Co. anticipates a substantial increase in offshore production platforms over the next few years. Associated with this is a proportionate increase in the need for production personnel to operate these platforms. The purpose of this study was to evaluate several options for quartering and transporting these personnel. The two options considered in this study were: (1) Quarter personnel on every production platform or special quartering platforms (2) Transport personnel daily from land shorebases. The results from this study indicate that the offshore quartering mode of operation was generally lower in cost. Specifically, the high incremental transportation cost for shorebase versus offshore operation justifies significant capital outlays for offshore quartering facilities.
KEYWORDS: Texas; oil and gas; socioeconomics; onshore facilities;

00485

Frazier, D.E. 1967. Recent deltaic deposits of the Mississippi River: Their development and chronology. Trans. Gulf Coast Assoc. Geol. Soc. 17:287-315.

ABSTRACT: Sixteen separate delta lobes have been formed by the Mississippi River in the past 6,000 years. Fourteen are included in the Teche, St. Bernard, and Lafourche delta complexes; the remaining two include the present birdfoot delta, which is an extension of the earlier formed initial lobe of the Plaquemines-Modern complex. Each delta complex is genetically related to a major Mississippi River course. Individual delta lobes within each complex are the result of the successive distributary networks of a major river course. Delta lobes were defined by detailed facies analyses of sediment cores from hundreds of shallow borings combined with lithologic and faunal data from several hundred additional borings. Each lobe consists of a basal fine-grained prodelta facies, an overlying sandy delta-front facies, and uppermost fine-grained delta-plain facies. The latter deposits include peat accumulations and nonorganic floodplain and natural-levee deposits. More than one hundred radiocarbon age determinations made on discrete delta-plain peats have been used to establish the chronology of the 16 delta lobes. These data, together with the facies relationships, indicate that the development of each delta complex was not a continual process; instead, river shifting from one major course to another caused the temporary cessation of development in one delta complex as progradation occurred in another. Similar deltaic sequences, prevalent in Tertiary outcrops along the northern flank of the Gulf Coast geosyncline, extend basinward as massive subsurface clastic wedges which constitute a major portion of the peripheral basin fill.
KEYWORDS: Louisiana; Mississippi River Delta; geology; geologic history; sedimentation; stratigraphy;

00486

Frazier, D.E. 1974. Depositional episodes: their relationship to the Quaternary stratigraphic framework in the northwestern portion of the Gulf basin. Bureau of Economic Geology, University of Texas at Austin, Geological Circular 74-1. 28 p.

ABSTRACT: The stratigraphic record yields evidence that each episode of clastic silicate deposition has been of limited duration and that each has been preceded and followed by a significant hiatus. Evidence for alternations of deposition and non-deposition is readily apparent in the landward portions of Pleistocene deposits along the Gulf Coast, due to the glacio-eustatic changes in sea level; evidence of alternations, although elusive, exists also in the basinward portions of these deposits. The concept of depositional-episodes explains the significance and relationship of these alternating conditions throughout the basin. The strata attributed to each depositional-episode are a composite of several discrete facies-sequences and are referred to in this paper as a depositional-complex. Each facies-sequence represents either a single delta lobe within a deltaic progression, or one of the several repetitive sequences deposited in an interdeltaic environment. Each depositional-complex records and defines a depositional-episode and indicates three phases of development. Deposits of the initial phase record a stillstand of the sea during which each of the several rivers entering the basin prograde a succession of delta lobes and interdeltaic facies-sequences across the shelf. The second phase of development (which is penecontemporaneous with the first) is recorded by the intercalation of clastic and organic flood-plain deposits which accumulate on the newly formed coastal plain, and by the deep-water hemipelagic basin sediments which are secondarily derived from unstable sediments deposited in the outermost shelf and uppermost slope environments. The terminal phase is evidenced by sediments deposited during a period of instability when a marine transgression either continuously or intermittently forces estuarine conditions on the rivers entering the basin. Throughout the terminal transgression, the finite zone of active deposition adjacent to the shoreline is shifted landward. Basinward of this active zone of deposition hiatal conditions are imposed and at the instant of maximum transgression, when the depositional-episode is terminated, all points on the hiatal surface are synchronous. The bounding surfaces of depositional complexes represent natural stratigraphic breaks over the entire basin and are related to hiatal conditions imposed by marine transgressions. Within the Quaternary section, the repetitive alternation of depositional-episodes and significant hiatuses is due to the glacio-eustatic fluctuations of sea level: as a result, worldwide correlations of the Quaternary depositional-complexes and hiatal surfaces may be possible.
KEYWORDS: Gulf of Mexico; Louisiana; continental shelf; geology; sediment; stratigraphy; geologic history;

00487

Frazier, D.E.; Osanik, A.; Elsik, W.C. 1978. Environments of peat accumulation - coastal Louisiana, p. 5-20. In W.R. Kaiser [ed.], Gulf Coast Lignite Conference: Geology, Utilization, and Environmental Aspects. Texas Bureau of Economic Geology, Rep. of Investigation 90.

ABSTRACT: The principal peat-forming environments in coastal Louisiana are the inland fresh-water cypress-gum swampland and the peripheral coastal marshland were the marsh flora is zoned coastward from fresh-water to brackish to saline-tolerant grasses and sedges. The broad flood basins in the centralized alluvial valley diminish in size and increase in number downstream caused by the Mississippi River trunk stream bifurcating into major distributary-channel networks which enclose smaller interdistributary basins. The inner swampland terminates basinward within a short distance along the flanks of the distributary levee systems, and the coastward widening interdistributary areas transform into the slowly subsiding peripheral coastal marshlands. Additional peat-forming environments exist in western coastal Louisiana on the contiguous marshes of the chenier plain between relict beaches and in eastern Louisiana in small saline mangrove swamps on the washover (landward) side of the Chandeleur Islands. Thicknesses and radiocarbon dates of peats from more than a thousand shallow borings verify that peats have been forming in these environments for the past several thousand years. The thickest peats encountered are in the inland swamps and are attributed to environmental stability. Subsiding marshes, genetically related to thin, overlapped delta lobes, form repetitive layers of peat in the peripheral areas. Each thick inland swamp peat, therefore, may be time correlative with several coastal marsh peats. These thick swamp peats make the inland swampland the most prospective ancient coal-forming environment.
KEYWORDS: Louisiana; Mississippi River Delta; marsh; geology; stratigraphy; geologic history;

00488

Fredericks, A.D.; Sackett, W.M. 1970. Organic carbon in the Gulf of Mexico. J. Geophys. Res. 75:2199-2066.

ABSTRACT: A study of the dissolved and particulate organic carbon in the Gulf of Mexico showed that mean amounts of both forms were highest in shelf waters (depth less than 200 m), lower in the surface water (0 to 90 m) of the open Gulf, and lowest in the deep ocean (90 to 3600 m). An evaluation of the sources of dissolved organic carbon (DOC) in the Gulf of Mexico indicates approximately equal contributions from runoff, in situ generation in open Gulf surface water, and a nearshore source that may result from human activities. Preliminary evidence suggests that DOC will be a useful parameter for understanding the mixing behavior of various water masses in the Caribbean-Gulf of Mexico systems.
KEYWORDS: Gulf of Mexico; chemistry; organic carbon;

00489

Freeman, R.L.; Holland, S.M.; Ditton, R.B. 1986. Measuring the impact of the Ixtoc I oil spill on visitation at three Texas public coastal parks. CZM Journal 13(2):177-200.

ABSTRACT: A study of public visitation to three beach parks following the world's largest oil spill--on the lower Texas coast in August 1979--shows the spill resulted in no significant decrease in visitation at any of the three sites. The spill was caused by the blow out of an exploratory well, Ixtoc I, in the Bay of Campeche in the Gulf of Mexico in early June 1979. Gas shortages also were a problem at this time. The parks -- Padre Island National Seashore, Padre Balli County Park, and Port Aransas County Park -- were studied from 1977 to 1982, using time series intervention analysis. Three events (gas price, gas availability, and the Ixtoc I oil spill) were modeled for each of the sites. When the oil spill model was tested with visitation data, no significant decrease in visitation was demonstrated at any of the three sites, nor was there long-term (nine months) impact.
KEYWORDS: Texas; barrier island; beach; socioeconomics; oil and gas; environmental impact; oil spill; Ixtoc;

00490

Frey, H.R.; Appell, G.F. 1981. NOS Strategic Petroleum Reserve Support Project. Volume 2. Measurements and Data Quality Assurance. National Ocean Survey, Rockville, MD, Office of Oceanography. Sponsor: Department of Energy, Washington, DC. Strategic Petroleum Reserve Office. Rep. No. NOAA-81052102. 232 p. NTIS order No. PB81-236689.

ABSTRACT: The National Ocean Survey (NOS) collected 12 months of oceanographic and meteorological data to develop physical oceanographic characterizations of the sites, particularly those properties that govern the advection and diffusion of salt brine discharges. These data were collected at two proposed brine disposal sites on the Louisiana inner continental shelf from June 1978 to June 1979. NOS assessed the instrument technology, selected the instruments, and evaluated the Grundy Model 9021 current meter. Inspection and acceptance tests, calibrations, development of quality control hardware and procedures, and training of personnel were also carried out. The quality of data acquired during this survey is represented in the Total Measurement Uncertainties (TMU) and is traceable to accepted standards by the methodology and procedures described in this report. Current meter, meteorological station, water level gage, wave gage, CTD, and water sample (salinity and dissolved oxygen) data have been processed, validated, and archived at the National Oceanographic Data Center (NODC).
KEYWORDS: Louisiana; coastal waters; physical; current; meteorology; brine disposal; salinity; Strategic Petroleum Reserve;

00491

Frey, H.R.; Szabados, M.W.; Hichman, L.E. 1981. NOS strategic petroleum reserve support project: Final report. Vol. I, Oceanography on the Louisiana inner continental shelf. U.S. Department of Commerce, National Ocean Survey, Washington, DC.

ABSTRACT: NOS collected oceanographic and related meteorological data from June 1978 to June 1979 to characterize the physical features of two proposed brine disposal sites on the Louisiana inner continental shelf. The National Marine Fisheries Service (NMFS) completed a companion study during the same period to characterize the chemical and biological features of the two sites. Environmental Data and Information Service (EDIS) is synthesizing the physical, chemical, and biological data collected by NOS and NMFS into environmental assessments of the potential impact of brine disposal.
KEYWORDS: Louisiana; physical; biology; chemistry; meteorology; Strategic Petroleum Reserve;

00492

Fritts, T.H.; Hoffman, W.; McGehee, M.A. 1983. The distribution and abundance of marine turtles in the Gulf of Mexico and nearby Atlantic waters. J. Herpetol. 17:327-344.

ABSTRACT: Aerial surveys of marine waters up to 222 km from shore in the Gulf of Mexico and nearby Atlantic Ocean suggest that marine turtles are largely distributed in waters less than 100 m in depth. The loggerhead turtle (Caretta caretta) was observed nearly 50 times as often in waters off eastern and western Florida as in the western Gulf of Mexico. Loggerheads were present year-round but the frequency of sightings in the winter months was lower than at other seasons. Green turtles (Chelonia mydas) were infrequently observed but were most conspicuous in waters off eastern Florida. Kemp's ridleys (Lepidochelys kempi) were most frequently sighted off southwestern Florida and rarely observed in the western Gulf of Mexico. Leatherback turtles (Dermochelys coriacea) were more conspicuous on the continental shelf then in adjacent deeper waters. A concentration of leatherback and loggerhead turtles occurred west of the Gulf Stream Current in August 1980, near Brevard County, Florida.
KEYWORDS: Gulf of Mexico; biology; turtle; endangered species;

00493

Fritts, T.H.; Irvine, A.B.; Jennings, R.D.; Collum, L.A.; Hoffman, W.; McGehee, M.A. 1983. Turtles, birds and mammals in the northern Gulf of Mexico and nearby Atlantic waters. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/65. 455 p.

ABSTRACT: Aerial line transect surveys of marine turtles, birds, and mammals were conducted in four areas of the Gulf of Mexico and nearby Atlantic waters. Areas surveyed were 111 km by 222 km and located off Brownsville, Texas; Marsh Island, Louisiana; Naples, Florida; and Merritt Island, Florida. Data on distribution, abundance, seasonal occurrence, and habitat use are reported in accounts for each of the 88 species observed. Information on reproduction, behavior, and potential impacts of Outer Continental Shelf (OCS) development are also discussed. Later chapters summarize the fauna of each of the four areas; characterize the inshore, nearshore, and offshore fauna; and discuss the effects of OCS development on marine vertebrates.
KEYWORDS: Florida; Louisiana; Texas; biology; ecology; bird; marine mammal; turtle; oil and gas; environmental impact;

00494

Fritts, T.H.; McGehee, M.A. 1982. Effects of petroleum on the development and survival of marine turtle embryos. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/37. 41 p.

ABSTRACT: None
KEYWORDS: biology; oil and gas; turtle; oil spill; environmental impact; physiology;

00495

Fritts, T.H.; Reynolds, R.P. 1981. Pilot study of the marine mammals, birds, and turtles in OCS areas of the Gulf of Mexico. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-81/36.

ABSTRACT: Aerial surveys of marine mammals, birds, and turtles were conducted at four subunits of the Gulf of Mexico from August to December 1979. This Pilot Study was designed to develop techniques and to collect preliminary data on the vertebrate faunas of outer continental shelf (OCS) waters. This information, once expanded to include an adequate sample size, will be important to evaluating effects of oil and gas development in offshore areas. Surveys were conducted at altitudes of 91 and 228 m. The 91-m surveys were superior for detecting and identifying birds and turtles, while more area could be surveyed for larger animals at 228 m. Waters within 111 km of shore were sampled at a 3:1 ratio in relation to waters 111 to 222 km offshore. Texas subunits extended beyond the continental shelf, but Florida subunits did not. Observations were made on 12 mammal, 35 bird, and 5 turtle taxa. Sperm whales were documented in waters off Texas. Marine turtles were common in the eastern Gulf but virtually absent from the western areas studied. Differences in dolphin faunas in the eastern and western subunits were noted and potential north-south movements in response to season were noted on both sides of the Gulf of Mexico. Additional survey areas and more frequent samples emphasizing seasonal variation on successive years are required for making more accurate conclusions and effective management decisions relevant to OCS development.
KEYWORDS: Gulf of Mexico; biology; marine mammal; bird; turtle; endangered species;

00496

Fruge, D.J. 1978. Larval development and distribution of Micropogon undulatus and Leiostomus xanthurus and larval distribution of Mugil cephalus and Breqmaceros atlanticus off the southeastern Louisiana coast. Masters thesis. Louisiana State University, Baton Rouge, LA. 76 p.

ABSTRACT: In this study, the larval development of the Atlantic croaker and the spot were examined. Also included are the results of short term larval distribution studies of the striped mullet and antenna codlet. Data were collected during November, 1974 at 41 stations.
KEYWORDS: Louisiana; coastal waters; biology; fish; croaker; spot; mullet;

00497

Fruge, D.W. 1982. Effects of wetland deterioration on the fish and wildlife resources of coastal Louisiana, p. 99-107. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences, and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: The vast wetlands of the Louisiana Coastal Region (LCR) are of national importance to fish and wildlife. These wetlands are winter habitat for one-fourth of the North American dabbling duck population, a large portion of the Mississippi Flyway's diving ducks, and over 400,000 geese. Coastal Louisiana also supports numerous other migratory birds, many of which nest in its wetlands. The LCR marshes produce the largest fur harvest in North America, and support the largest volume of estuarine-dependent fish and shellfish landings in the United States. Fish and wildlife related recreation in the LCR is also extensive, including over 5 million man-days of saltwater fishing in 1975 and 676,000 man-days of waterfowl hunting during the 1977-78 season. Prior studies documented an annual land loss rate of over 42.7 km**2 (16.5 mi**2)/yr in the LCR. More recent investigations indicate that this rate of wetland loss has more than doubled since 1956. Wetland deterioration, which is partially attributable to natural causes, has been greatly accelerated by human influences such as navigation channel excavation, agricultural drainage, and construction of mainline Mississippi River levees that have prevented freshwater and sediment overflow into adjacent subdelta marshes. Continued wetland deterioration may lead to serious declines in estuarine-dependent fish and shellfish harvest, fur catch, waterfowl habitat, and related fish and wildlife productivity.
KEYWORDS: Louisiana; marsh; biology; ecology; erosion; wildlife; fish; environmental impact; dredging;

00498

Fry, B. 1981. Natural stable carbon isotope tag traces Texas shrimp Penaeus aztecus migrations. U.S. Natl. Mar. Fish. Serv. Fish. Bull. 79 (2):337-346.

ABSTRACT: A 1978 spring and early summer survey of Texas brown shrimp, P. aztecus, showed that stable carbon isotope (13C/12C or .delta.13C) analysis is useful for tracing shrimp movements. At least 4 isotopically distinct shrimp feeding grounds (3 estuarine and 10 offshore) exist along the Texas coast. Mean .delta.13C values for brown shrimp in these feeding grounds during the spring and early summer were -12.8 to -15.4 (sea grass meadows), -16.2 to -16.8 (offshore), -17.9 to -19.6 (open bays, group 1) and -20.1 to -21.7 (open bays, group 2). Longer term seasonal studies offshore and at 2 sea grass stations showed that shrimp .delta.13C values become less negative by 1.2-2.4.permill. in the fall vs. spring/early summer. Many small subadult brown shrimp collected offshore and during outgoing tides in a channel leading to the offshore Gulf of Mexico had .delta.13C values typical of individuals in sea grass meadows. These and possibly other shallow-water habitats appear to supply more shrimp to south Texas offshore fisheries than do deeper estuarine bays.
KEYWORDS: Texas; estuary; coastal waters; biology; chemistry; stable isotope; shrimp;

00499

Fry, B. 1984. Fish and shrimp migrations in the northern Gulf of Mexico analyzed using stable carbon, nitrogen, and S isotope ratios. U.S. Natl. Mar. Fish. Serv. Fish. Bull. 81(4):789-802.

ABSTRACT: Natural stable isotope tags were used in the northern Gulf of Mexico to interpret migrations of 5 commercial fish and shrimp species: Leiostomus xanthurus, Micropogonias undulatus, Penaeus aztecus, P. duorarum and P. setiferus. Along the south Texas and Florida coasts, isotopic analyses showed that seagrass meadows and possibly other shallow estuarine habitats are important feeding grounds for shrimp that are later caught in offshore fisheries. Thus stable C, N and S values of juvenile shrimp in grassflats coincided with isotopic values of small shrimp collected offshore. These values were -11 to -14.permill. for .delta.13C, and +6 to +8.permill. for both .delta.15 N and .delta.34S. In contrast to these south Texas and Florida results, .delta.13C, .delta.15N, and .delta.34S values showed a 2nd pattern off the Louisiana and north Texas coasts. This difference was most pronounced in the .delta.13C values which ranged from -17 to -24.permill. instead of -11 to -14.permill. Because isotopic values were similar in Spartina marshes and open bays along this northern coast, no conclusions could be reached about the relative importance of Spartina marshes as inshore feeding grounds. During feeding and growth offshore, eventual convergence about offshore isotopic values should result for the migratory species studied. Striking differences in convergence patterns were evident for the 5 spp., ranging from close convergence at small, subadult sizes (P. aztecus and P. duorarum) to nonconvergence among adults (L. xanthurus). These differences point to contrasts in the basic life history patterns of migration (especially the juvenile vs. adult size at which offshore migration occurs) and 1 sp. showed that isotopic methods can trace yearly variations in these patterns.
KEYWORDS: Texas; Florida; estuary; coastal waters; biology; chemistry; stable isotope; shrimp; fish;

00500

Fry, B.; Anderson, R.K.; Entzeroth, L.C.; Bird, J.L.; Parker, P.L. 1984. (13)C enrichment and oceanic food web structure in the northwestern Gulf of Mexico. Contrib. Mar. Sci. 27:49-63.

ABSTRACT: The use of delta (13)C measurements to indicate trophic levels of offshore animals was tested by analyzing four components of food webs in the northwestern Gulf of Mexico. A progression of increasing (13)C contents (less negative delta (13)C values) occurred from POC (-21.7 ppt.) to zooplankton (-20.2) to benthic crustacean gut contents (-17.8 ppt.) to whole benthic crustaceans (-16.9 ppt.), so that the degree of (13)C enrichment functioned as a crude indicator of trophic level. Six transects made off Texas and Louisiana from near shore to approximately 160 m during 1979 and 1980 showed that considerable seasonal and spatial variation occurred in this average pattern of (13)C enrichment, and that this variation was not linked to inputs of terrestrial carbon. Benthic crustaceans collected in the same trawl had very similar delta (13)C values (within 1.3 ppt.), regardless of species. Shipboard experiments showed that assimilation could account for the observed 0.9 ppt. (13)C enrichment in these animals vs. their diets. While considerable isotopic variation occurs offshore and complicates simple assessment of trophic level from (13)C enrichment data, reduced isotopic variation appears useful for identifying consumers at higher trophic levels.
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; biology; ecology; stable isotope; benthos;

00501

Fry, B.; Parker, P.C. 1979. Animal diet in Texas seagrass meadows: delta C-13 evidence for the importance of benthic plants. Estuar. Coast. Mar. Sci. 8:499-509.

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; flora; seagrass; stable isotope; benthos;

00502
Fucik, K.W. 1974. The effects of petroleum operations on the phytoplankton ecology of Louisiana coastal waters. Master's thesis. Texas A&M University, College Station, TX. 82 p.

ABSTRACT: This study was part of the Offshore Ecology Investigation, conducted to assess the effects of oil and gas operation on the marine environment of coastal Louisiana. At a Platform station and a Control station, phytoplankton standing crop and production were measured, along with temperature, salinity, and nutrient concentrations. Drilling activities apparently had a negligible effect on phytoplankton communities. A regression analysis model was developed for primary production as a function of light intensity and nutrient concentrations.
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; oil and gas; biology; plankton; environmental impact; flora; primary production; Offshore Ecology Investigation;

00503
Fucik, K.W.; El-Sayed, S.Z. 1979. Effect of oil production and drilling operations on the ecology of phytoplankton in the OEI study area, p. 325-353. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The offshore ecology investigation. Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Rice University, Houston, TX.

ABSTRACT: Between June 1972 and January 1974, twelve cruises were made to study photosynthetic rates and the standing crop of phytoplankton off the Louisiana coast. Data from a production platform were compared with data from a control station 6 miles northeast of the platform, with regard to photosynthetic activity of phytoplankton, chlorophyll a as a measure of the standing crop,species composition, and nutrient salts. Seasonal variations in all categories were observed at the platform and control station. Chlorophyll a values were lowest in November 1972 and January 1973. Highest standing crop values were recorded in April 1973, during the bloom of Skeletonema costatum. The OEI study area is considered one of the most productive areas of phytoplankton in the Gulf. Our investigation showed no deleterious effects from the oil production platform.
KEYWORDS: Louisiana; coastal waters; biology; oil and gas; environmental impact; plankton; chlorophyll; Offshore Ecology Investigation;

00504
Fucik, K.W.; Show, I.T. 1981. Environmental synthesis using an ecosystems model, p. 329-353. In B.S. Middleditch [ed.], Environmental effects of offshore oil production: the Buccaneer Gas and Oil Field Study. Marine Science Series, vol. 14. Plenum Press, New York.

ABSTRACT: The first attempt at using a multidisciplinary approach to evaluate the effects of offshore oil and gas production on the marine environment was conducted from 1972-1974 off the Louisiana coast. The results of the Offshore Ecology Investigation (OEI), as it was called, have recently been published (Ward et al., 1979). This was followed by a BLM-sponsored study in 1977-1979 in the same general area though smaller in scope than the OEI studies. The results of the BLM study are presently being evaluated (Defenbaugh, personal communication). The Buccaneer program differs from these other studies in that a modeling work unit has been incorporated into the overall study design to aid in the synthesis and integration of the disciplinary data. This represents one of the first attempts at applying a model for marine environmental assessment.
KEYWORDS: Texas; continental shelf; oil and gas; biology; ecology; environmental impact; model; Buccaneer Field;

00505
Fuller, D.A. 1978. The habits, distribution, and incidental capture of sea turtles in the Gulf of Mexico. In Gulf of Mexico Fishery Management Council, Tampa, FL. Appendix A, draft environmental impact statement and fishery management plan for the shrimp fishery of the Gulf of Mexico, United States waters. 41 p.

ABSTRACT: This report includes detailed information on the six species of sea turtles found in the Gulf of Mexico. Included for each species are topics on distribution, breeding habits, growth and mortality, foraging and food habits, migration and population status. In addition, distribution of sea turtles in the Gulf of Mexico and discussion of incidental captures in shrimp trawls are also included.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; biology; ecology; turtle; endangered species;

00506

Gaddis, L.R.; Mouginis-Mark, P.J. 1985. Mississippi River outflow patterns seen by Seasat radar. Geology 13(4):227-230.

ABSTRACT: A new kind of ocean surface feature has been observed on Seasat synthetic aperture radar (SAR) images of the Mississippi River Birdfoot Delta and adjacent Gulf of Mexico waters. Although ocean surface wave patterns have been detected by Seasat SAR in several coastal areas, their origin was attributed to the interaction between oceanic currents and bottom topography. In contrast no such correlation was found between surface wave patterns and bathymetry at the Mississippi Delta, where the morphometry and distribution of the detected waveforms suggest a river discharge origin. Visible and infrared images acquired at other times generally support this hypothesis the boundaries of the turbid, cooler river water correspond well to those of the surface wave patterns detected by the Seasat SAR.
KEYWORDS: Louisiana; Mississippi River Delta; physical; remote sensing; current; wave;

00507

Gagliano, S.M. 1963. A survey of preceramic occupations in portions of south Louisiana and south Mississippi. Florida Anthropologist 16(4):105-132.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi; archaeology; prehistoric;

00508

Gagliano, S.M.; Culley, P.; Earle, D.W.; King, P.; Latiolais, C.; Light, P.; Rowland, A.; Shlemon, R.; van Beek, J.L. 1973. Environmental atlas and multiuse management plan for south-central Louisiana. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Rep. No. 18, Volume 1. 132 p.

ABSTRACT: The normally difficult problems of resource management and land use planning are further complicated in the coastal zone by the complexity of the natural setting, rich resource base, and trends of population increase. The Louisiana Coast, dominated by the Mississippi River Delta system, illustrates the classic elements of the problem. The area is exceptionally high in biological productivity. Unique natural beauty and a rich cultural heritage further identify these lowlands as a nationally important resource. As the origin and ecology of the region are products of deltaic processes, it can appropriately be described as a self maintaining natural system. Human activity has seriously altered the natural balance of this system. Massive environmental degradation has occurred during the past thirty years and the entire system may soon collapse. Primary causes of deterioration includes: 1) flood control and navigation improvement; 2) mineral extraction; 3) accelerated subsidence; 4) urban encroachment into wetlands; 5) water pollution. The problem of restoring the system's balance while allowing for projected growth and development has been addressed, and a multiuse management plan, based on analysis of natural and human processes operating in the area and land use suitability, has been proposed. Highways and other public works projects provide the mechanism for direction growth and development to environmentally suitable areas. Renewable resource areas are identified, and management priorities and guidelines outlined. A water resource management program calls for conservation of local runoff as well as directing the Mississippi River water and sediment for environmental maintenance and enhancement.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; biology; socioeconomics; oil and gas; ecology;

00509

Gagliano, S.M.; Kwon, H.J.; van Beek, J.L. 1970. Salinity regimes in Louisiana estuaries. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Rep. No. 2. 63 p.

ABSTRACT: An attempt has been made to inventory and reduce to some standard form measurements of physical and chemical parameters thought to provide indices of the estuarine environment. Priority was placed on salinity, temperature, water level fluctuations, turbidity, and other aspects of the water chemistry (pH, phosphates, nitrates, etc.), in that order. However, the short time frame of the study and the almost overwhelming amount of data available has made completion of an in-depth study of all parameters impossible. In fact, this report is confined primarily to salinity and some aspects of water temperature. Reliable salinity records from a few stations are available from the early 1930s, and since 1946 excellent daily records from more than fifty stations have been collected. In addition, a number of detailed surveys have been conducted in the Mississippi River mouth area, and in various bays and lakes. For the past 2 years salinity measurements have been made monthly at more than 150 stations by the Louisiana Wildlife and Fisheries Commission. In spite of this wealth of data, little attempt has been made to synthesize regional salinity conditions. Therefore, a primary step was the reduction of these data, analysis of salinity changes on monthly, annual, and long-term bases, and compilation of a atlas to depict distribution patterns.
KEYWORDS: Louisiana; estuary; chemistry; salinity; water quality; nutrient;

00510
Gagliano, S.M.; Meyer-Arendt, K.J.; Wicker, K.M. 1981. Land loss in the Mississippi River deltaic plain. Trans. Gulf Coast Assoc. Geol. Soc. 31:295-301.

ABSTRACT: Systematic measurements and comparisons of maps, black-and-white aerial photographs, and color infrared imagery taken at five periods within the interval from 1890-1978 have been used to document land loss and habitat change within the Mississippi River Deltaic Plain. The studies show that the long-term trend of net progradation, which persisted through most of the past 5000 years, was reversed during the late nineteenth century, and that during the twentieth century land-loss rates have accelerated geometrically. Within the 11,500 sq. mi. study area, land-loss rates have progressed from approximately 6.7 sq. mi./year in 1913 to a projected 39.4 sq. mi./ year in 1980. The greatest loss has occurred in the wetlands, but barrier islands and natural-levee ridges are also disappearing at a very high rate. The data can be used not only to document past changes, but also to project future conditions. The findings have great significance to fish and wildlife resources, flood-protection planning, and land ownership. Apparent causes of the high rates of land loss include the harnessing of the Mississippi River by levees and control structures which reduce tendencies toward natural diversion and funnel valuable sediments to deep, offshore waters. Additional factors include canal dredging and accelerated subsidence related to mineral extraction, both of which are often associated with saltwater intrusion. The net effect is a rapidly accelerating man- induced transgression of a major coastal system.
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; geology; erosion; remote sensing;

00511
Gagliano, S.M.; van Beek, J.L. 1970. Geologic and geomorphic aspects of deltaic processes, Mississippi Delta system. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Rep. No. 1. 140 p.

ABSTRACT: The general purpose of this project is to make a hydrologic and geologic study of the estuarine and adjacent wetlands area of Louisiana. The specific goals are: 1) Identification and evaluation of the physical and chemical parameters which, in their totality, comprise the estuarine environments; documentation of historical changes in these parameters; and projection of future changes in them. 2) Determination of the freshwater requirements so that a plan for more efficient utilization of Mississippi River outflow might be devised. 3) Development of a broad plan for effecting changes in the delta system which might enhance natural environments of the coastal zone.
KEYWORDS: Louisiana; Mississippi River Delta; estuary; marsh; geology; chemistry;

00512
Gagliano, S.M.; Weinstein, R.A.; Burden, E.K. 1975. Archaeological investigations along the Gulf Intercoastal Waterway: coastal Louisiana area. Coastal Environments Inc., Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; archaeology; prehistoric;

00513
Gaidry, W.J. 1974. Correlations between inshore spring white shrimp population densities and overwintering populations. Louisiana Wildlife and Fisheries Commission, Tech. Bull. No. 12. 18 p.

ABSTRACT: Biological samplings of offshore overwintering shrimp populations were compared mathematically to inshore spring white shrimp landings and possible correlations were examined. The samples were collected from 1970 to 1972.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; shrimp; fisheries;

00514
Gallaway, B.J. 1980. Environmental assessment of Buccaneer Gas and Oil Field in the northwestern Gulf of Mexico, 1975-1980. Volume 2. Pelagic, reef and demersal fishes, and macro-crustaceans/biofouling communities. National Marine Fisheries Service, Southeast Fisheries Center, Galveston, TX. NOAA Tech. Mem. Report to Environmental Protection Agency on Interagency Agreement No. 1AG-D5-E693-EO. 114 p.

ABSTRACT: Environmental and ecosystem alterations associated with the development and release of contaminants from an active gas and oil field were found to have been primarily related to the presence of the structures and the discharge of produced water. The presence of the structures contributed to turbulent mixing, and allowed for the development of a rich and diverse biofouling community. The resulting artificial reefs were found to serve as points of aggregation for nektonic and demersal reef fishes as well as species which prey upon them - particularly man. The produced waters contained low levels of contaminants and were toxic at varying degrees to all organisms tested. Measurable uptake of contaminants was apparently restricted to those species in the biofouling food chain, and there was no evidence of marked contaminant accumulation through food chain transfers. The effects of the recreational fisheries associated with petroleum platforms in the Gulf on the stocks of red snapper (Lutjanus campechanus) appear to represent a major area of concern. The recreational fishery is primarily accountable for the current, overfished state of red snapper stocks, and most of the sportfishing effort offshore Texas (and probably other areas) is expended at petroleum platforms.
KEYWORDS: Texas; continental shelf; oil and gas; biology; fish; fisheries; recreation; petroleum platform; environmental impact; Buccaneer Field;

00515
Gallaway, B.J. 1981. An ecosystem analysis of oil and gas development on the Texas-Louisiana continental shelf. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-81/27. 89 p.

ABSTRACT: The Texas-Louisiana shelf ecosystem in the Gulf of Mexico is described in terms of its physiographic, oceanographic, and biological characteristics and as a recipient of oil and gas development activities and effluents. The northeast sector of the ecosystem is influenced by Mississippi River discharge, whereas high-salinity Caribbean water affects the southwest sector. Soft-bottom communities are prominent, characterized by economically valuable penaeid shrimps. The coral reef communities are more important than would normally be assumed. Pelagic communities are little known and harbor only a few commercially valuable species. Observed effects of oil and gas development activities and effluents are described.
KEYWORDS: Texas; Louisiana; continental shelf; oil and gas; physical; biology; ecology; reef; shrimp; fish; environmental impact;

00516
Gallaway, B.J.; Lewbel, G.S. 1982. The ecology of petroleum platforms in the northwestern Gulf of Mexico: a community profile. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/27. 106 p. (Also Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. Open-File Rep. 82-03.)

ABSTRACT: The primary objective of this community profile is to consolidate the ecological information pertaining to the interaction between petroleum platforms in the northwestern Gulf of Mexico and the resident biota. Offshore petroleum platforms represent a relatively new (and perhaps short-lived) biological habitat in the northwestern Gulf which is characterized by distinctive faunal assemblages and species associations. Characterizations of the total area and nature of petroleum platform habitats and a review of the pertinent biological literature are followed by descriptions of the biological assemblages in terms of their composition and community attributes. Some of the values of these biological resource units to man are then summarized. Finally, some of the management implications of the value judgments are presented and recommendations for preservation of the platform resource are provided.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; oil and gas; ecology; petroleum platform; benthos; fish;

00517
Gallaway, B.J.; Martin, L.R.; Howard, R.L. 1988. Northern Gulf of Mexico continental slope study, annual report: Year 3. Vol. I, Executive summary. Vol. II, Technical report. Report to the Minerals Management Service, New Orleans, LA. OCS studies MMS 87-0059 and 87-0060. Contract No. 14-12-0001-30212.

ABSTRACT: The Minerals Management Service funded a four-year investigation of the continental slope environments of the northern Gulf of Mexico. This is the third annual report. The study objectives were (1) to determine the abundance, structure, and distribution of animal communities in the deep sea in the Gulf of Mexico; (2) to determine the hydrographic structure of the water column and bottom conditions; (3) to determine and compare sedimentary characteristics; (4) to relate differences in biological communities to hydrographic, sedimentary, and geographic variables; (5) to assess seasonal changes in biological communities in terms of abundance, structure, animal size, and reproductive state; and (6) to measure present levels of hydrocarbon contamination in sediments and selected animals prior to, and in anticipation of, petroleum resource development beyond the shelf-slope break. Three transects were established perpendicular to the slope, each with five stations. One transect was located in each of the three Gulf of Mexico Planning Areas (Eastern, Central, and Western). Average sample depths along each transect were chosen to correspond to previously proposed faunal zones.
KEYWORDS: Texas; Louisiana; Florida; continental slope; biology; chemistry; geology; sediment; organic carbon; hydrocarbon; stable isotope; benthos; fish; ecology; chemosynthesis;

00518
Gallaway, B.J.; Martin, L.R.; Howard, R.L.; Boland, G.S.; Dennis, G.S. 1981. Effects on artificial reef and demersal fish and macrocrustacean communities, p. 237-299. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: This report synthesizes the observed effects of oil and gas activities on biological systems and fisheries at the Buccaneer Oil and Gas Field. Demersal fishes and macrocrustaceans, the biofouling community, and reef and pelagic fishes were used as indicators of impact.
KEYWORDS: Texas; continental shelf; oil and gas; biology; environmental impact; Buccaneer Field;

00519
Gallaway, B.J.; Reitsema, L.A. 1981. Shrimp and redfish studies, Bryan Mound brine disposal site off Freeport, Texas, 1979-1981. Volume III. Shrimp spawning site survey. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-67. 112 p. NTIS order No. PB81-249591.

ABSTRACT: In a study performed over October 1979-September 1980, immature brown shrimp were found to move through the nearshore marine environment in the vicinity of the brine diffuser offshore Freeport, Texas (and in the surrounding area) in two waves during summer as they emigrated from the estuaries to offshore spawning habitats. The major spawning habitat of brown shrimp is well offshore, generally located along the 40 to 50 m depth contours. White shrimp in the study area appeared mainly restricted to a band within about 8 km of the beach and spawning mainly occurred in these nearshore areas. The diffuser appears well-sited in terms of minimizing the impacts on spawning of these two shrimps.
KEYWORDS: Texas; coastal waters; continental shelf; biology; shrimp; brine disposal; environmental impact; Strategic Petroleum Reserve;

00520
Gallegos, S.C.; Gray, T.I., Jr.; Crawford, M. 1988. NOAA-9 observations of the 1986 red tide event off Texas. Center for Space Research, University of Texas, Austin, TX. Rep. No. CSR-88-2.

ABSTRACT: In late August and throughout the fall of 1986, a severe event of red tide occurred along the western limits of the Gulf of Mexico, affecting the coastal areas of Texas and the Tamaulipas province of Mexico. The bloom was initially reported from waters off Galveston Island, Texas, and in later stages from areas as far south as Tampico Bay, Mexico. Coincidentally, the Advanced Very High Resolution Radiometer (AVHRR) on board the NOAA-9 satellite observed this event during a period of clear weather that included September 10, 11, and 12, 1986. Digital data for these passes were acquired and processed at the Center for Space Research of the University of Texas at Austin. This paper describes the results of the analyses of these data and the capability of the AVHRR reflective data to monitor distributions of some phytoplankton concentrations at the ocean surface. Delineation of the extent of the red tide determined from AVHRR data was verified by helicopter flights and observations made by Texas state agencies.
KEYWORDS: Texas; coastal waters; biology; plankton; remote sensing;

00521
Galtsoff, P.S. [ed.]. 1954. Gulf of Mexico. Its origin, waters, and marine life. U.S. Fish Wildl. Serv., Fish Bull. 55(89). 604 p.

ABSTRACT: This volume is a compilation of knowledge of the Gulf of Mexico, including discussions of geology, physical and chemical oceanography, marine biology, and pollution problems. For the biota, a systematic account by phylum is presented.
KEYWORDS: Gulf of Mexico; biology; chemistry; geology; physical; socioeconomics; fisheries;

00522
Galtsoff, P.S.; Prytherch, H.F.; Smith, R.O.; Koehring, V. 1935. Effects of crude oil pollution on oysters in Louisiana waters. Bull. 18, U.S. Bur. Fish. 48:143-210.

ABSTRACT: In a study of Lake Barre, Timbalier Bay, Terrebonne Bay, and Lake Pelto, it was suspected that crude oil pollution was the chief cause of mortality among the oyster population. It was noted that oil in water is taken up by oysters, giving them an oily taste; also, oil pollution has a residual aspect, in that oil in bottom sediments is released from time to time by storms and by dredging and tonging. Various laboratory experiments were performed to evaluate the effects of oil on oysters.
KEYWORDS: Louisiana; estuary; Timbalier Bay; biology; oil and gas; environmental impact; oyster;

00523
Garcia, S.R. 1981. NOAA/NOSS system and its implications for aiding in the environmental management of a deepwater port on the Texas Gulf coast, p. 135-144. In Proceedings of the Institute of Environmental Sciences, 27th Annual Technical Meeting, Emerging Environmental Solutions for the Eighties, Los Angeles, CA, May 5-7, 1981. Energy and the environment, Vol. 2. Mt. Prospect, IL.

ABSTRACT: The objectives of this paper are (1) to delineate the problem of monitoring the environment in order to assess impact on five natural resources (impact that is expected to occur as a result of constructing and operating a deepwater port in Galveston); (2) to propose a solution to this problem by the use of environmental data provided by the NOAA/NOSS system; and (3) to outline an analytic and systematic approach to the establishment of an environmental monitoring center by taking into consideration the national, regional, and local actions and their consequences at the local level.
KEYWORDS: Texas; environmental impact; biology; remote sensing; shipping;

00524
Garofalo, D. 1982. Mississippi Deltaic Plain regional ecological characterization: an ecological atlas. Map narratives. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-81/16.

ABSTRACT: The purpose of the Mississippi Deltaic Plain Region (MDPR) Characterization study is to compile existing information about the biological, physical, and social sciences for coastal Louisiana and Mississippi from Vermilion Bay, Louisiana, to the Mississippi-Alabama State line. The MDPR Ecological Atlas consists of composited overlay topic information with thirteen base maps, to produce a total of 78 maps, and a volume of map narratives. Federal and State decision makers, among others, may use these maps and narratives for coastal planning and management, and in planning for Outer Continental Shelf oil and gas development. This study is one of a series of characterizations of coastal ecosystems being produced by the U.S. Fish and Wildlife Service. Additional studies include the Chenier Plain of Louisiana and Texas, the sea islands of Georgia and South Carolina, the rocky coast of Maine, the coast of northern and central California, the Pacific Northwest (Oregon and Washington), and the Texas barrier islands.
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; biology; geology; physical; oil and gas; socioeconomics;

00525
Garofalo, D. 1982. Mississippi Deltaic Plain regional ecological characterization: an ecological atlas. Map numbers A-1 through F-13. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-81/16.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; biology; geology; physical; oil and gas; socioeconomics; remote sensing;

00526
Garrison, L.E.; Martin, R.G. 1973. Geologic structures in the Gulf of Mexico basin. U.S. Geological Survey, Prof. Pap. No. 773. 85 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; deep sea; geology; geologic history; stratigraphy;

00527

Gaston, G.R.; Rutledge, P.A.; Walther, M.L. 1985. The effects of hypoxia and brine on recolonization by macrobenthos off Cameron, Louisiana. Contrib. Mar. Sci. 28:79-93.

ABSTRACT: Screened defaunated sediment containers were placed on racks 100 m downcurrent and 10 km upcurrent of a Department of Energy brine diffuser located in the nearshore Gulf of Mexico 20 km southwest of Cameron, Louisiana. Samples were periodically collected from both racks over a period of 14 wk to assess recolonization by the macrobenthos. A disparity in dissolved oxygen levels of the 2 sites led to a disruption of recolonization at one site, and a subsequent dissimilar temporal pattern there. This difference in recolonization of the 2 sites was apparent in analyses of numerically dominant species and feeding groups until the tenth week of the study. By the end of the study, however, differences between diffuser and control sites were limited to earliest colonizers (surface deposit feeders and suspension feeders) and carnivores, and did not occur in the subsurface deposit feeders that colonized after the severe hypoxia. High densities of juveniles among the early colonists suggested that initial colonization was primarily established by larval settlement rather than adult immigration.
KEYWORDS: Louisiana; coastal waters; oil and gas; biology; brine disposal; environmental impact; hypoxia; dissolved oxygen; benthos;

00528

Gazey, W.J.; Gallaway, B.J.; Fechhelm, R.C.; Martin, L.R.; Reitsema, L.A. 1982. Shrimp population studies: Bryan Mound Brine disposal site off Freeport, Texas, 1981-1982. Volume 1. Shrimp mark-release and port interview sampling survey of shrimp catch and effort with recovery of recaptured tagged shrimp. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-83012601. 325 p. NTIS order No. PB83-175869.

ABSTRACT: This report describes the results of a continuation of two work units conducted under the Shrimp Population Studies in relation to the Bryan Mound brine disposal site. The work units supplemented the historical NMFS efforts for the construction of a Gulf-wide mark-recapture data set as well as the Government's Trip Interview Sampling Survey of shrimp catch and fishing effort.
KEYWORDS: Texas; coastal waters; biology; oil and gas; shrimp; environmental impact; brine disposal; Strategic Petroleum Reserve;

00529

Gazey, W.J.; Gallaway, B.J.; Fechhelm, R.C.; Martin, L.R.; Reitsema, L.A. 1982. Shrimp population studies. West Hackberry and Big Hill brine disposal sites off southwest Louisiana and upper Texas coasts, 1980-1982. Volume 3. Shrimp mark-release and port interview sampling survey of shrimp catch and effort with recovery of recaptured tagged shrimp. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-83012603. 322 p. NTIS order No. PB83-172270.

ABSTRACT: This report describes the results of two work units conducted under the Shrimp Population Studies in relation to the West Hackberry and Big Hill brine disposal sites. The work units supplemented the historical NMFS efforts for the construction of a Gulf-wide mark-recapture data set as well as the Government's Trip Interview Sampling Survey of shrimp catch and fishing effort. In addition, analyses were conducted on the entire mark-release-recapture data set (1977-1982) to determine rates and functions of growth, mortality and migration of white and brown shrimp.
KEYWORDS: Texas; Louisiana; coastal waters; biology; oil and gas; shrimp; fisheries; environmental impact; brine disposal; Strategic Petroleum Reserve;

00530

Gealy, B.L. 1955. Topography of the continental slope in northwest Gulf of Mexico. Geol. Soc. Am. Bull. 66:203-228.

ABSTRACT: Topographic charts of the continental slope in the northwest Gulf were constructed largely from soundings from unpublished hydrographic surveys by the U.S. Coast and Geodetic Survey.
KEYWORDS: Gulf of Mexico; continental slope; geology;

00531

Gearing, P.; Gearing, J.N.; Lytle, T.F.; Lytle, J.S. 1976. Hydrocarbons in 60 northeast Gulf of Mexico shelf sediments: A preliminary survey. Geochem. Cosmochim. Acta 40:1005-1017.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; continental shelf; oil and gas; chemistry; hydrocarbon; sediment;

00532
George, R.Y.; Thomas, P.J. 1979. Biofouling community dynamics in Louisiana shelf oil platforms in the Gulf of Mexico, p. 553-574. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation. Effects of oil drilling and production in a coastal environment. Rice Univ. Studies, Vol. 65, Nos. 4 and 5.

ABSTRACT: This paper presents the quantitative results on the standing stock and population densities of the fouling community on the submerged oil platform structures in the area of the Offshore Ecology Investigation on the Louisiana shelf. Climax fouling community was investigated on the basis of quantitative samples and in situ photographs. Patterns in biomass and density of seasonal fouling settlement was explained on the basis of periodic examination of in situ test panels. Oil platforms act as artificial reefs, offering large submerged surfaces for promoting biofouling growth in this environment. Comparisons of conditions today with baseline information obtained two decades ago from platforms point out some faunal changes.
KEYWORDS: Louisiana; coastal waters; biology; oil and gas; petroleum platform; Offshore Ecology Investigation;

00533
Geraci, J.R.; St. Aubin, D.J. 1982. Study of the effects of oil on cetaceans. Report to the Bureau of Land Management, Atlantic OCS Office, New York, NY. Contract No. 14-12-0001-29169. NTIS order No. PB83-1154991.

ABSTRACT: Because of the concern about potential environmental consequences of offshore oil spills, the Minerals Management Service sponsored studies to investigate the proximate and ultimate effects of direct contact with petroleum compounds on marine mammals. The objectives were (1) to determine detection and avoidance of surface oil by the bottlenose dolphin; (2) to assess the effects of oil and gasoline on marine mammal skin; (3) to examine bioaccumulation of petroleum residues in marine mammal tissues; (4) to determine the effects of oil on baleen fouling in baleen whales; and (5) to characterize the cutaneous response in bottlenose dolphins to materials of potential value in cetacean marking programs.
KEYWORDS: biology; oil and gas; chemistry; hydrocarbon; environmental impact; marine mammal;

00534
Geraci, J.R.; St. Aubin, D.J. 1985. Expanded studies of the effects of oil on cetaceans. Report to the Minerals Management Service, Atlantic OCS Office, Vienna, VA. Contract No. 14-12-0001-29169. 144 p.

ABSTRACT: This was a continuation of earlier studies by the same authors. Because of the concern about potential environmental consequences of offshore oil spills, the Minerals Management Service sponsored studies to investigate the proximate and ultimate effects of direct contact with petroleum compounds on marine mammals. The objectives were (1) to determine detection and avoidance of surface oil by the bottlenose dolphin; (2) to assess the effects of oil and gasoline on marine mammal skin; (3) to examine bioaccumulation of petroleum residues in marine mammal tissues; (4) to determine the effects of oil on baleen fouling in baleen whales; and (5) to characterize the cutaneous response in bottlenose dolphins to materials of potential value in cetacean marking programs.
KEYWORDS: biology; oil and gas; chemistry; hydrocarbon; environmental impact; marine mammal;

00535
Gettleson, D.A. 1976. An ecological study of the macrofauna and meiofauna of a soft bottom benthic community on the Texas continental shelf. Ph.D. dissertation. Texas A&M University, College Station, TX. 257 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; ecology; benthos;

00536
Gettleson, D.A. 1978. Ecological impact of exploratory drilling: a case study. In Symposium, Energy/Environment '78. Society of Petroleum Industry Biologists, 22-24 August 1978, Los Angeles, CA.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; Flower Garden Banks; reef; oil and gas; biology; chemistry; benthos; environmental impact; drilling fluid; trace metal;

00537
Gettleson, D.A. 1980. Effects of oil and gas drilling operations on the marine environment, p. 371-411. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; oil and gas; chemistry; biology; environmental impact; drilling fluid; cuttings; trace metal; sediment;

00538
Gettleson, D.A.; Laird, C.E. 1980. Benthic barium levels in the vicinity of six drill sites in the Gulf of Mexico, p. 739-788. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; chemistry; oil and gas; trace metal; drilling fluid;

00539
Geyer, R.A. 1950. A bibliography of the Gulf of Mexico. Tex. J. Sci. 2(1):44-93.

ABSTRACT: An extensive bibliography on the Gulf of Mexico based on the (then) currently available literature. Topics include oceanography, marine biology, geology, geophysics, and meteorology. Includes discussion of state of knowledge of the Gulf.
KEYWORDS: Gulf of Mexico; biology; geology; chemistry; physical; bibliography;

00540
Geyer, R.A. 1950. The occurrence of pronounced salinity variations in Louisiana coastal waters. J. Mar. Res. 9:100-110.

ABSTRACT: Salinity variations of daily to seasonal durations are derived from 700 water samples obtained from coastal waters of western Louisiana.
KEYWORDS: Louisiana; physical; coastal waters; salinity;

00541
Geyer, R.A. 1955. Effect of the Gulf of Mexico and the Mississippi River on hydrography of Redfish Bay and Blind Bay. Publ. Inst. Mar. Sci. 4(1):157-168.

ABSTRACT: None
KEYWORDS: physical; Gulf of Mexico; continental shelf; Mississippi River; salinity;

00542
Geyer, R.A. [ed.]. 1980. Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: This book contains 19 chapters on topics relating to oil and gas operations and environmental impacts, with most of the information from the Gulf of Mexico.
KEYWORDS: Gulf of Mexico; oil and gas; biology; chemistry; hydrocarbon; drilling fluid; cuttings; petroleum platform; environmental impact; oil spill;

00543
Geyer, R.A.; Giammona, C.P. 1980. Naturally occurring hydrocarbons in the Gulf of Mexico and Caribbean sea, p. 37-106. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon; seep;

00544
Geyer, R.A.; Sweet, W.M. 1973. Natural hydrocarbon seepage in the Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 23:158-169.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Mississippi River Delta; geology; oil and gas; seep; hydrocarbon;

00545
Giam, C.S.; Chan, H.S.; Neff, G.S. 1976. Concentrations and fluxes of phthalates, DDTs and PCBs to the Gulf of Mexico, p. 375-386. In H.C. Windom and R.A. Duce [ed.], Marine Pollutant Transfer. Lexington Books, Lexington, MA.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; Mississippi River Delta; chemistry; hydrocarbon; pesticide; sediment; PCB;

00546

Giam, C.S.; Chan, H.S.; Neff, G.S. 1976. Distribution of n-parrafins in selected marine benthic organisms. Bull. Environ. Contam. Toxicol. 16(1):37.

ABSTRACT: The South Texas Outer Continental in the Gulf of Mexico has recently been approved for leasing for oil exploration, thus providing an excellent area for studies on the effects of oil exploration and drilling on the marine environment before, during, and after such activities. In order to determine the effects of this activity on the heavy hydrocarbon content of benthic organisms, we conducted a survey of the n-paraffin content in several species of benthic epifauna. Since there is little information on the hydrocarbon content and distribution of most species of marine organisms, the data obtained from these analyses should not only be important for this study, but should also be useful in forming a data base for assessing whether organisms of the same species from other areas have been contaminated by oil. For these studies, organisms representing three different phyla (squid, shrimp, and fish) were analyzed for n-parrafins. The specimens were collected in January and April, 1974.
KEYWORDS: Texas; continental shelf; chemistry; hydrocarbon; oil and gas; fish; shrimp; squid; STOCS;

00547

Giam, C.S.; Chan, H.S.; Neff, G.S. 1978. Phthalate ester plasticizers, DDT, DDE, and polychlorinated biphenyls in biota from the Gulf of Mexico. Mar. Poll. Bull. 9:249-251.

ABSTRACT: The levels of phthalate ester plasticizers, DDT, DDE and polychlorinated biphenyls (PCBs) were determined in the tissues of 18 species of marine organisms from the northwestern Gulf of Mexico. Low levels of the most widely used phthalate, di(2-ethylhexyl) phthalate, were found in the majority of the samples; no other phthalates were detected. DDT, DDE, and PCBs were found in all samples, but at somewhat lower levels than those found in our 1971 survey. A decrease in p,p'-DDT/p,p'-DDE ratios relative to 1971 was also noted.
KEYWORDS: Texas; Louisiana; chemistry; hydrocarbon; pesticide; PCB;

00548

Giam, C.S.; Murray, H.E.; Ray, L.E. 1981. Phthalic acid esters, total DDTs, and polychlorinated biphenyls in marine samples from Galveston Bay, Texas. Bull. Environ. Contam. Toxicol. 26(6):769-774.

ABSTRACT: None
KEYWORDS: Texas; Galveston Bay; estuary; chemistry; pesticide; PCB;

00549

Giammona, C.P. 1980. Biota near natural marine hydrocarbon seeps in the western Gulf of Mexico, p. 207-228. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Mexico; estuary; oil and gas; chemistry; hydrocarbon; seep;

00550

Gillespie, M.C. 1971. Analysis and treatment of zooplankton of estuarine waters of Louisiana, p. 109-175. In W.S. Perret [ed.], Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase IV, Biology. Louisiana Wildlife and Fisheries Commission, New Orleans, LA.

ABSTRACT: Biological sampling was conducted in six estuarine study areas of Louisiana. A total of 82 trawl, 12 seine, and 28 plankton stations were sampled weekly, bi-weekly, or monthly, from April 1968 through March 1969. A total of 100 species of fishes and 19 species of invertebrates were collected. Areal and seasonal distribution of these species are discussed in the following pages. Also presented are data on historical commercial fisheries. Zooplankton results indicated a spring and fall maximum in all six study areas. Total counts ranged from a minimum of 116 per 100/m3 to a maximum of 377,393 per 100/m3.
KEYWORDS: Louisiana; biology; plankton; estuary;

00551

Ginsburg, I. 1931. On the differences in habitat and size of Cynoscion arenarius and Cynoscion nothus. Copeia 1931(3):144.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; ecology; fish; fisheries; seatrout;

00552
Gittings, S.R. 1983. Hard-bottom macrofauna of the East Flower Garden brine seep: impact of a long term, point-source brine discharge. M.S. thesis. Texas A&M University, College Station, TX. 72 p.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; reef; seep; benthos;

00553
Goedicke, T.R. 1955. Origin of the pinnacles on the continental shelf and slope of the Gulf of Mexico. Tex. J. Sci. 7:149-159.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; geologic history; reef;

00554
Goldberg, S.R. 1980. Use of Griffins yield model for the Gulf of Mexico shrimp fishery. U.S. Natl. Mar. Fish. Serv. Fish. Bull. 78 (4):973-977.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp; model;

00555
Goodier, J.L.; Siclari, R.J.; Garrity, P.A. 1983. Spill prevention and fail-safe engineering for petroleum and related products. Noyes Data Corporation, Park Ridge, NJ.

ABSTRACT: An attempt has been made to cover every facet of spill prevention. Special emphasis is given to fail-safe engineering as an approach to preventing spills from the predominant cause-human failure. The book addresses state-of-the art spill prevention practices and automation techniques that can reduce spills caused by human error. Whenever practical, implementation costs are provided to aid equipment acquisition and installation budgeting. To emphasize the need for spill prevention measures, historic spills are briefly described, after which remedial action is defined in an appropriate section of the manual. The section on plant security goes into considerable depth, since few security guidelines have been provided for industrial facilities that transfer, store, and process petroleum and related products.
KEYWORDS: oil and gas; oil spill; environmental impact;

00556
Goodwin, J.M. IV; Finucane, J.H. 1985. Reproductive biology of blue runner, Caranx crysos, from the eastern Gulf of Mexico. N.E. Gulf Sci. 7(2):139-146.

ABSTRACT: Blue runner were obtained from commercial fisheries in south Florida, northwest Florida, and the Mississippi Delta. Monthly mean gonadosomatic indices indicated that peak spawning occurred in June, July, and Aug. for all areas with a secondary peak in Oct. for northwest Florida. The spawning season was confirmed for the south Florida collection by histological examination of gonads. Probit analysis of 185 northwest Florida blue runner captured during peak spawning months indicated a length-at-maturity of 267 mm. Fecundity varied from 41,000 ova in a 243-mm-FL, 288-gram fish to 1,546,000 ova in a 385-mm-Fl, 1076-gram fish. Sex ratios were 1.15F:1M for Mississippi Delta, 1.66F:1M for northwest Florida and 1.91F:1M for south Florida.
KEYWORDS: Louisiana; Florida; Mississippi River Delta; biology; ecology; fish; fisheries;

00557
Goodwin, J.M. IV; Johnson, A.G. 1986. Age growth and mortality of blue runner Caranx crysos from the northern Gulf of Mexico. N.E. Gulf Sci. 8(2):107-114.

ABSTRACT: Estimates of age, growth and mortality for blue runner obtained from commercial fisheries in northwest Florida and the Mississippi delta were developed using otolith sections. The oldest fish was 11 years old, the largest was 460 mm fork length. Mean back-calculated fork lengths varied from 212 mm at age 1 to 422 mm at age 11. The von Bertalanffy equation for combined sexes was FLt =(1.e-0.35(t+1.07)) where FL = fork length (mm) and t = age (years). Regression equations for the interconversion of fork length (FL), standard length (SL), and total length (TL) were: TL = -7.4792 + FL (1.1938), (r = 1.00, .alpha. = 0.01), FL = 1.9453 + SL (1.0596), (r = 1.00, .alpha. =0.01), and TL = -5.1694 + SL (1.2651), (r = 0.99, .alpha. = 0.01). The weight-length relationship for combined sexes was W = 0.0000251355 FL2.94593 (N = 193, r = 0.98, .alpha. = 0.01) where W = whole body weight in grams and FL = fork length in millimeters. Estimates of annual mortality, determined by four methods, ranged from 0.41 to 0.53.
KEYWORDS: Louisiana; Florida; Mississippi River Delta; biology; fish;

00558

Gordon, W.R., Jr. 1987. Predicting recreational fishing use of offshore petroleum platforms in the central Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 189 p. (Diss. Abs. 48/06-A:1555).

ABSTRACT: With ever-increasing recreational fishing demands on natural habitats, artificial reefs provide an effective means for delivering additional opportunities for marine and freshwater fishermen. This study is based on the premise that a properly site artificial reefs for optimal human recreational use, a predictive model based upon the marine travel patterns and behavior of marine recreational fishermen is needed. This research used data gathered from a previous study that addressed the recreational fishing use of offshore oil and gas structures (Ditton and Auyong 1984). On-site data was also collected for use in this research. The primary research objective was to generate a predictive model that can be applied to artificial reef development efforts elsewhere. This study investigated the recreational user patterns of selected petroleum platforms structures in the Central Gulf of Mexico. The petroleum structures offshore from the Louisiana coastline provide a unique research tool. Although intended to facilitate the exploration and recovery of hydrocarbons, petroleum platforms also serve as defacto artificial reefs, providing habitat for numerous species of fish and other marine life. Petroleum platforms were found to be the principal fishing destinations within the study area. On-site findings reveal that marine recreational fishermen were as mobile on water, as they are on land. Fishermen traveled nearly fifty miles on water in pursuit of their recreation. Several platforms were fished during a typical outing. On-site findings were used to assist in the development of a predictive model. In attempting to predict the number of recreational craft observed at a study platform, several variables were found to be useful. They included: (1) distance between the closest launch site and a study platform, (2) the number of platforms associated with a study platform, (3) the number of platforms situated between the closest launch site and the study platform (intervening opportunities) and (4) the number of launch sites likely to be used in reaching the offshore study platform. The age, size, color and depth of water at a platform were found to be poor predictors of platform visitation.
KEYWORDS: Louisiana; coastal waters; continental shelf; oil and gas; fisheries; petroleum platform; recreation; model; socioeconomics;

00559

Gosselink, J.G. 1980. Tidal marshes - the boundary between land and ocean. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/15. 12 p.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; marsh; biology; ecology;

00560

Gosselink, J.G. 1984. The ecology of delta marshes of coastal Louisiana: a community profile. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-84/09. 134 p.

ABSTRACT: This document reviews and synthesizes ecological information and data on the extensive marshes of the Mississippi River Deltaic Plain. Over the past 6000 years, the river has built a delta onto the continental shelf of the Gulf of Mexico, covering about 23,900 square kilometers. This low land is primarily marshes and represents about 22% of the total coastal wetland area of the 48 coterminous United States. The delta is notable for its high primary productivity, its valuable fishery and fur industry, and the recreational fishing and hunting it supports. The Mississippi River delta marshes are subject to the unique problem of extremely rapid marsh degradation due to a complex mixture of natural processes and human activities that include worldwide sea-level rise; subsidence; navigation and extractive industry canal dredging; flood control measures that channel the river; and pollution from domestic sewage, exotic organic chemicals, and heavy metals.
KEYWORDS: Louisiana; marsh; Mississippi River Delta; biology; geology; ecology; vegetation; wildlife; environmental impact;

00561

Gosselink, J.G.; Cordes, C.L.; Parsons, J.W. 1979. An ecological characterization study of the Chenier Plain coastal ecosystem of Louisiana and Texas. Volume 1. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-78/9.

ABSTRACT: Socioeconomic and environmental information on the subject area was collected, reviewed and synthesized to produce this volume. The present physical setting of the Chenier Plain is described, as well as the geological history of the region. The effects of agricultural and oil and gas industries on the natural (biological) resources in each of six drainage basins are discussed. Habitat types in the Chenier Plain are described, and the impact of human activities on them are evaluated. The conversion of habitats from one type to another over a twenty-year period is documented. Life history information is provided for many of the important fish and wildlife species in the ecosystem.
KEYWORDS: Louisiana; Texas; estuary; marsh; barrier island; coastal waters; biology; geology; fisheries; oil and gas; ecology; environmental impact; fish; wildlife; socioeconomics;

00562
Gosselink, J.G.; Odum, E.P.; Pope, R.M. 1974. The value of the tidal marsh. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-SG-74-03. 3 p.

ABSTRACT: Natural tidal marshes are evaluated in monetary terms. By-product production (fisheries, etc.) on a per-acre basis yields a value of only about $100 per year, even when the whole value of the fishery is imputed to the marsh. More intensive uses, such as oyster aquaculture, which preserve many of the natural functions of the marsh-estuarine ecosystem, have a potential up to $1000 per acre per year. he potential for waste assimilation is much higher, about $2500 per acre per year for tertiary treatment. Summation of the noncompeting uses approaches an ecological life-support value of about $4000 per acre per year, based on the gross primary productivity (in energy terms) of the natural marsh, using a conversion ratio from energy to dollars based on the ratio of Gross National Product to National Energy Consumption. When these annual social values of $2500-4000 are income capitalized at 5% interest the estimated total social values are $50,000-$80,000 per acre. Some estuaries, such as the Potomac or the Hudson, are now performing waste assimilation work of even greater value but such estuaries are overloaded to the point of degradation. Analysis based on the total value of the life support role of a natural tidal marsh-estuary suggests that a strategy of optimization in Land use planning should replace, or supplement, reliance on the pricing system which is inadequate for preservation of natural systems that increase in value with the intensity of adjacent development.
KEYWORDS: Louisiana; coastal waters; marsh; biology; socioeconomics;

00563
Grady, D.; Levenson, T. 1983. The vanishing barrier beaches. Discover 4(9):68-74.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; barrier island; beach; geology; erosion; sea level; sedimentation;

00564
Grady, J.R. 1970. Distribution of sediment types northern Gulf of Mexico. National Marine Fisheries Service, Biological Laboratory, Galveston, TX. 1 p.

ABSTRACT: This is a sediment distribution map of the northern Gulf of Mexico. The map indicates the sediments from the shoreline to depths from 100 to 1000 meters.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; sediment;

00565
Graham, G. 1980. Hangs and bottom obstructions of the Texas-Louisiana Gulf. Texas A&M University, College Station, TX. Sea Grant pub.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; geology; reef; fisheries; hazard;

00566
Grant, W.E.; Griffin, W.L. 1979. A bioeconomic model of the Gulf of Mexico shrimp fishery. Trans. Am. Fish. Soc. 108:1-13.

ABSTRACT: A bioeconomic model of the brown shrimp (Penaeus aztecus) fishery in Galveston Bay, Texas and adjacent offshore waters accurately predicts the general trends in the seasonality of shrimp harvest and the distribution of the harvest in relation to size of shrimp and water depth.
KEYWORDS: Texas; Galveston Bay; estuary; coastal waters; biology; fisheries; socioeconomics; shrimp; model;

00567
Grant, W.E.; Isakson, K.G.; Griffin, W.L. 1981. A general bioeconomic simulation model for annual-crop marine fisheries. Ecol. Modelling 13:195-219.

ABSTRACT: A generalized bioeconomic simulation model of annual-crop marine fisheries is described and its use in marine fisheries management is demonstrated. The biological submodel represents the recruitment of new organisms into the fishery, the movement of organisms from one fishing area to another and from one depth to another, the growth of organisms and the mortality of organisms resulting both from natural causes and from fishing. The economic submodel represents the fishing effort exerted on each resource species, the monetary costs of fishing, the value of the harvest and the rent (or excess profits) to the fishery.
KEYWORDS: Gulf of Mexico; fisheries; biology; socioeconomics; model;

00568

Greenman, N.N.; LeBlanc, R.J. 1956. Recent marine sediments and environments of northwest Gulf of Mexico. Am. Assoc. Petrol. Geol. Bull. 40:813-847.

ABSTRACT: This paper presents the results of a study of 85 sediment cores taken in the northwestern Gulf. Recent sediments appear to be accumulating in five marine environments: (1) the continental shelf to about 600 ft (coarse textural facies consisting of sand, silty clay, and shell clay); (2) a group of isolated topographic highs at the outer edge of the shelf and upper slope; (3) the upper slope; (4) the lower slope; and (5) the eastern Sigsbee deep. The sediment facies pattern results from great volumes of sediment carried into the Gulf by several rivers, and from the transport of this sediment by a counterclockwise prevailing current.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; sediment;

00569

Griffin, G.M. 1979. Evaluation of the effects of oil production platforms on the turbidity of Louisiana shelf waters, p. 159-179. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; oil and gas; physical; turbidity; environmental impact; Offshore Ecology Investigation;

00570

Groue, K.J.; Lester, L.J. 1982. A morphological and genetic analysis of geographic variation among oysters in the Gulf of Mexico. Veliger 24(4):331-335.

ABSTRACT: Oysters collected (Crassostrea virginica) at 5 sites from Biloxi Bay, Mississippi to the Laguna Madre at the southern tip of Texas were analyzed for shell shape and five biochemical genetic markers. A statistical test showed that all of the samples were significantly different in morphology except the two most southern collections from the Laguna Madre and Aransas Bay, Texas. However, the statistical analysis of the biochemical genetic data demonstrates the genetic identity of all of the collections, except the one from the Laguna Madre. It is concluded that shell morphology is useful for determining environmental differences among oyster populations, but biochemical or genetic characters, or both, are necessary to study geographic differentiation in oysters.
KEYWORDS: Louisiana; Mississippi; Texas; estuary; Laguna Madre; Aransas Bay; biology; oyster; genetics;

00571

Guillen, G.J.; Palafox, D. 1985. The effects of weathered crude oil from the M/T ALVENUS spill on eggs and yolk-sac larvae of red drum Sciaenops ocellatus. Gulf Res. Rep. 8(1):15-20.

ABSTRACT: The British tanker M/T ALVENUS ran aground 16.1 km south of Cameron, Louisiana, on 30 July 1984. An estimated 10,157 MT of Venezuelan crude oil were spilled into the Gulf of Mexico. Approximately 2,700 MT of the heavy viscous oil impacted beaches and an additional 1,360 MT remained in the subtidal areas of west Galveston Island, about 160 km southwest of the accident site. Red drum, which spawn in the Gulf of Mexico in the fall, could have been seriously impacted by oil concentrations potentially lethal to eggs or larvae. The impact of weathered crude oil on the survival, growth, and morphological development of red drum eggs and larvae was assessed in the laboratory. Equal numbers of eggs were randomly assigned to one of six treatments of weathered crude oil (control, 50, 100, 500, 1,000 and 2,000 mg/l) and observed through the yolk-sac stage. There were no differences in mean survival, length of surviving larvae, and frequency of morphological abnormalities among treatments (alpha=0.05). In addition, the frequency of spinal deformity and abnormal mouth development was low in all treatments. The initial chemical composition of the fresh crude oil and the seasonally warm weather contributed to the natural degradation of the soluble toxic components.
KEYWORDS: Louisiana; Texas; beach; coastal waters; biology; chemistry; oil and gas; oil spill; hydrocarbon; environmental impact; fish; fisheries; drum;

00572

Guillory, V. 1979. A possible explanation for the absence of endemic fishes in Louisiana. Fla. Sci. 42(4):253-255.

ABSTRACT: The absence of endemic Louisiana fishes may be attributed to historical and physiographic factors. The periodic inundation of the Mississippi Embayment by the Gulf of Mexico during early Pleistocene interglacial periods obliterated the freshwater ichthyofauna. Afterwards, the ample dispersal mechanisms available prevented isolation and subsequent speciation of fishes in Louisiana.
KEYWORDS: Louisiana; biology; fish; geology; biogeography;

00573
Gulf of Mexico Fisheries Management Council. 1981. Draft fishery management plan environmental impact statement and regulatory analysis for the groundfish in the Gulf of Mexico. Gulf of Mexico Fisheries Management Council, Tampa, FL. 39 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fishery statistics; fishery management; socioeconomics;

00574
Gulf of Mexico Regional Technical Working Group. 1981. Gulf of Mexico, regional transportation management plan. U.S. Department of the Interior, Bureau of Land Management, Gulf of Mexico OCS Regional Office, New Orleans, LA. 139 p.

ABSTRACT: The Gulf of Mexico RTMP consists of two planning levels due to existing leasing and development conditions. The area of jurisdiction for Florida (eastern Gulf) down to the 26 degree N latitude line is at Level II planning. The four other Gulf states have produced Level III plans. The federal OCS jurisdiction has been evaluated at the third level. The RTMP, therefore, is made up of the integrated individual state and federal plans at the appropriate level of planning. As changes in the region occur due to the leasing schedule, sales, and discoveries, the RTMP will be updated based on the three-level planning system. To be effective, a planning system in the Gulf of Mexico must address the current situation of oil and gas activities and the processes associated with transporting the resources to land. The central and western Gulf have the most developed infrastructure system for oil and gas production in the world. The most intense offshore development is located in the central Gulf, with activity stretching into the western Gulf. In the eastern Gulf, most areas remain largely undeveloped. The existing system of oil and gas related industries extends eastward only to Pascagoula, Mississippi.
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; oil and gas; pipeline; socioeconomics;

00575
Gulf South Research Institute. 1976. Trace metal analysis: quality control for MAFLA (Mississippi, Alabama, Florida) 4 and south Texas 2 investigations. Report to the Bureau of Land Management, Washington, DC. BLM/YM/ES-76/5. 204 p.

ABSTRACT: A comprehensive quality control program, Contract No. 08550-CT5-49, was conducted by Gulf South Research Institute (GSRI) in support of the Mississippi, Alabama, Florida (MAFLA) OCS Monitoring and South Texas OCS Baseline Program for the Bureau of Land Management, Department of the Interior. A total of 241 marine environmental samples including 10 suspended particulates, 31 zooplankton, 19 paint chip samples, 75 sediment and 106 epifauna samples were subjected to quality control trace metal analysis.
KEYWORDS: Alabama; Florida; Mississippi; Texas; continental shelf; chemistry; trace metal; sediment; water quality; plankton;

00576
Gulf States Marine Fisheries Commission. 1977. Gulf states marine fisheries commission twenty-eighth annual report 1976-1977 to the Congress of the United States and to the governors and legislators of Alabama, Florida, Louisiana, Mississippi and Texas. Gulf States Marine Fisheries Commission, Ocean Springs. MS. 48 p.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; coastal waters; continental shelf; fisheries; fishery management; socioeconomics;

00577
Gunter, G. 1945. Studies on marine fishes of Texas. Publ. Inst. Mar. Sci. 1(1):1-190.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; fish;

00578
Gunter, G. 1950. Seasonal population changes and distribution as related to salinity of certain invertebrates of the Texas coast, including the commercial shrimp. Publ. Inst. Mar. Sci. 1(2):7-51.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; benthos; shrimp;

00579
Gunter, G. 1952. Historical changes in the Mississippi River and the adjacent marine environment. Publ. Inst. Mar. Sci. Univ. Tex. 11(2):120-139.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River; coastal waters; biology; ecology;

00580
Gunter, G. 1967. Some relationship of estuaries to the fisheries of the Gulf of Mexico, p. 621-638. In G.H. Lauff [ed.], Estuaries. American Association for the Advancement of Science, Publication No. 83, Washington, DC.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; estuary; fisheries; ecology;

00581
Gunter, G. 1979. Notes on sea beach ecology food sources on sandy beaches and localized diatom blooms bordering gulf beaches, Gulf of Mexico. Gulf Res. Rep. 6 (3):305-308.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; ecology; beach; flora;

00582
Gunter, G. 1979. The annual flows of the Mississippi River. Gulf Res. Rep. 6(3):283-290.

ABSTRACT: The Mississippi River drains two thirds of the lower United States plus 13,000 square miles of Canada. When North America was being colonized by Europeans, the river overflowed its banks about once every 3 years and spread onto the floodplain, which today covers 34,600 square miles of the valley. A natural levee formed alongside the river where the silt was dropped when water left the channel; the levee now slopes away from the river at about 7 feet per mile. This high ground was settled first by the white man at New Orleans in 1717. The spring floods barely topped the natural levee and the original town was protected by a ring levee 3 feet high. As more overflow areas were cut off from the river, the levees increased in height to about 40 feet. The hydraulics of the river became better and today more water and silt flows out to sea. About three fourths of the floodplain is closed off from the river, but in 1882 and 1927, the river took that land back, and in 1973 almost 60% of the 22-million-acre area was flooded. Nevertheless, there have been no levee breaks since the Corps of Engineers took over flood control in 1928. The mean flow of the river since 1900 has been 646,000 cubic feet per second (cfs) moment to moment. The mode, median, quartiles and deciles of annual flows are given, and the measurements of dispersion, the standard deviation and coefficient of variation are given. The Atchafalaya River distributary has increased considerably at the expense of the Mississippi River since 1858. During the flood year of 1973, the Atchafalaya carried 37% of the total flow. It is estimated that unless it is brought under control, in about 60 years the Atchafalaya will equal the Mississippi. Flood years are not especially associated and in several cases low flows and flood years are close together. Measurements of river flows before 1900 are unreliable or absent. Since then, however, careful measurements of the daily flows of both distributaries have been taken by the Corps of Engineers and used to compile mean flows in cfs by years. The data extend for a series of 79 years. They were furnished to the author by the New Orleans District of the Corps. These data were used for all calculations given here on flows. The lowest flow recorded for the Atchafalaya was 13,300 cfs on September 22, 1925. The lowest flow for the Mississippi was 75,000 cfs on November 4, 1939. The highest for the Atchafalaya was 781,000 cfs at Simmesport on May 12,1973; the highest for the Mississippi was at Tarbert Landing on February 19, 1937, at 1,977,000 cfs. Subjectively described floods of 1782, 1828, and 1882 tie in with 1927 and 1973 as 50-year floods. The 1927 and 1973 floods were remarkably similar; the former was the larger. The largest known flow of the river is only 25% less than the maximum which meteorologists say could be generated. Presumably such a flood could be handled without catastrophe.
KEYWORDS: Louisiana; Mississippi River; physical; meteorology;

00583
Gunter, G.; Christmas, J.Y. 1960. A review of literature on menhaden with special reference to the gulf menhaden, Brevoortia patronis Goode. U.S. Fish and Wildlife Service, Spec. Sci. Rep. Fish. 363. 31 p.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi; biology; ecology; fish; fisheries; menhaden;

00584
Gunter, G.; Geyer, R.A. 1955. Studies on fouling organisms of the northwest Gulf of Mexico. Publ. Instit. Mar. Sci. 4(1):37-87.

ABSTRACT: The work reported here was carried out on the Louisiana and Texas coasts. It was divided into two parts. The first concerned observations of fouling organisms on templates of oil platforms and boat hulls. The second consisted of a study of fouling organisms collected on steel cylinders submerged at various depths from two platforms offshore Louisiana.
KEYWORDS: Texas; Louisiana; continental shelf; biology; oil and gas; petroleum platform;

00585
Gunter, G.; Lyles, C.H. 1979. Localized plankton blooms and jubilees on the Gulf Coast. Gulf Res. Rep. 6(3):297-300.

ABSTRACT: Localized plankton blooms take place at many locations and many times up and down the Gulf coast. They have also been reported on the Atlantic coast. They appear to be responsible for many localized cases of fish kills. Their onset is often characterized as following rainy weather and a few days of calm. It thus appears that some land component or components are washed down by the rains into waters near shore. Whether or not these are the usual fertilizer salts or some trace element that acts as a chelating agent is not known. Such phenomena seem to occur more frequently that they did in the past probably because of increased nutrients flowing into our salt waters in recent years due to various activities of man. Several types of unicellular organisms seem to be involved. Two of them are known, Chaetoceras and Gonyaulax. No human ailment has been reported from the eating of crustaceans or fish caught during a jubilee. However, it is now well recognized that a toxic substance is produced in blooms of naked dinoflagellates.
KEYWORDS: Alabama; Louisiana; Mississippi; biology; plankton;

00586
Gusey, W.F.; Maturgo, Z.D. 1973. Petroleum production and fish and wildlife resources. The Gulf of Mexico. Shell Oil Company, Houston, TX. 187 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; marsh; estuary; coastal waters; continental shelf; biology; oil and gas; environmental impact; fish; wildlife; fisheries; endangered species; bird;

00587
Haegh, T.; Rossemyr, L.I. 1980. A comparison of weathering processes of oil from the Bravo and the Ixtoc blowouts. In Proceedings, 12th Annual Offshore Technology Conference. Paper No. OTC-3702.

ABSTRACT: In spite of differences in the type of blowout, climatic conditions and amount of oil from the two blowouts (Bravo and Ixtoc), there is a surprising similarity in the physical and chemical characteristics. The visual observations state that the slicks pass the same physical stages which can easily be divided in 5 distinct categories (in some cases also in substages such as pancakes, lump stripes, etc.). Further, each stage seems to have more or less the same range of physical characteristics concerning loss of light components, viscosity, and water-uptake (water-in-oil emulsion). Observations also indicate that the use of different conventional oil combating techniques are only successful within a limited range of physical stages of the oil.
KEYWORDS: Gulf of Mexico; oil and gas; chemistry; physical; hydrocarbon; oil spill; Ixtoc;

00588
Hagar, R. 1985. Two brisk Gulf of Mexico plays make area hottest in the U.S. Oil Gas J. 83 (10):78+ vp.

ABSTRACT: The two hottest exploration plays in the U.S. during the last 12 months have been in the Gulf of Mexico. They are: The Pliocene-Pleistocene play. Known as the Flexure trend, a series of significant oil discoveries triggered this leasing and drilling surge in deep water off Louisiana and Texas. Reserve estimates amount to more than 1 billion bbl of oil equivalent. Exploration/development work continues at a brisk pace throughout more mature areas of the gulf, too. And operators have renewed frontier exploration efforts off Florida, where there are no commercial discoveries.
KEYWORDS: Texas; Louisiana; continental shelf; continental slope; oil and gas; geology;

00589
Hall, J. 1980. Louisiana Offshore Oil Port. Marine Eng. Log 85(11):92, 144.

ABSTRACT: None
KEYWORDS: Louisiana; oil and gas; socioeconomics; shipping;

00590

Hall, R.J.; Belisle, A.A.; Sileo, L. 1983. Residues of petroleum hydrocarbons in tissue of sea turtles exposed to the Ixtoc I oil spill. J. Wildl. Dis. 19(2):106-109.

ABSTRACT: None
KEYWORDS: Texas; Mexico; oil and gas; biology; oil spill; hydrocarbon; environmental impact; turtle; endangered species; Ixtoc;

00591

Halper, F.B.; McGrail, D.W. 1988. Long-term measurements of near-bottom currents and suspended sediment concentration on the outer Texas-Louisiana continental shelf. Cont. Shelf Res. (1):23-36.

ABSTRACT: Long-term measurements of near-bottom current velocity, water temperature and transmissivity were collected on the outer Texas-Louisiana shelf, near the shelf-edge, during the spring-summer of 1980 and the winter of 1980-1981. The sediments on this part of the shelf consist primarily of silt and clay and a bottom nepheloid layer is well developed. The winter deployment coincided with the passage of seven northers and Hurricane Jeanne. The spring-summer deployment was relatively quiet in comparison. The observations show that current direction is strongly related to changes in suspended sediment concentration. Flow to the south corresponds to increases in suspended matter concentration, flow to the north corresponds to decreases in suspended sediment concentration, suggesting that suspended sediment concentration is modulated primarily by advective processes. The passage of the northers did not cause an increase in current speed or suspended sediment concentration, suggesting that suspended sediment concentration is modulated primarily by advective processes. However, oscillations that propagate through the area during the winter are important in modulating suspended sediment concentration.
KEYWORDS: Texas; Louisiana; physical; current; turbidity; meteorology;

00592

Hamilton, C.L. 1980. Texas commercial harvest statistics, 1978-79. Texas Parks and Wildlife Department, Management Data Series. 34 p.

ABSTRACT: A continuing program is being conducted to collect data on the commercially harvested finfish and shellfish from Texas bays and from Texas territorial waters of the Gulf of Mexico. During Sept-Aug 1978-79 red drum (Sciaenops ocellata) increased 5.2% in landings and 26.0% in value spotted seatrout (Cynoscion nebulosus) increased 4.7% in landings and 34.8% in value. Black drum (Pogonias cromis) decreased 3.7% in landings but increased 7.1% in value. Flounder (Paralichthys lethostigma and P. albiquta) decreased 31.0% in landings and 11.9% in value. Red snapper (family Lutjanidae) decreased 38.6% in landings and 8.3% in value. From 1977-78 to 1978-79, blue crab (Callinectes sapidus) decreased 9.3% in landings and 2.9% in value. Oyster meat landings decreased 45.4% in landings and 42.8% in value. Brown (Penaeus aztecus) and pink (P. duorarum) shrimp decreased 12.0% in landings but increased 29.5% in value. White shrimp (P. setiferus) decreased 1.7% in landsings but increased 37.3% in value. Based on Individual Sales Transactions (IST), during October 1978-Sept 1979, red drum landings from Texas bays and Texas Gulf waters totaled 348,864 kg 54.9% of the 1978-79 quota established by the TPWD Commission. Percent of individual quotas reached ranged from 14.9% for the Gulf of Mexico to 85.4% for Sabine Lake.
KEYWORDS: Texas; estuary; coastal waters; continental shelf; fisheries; fishery statistics; shrimp; fish; drum; flounder; seatrout; snapper; blue crab; oyster;

00593

Hammer, R.M.; Gettleson, D.A.; Putt, R.E.; Thompson, M.J. 1985. Fishery management considerations based on a study of the effect of oil and gas activities on reef fish assemblages in the Gulf of Mexico area. Bull. Mar. Sci. 37(1):397.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; continental shelf; reef; biology; fisheries; oil and gas; petroleum platform; fish;

00594
Hammerschmidt, P.C.; McEachron, L.W. 1986. Trends in relative abundance of selected shellfishes along the Texas coast: January 1977-March 1986. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Management Data Series No. 108.

ABSTRACT: Trends in relative abundance and size of brown shrimp (Penaeus aztecus), white shrimp (P. setiferus), pink shrimp (P. duorarum), blue crab (Callinectes sapidus), and Eastern oyster (Crassostrea virginica) in Texas marine waters were monitored using a standardized fishery independent sampling program with bag seines along bay shorelines, trawls in bay water ≥1.0 m deep and in Gulf water ≥1.8 m deep within the Texas Territorial Sea and oyster dredges in bay "reef" and "non-reef" areas. Brown shrimp catch rates generally increased in bag seines during 1977-1985 and in bay trawls during 1982-1985. White shrimp catch rates with both gears generally declined during the same years. Pink shrimp catch rates declined in bag seines but were similar among years in bay trawls. Catch rates of blue crabs increased in both bag seines and bay trawls. Catch rates of associated finfishes in trawls varied among years. Highest catches of market oysters in Galveston Bay occurred during September-December.
KEYWORDS: Texas; estuary; coastal waters; biology; fisheries; fishery statistics; shrimp; blue crab; oyster;

00595
Handley, L.R. 1980. Oil and gas development in the Mississippi Delta mudslide area: recognition of a geohazard. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA.

ABSTRACT: There have been a number of oil platform and pipeline failures as a result of subaqueous mass wasting. Most of the evidence indicates that widespread instability can be associated with overloading caused by high amplitude, hurricane-generated waves, although other causes of overloading may be critical at times. From experience and surveys the government agencies and industry involved on the continental shelf are aware of the nature of the instability, mechanisms and rates of movement and the structural failures that can result. Recognition of the large area of active geohazards in the offshore delta has produced tremendous amounts of data, engineering adaptations to platform structures, pipeline laying and the proposal of several alternatives for platform sites and pipeline routes.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; geology; oil and gas; hazard; pipeline; petroleum platform; submarine landslide;

00596
Hann, R.W., Jr.; Giammona, C.P.; Randall, R.E. 1984. Offshore oceanographic and environmental monitoring services for the Strategic Petroleum Reserve. Eighteen-month report for the West Hackberry Site, May 1983-November 1983. Volume 3. Executive summary. Texas A&M Research Foundation, College Station. Rep. No. DOE/PO/10850-3-V3. 38 p. NTIS order No. DE84011573.

ABSTRACT: The Department of Energy's Strategic Petroleum Reserve Program began leaching the West Hackberry salt dome and discharging brine into the coastal waters offshore Cameron, Louisiana during mid-May 1981. This report describes the findings of a team of Texas A and M University scientists and engineers who have conducted a study to evaluate the effects of the West Hackberry brine discharge on the marine environment. The study addresses the areas of physical oceanography, analysis of the discharge plume, water and sediment quality, special pollutants, nekton, benthos, phytoplankton, zooplankton and data management, it focuses on the period from May 1, 1982 through November 14, 1983. Volume 3 contains the executive summary and summaries for the following tasks: physical oceanography, brine plume, water and sediment quality, special pollutant survey, nekton, benthos, phytoplankton, and zooplankton.
KEYWORDS: Louisiana; coastal waters; oil and gas; brine disposal; environmental impact; biology; chemistry; physical; Strategic Petroleum Reserve;

00597
Hanson, P.J.; Hoss, D.E. 1986. Trace metal concentrations in menhaden larvae Brevoortia patronus from the northern Gulf of Mexico. Estuar. Coast. Shelf Sci. 23(3):305-315.

ABSTRACT: Whole body concentrations of Cu, Zn, Mn and Fe were measured in individual gulf menhaden larvae, Brevoortia patronus (11-18 mm standard length) from coastal waters of the northern Gulf of Mexico as part of a continuing project investigating the mechanisms of biological interaction and effect of trace metals in marine food webs. Larvae collected at three different times between February 1981 and 1982 at two locations, offshore of Southwest Pass of the Mississippi River and offshore of Galveston, Texas.
KEYWORDS: Texas; Louisiana; Southwest Pass; chemistry; trace metal; fish; menhaden;

00598

Hanson, R.B. 1982. Influence of the Mississippi River on the spatial distribution of microheterotrophic activity in the Gulf of Mexico. Contrib. Mar. Sci. 25:181-198.

ABSTRACT: Spatial distribution of microheterotrophic activity in the water column of the Mississippi Delta Bight and the Gulf of Mexico was investigated in April and May 1977. Microheterotrophic activity was determined from the uptake of labeled [C14] glucose and the concentration of reactive carbohydrates. Mississippi River water was characterized by particulate organic carbon (POC) concentration and hydrographic data. Microheterotrophic activity decreased with distance offshore and with increasing depth of the water column in the Mississippi Delta Bight. Highest activity was in waters with low salinities and high POC concentrations. Where the salinities were characteristic of open Gulf of Mexico waters, microheterotrophic activities were typically low. Waters with warmest temperatures did not always possess the highest microheterotrophic activity. In surface waters of the Gulf of Mexico, activity was lower than in the Bight and activity decreased with increasing depth. Turnover times of carbohydrates were inversely proportional to the rate of microheterotrophic activity. Reactive carbohydrates did not show any gradients with either distance from shore or depth of the water column. Respiration ([C14] CO2) of the labeled glucose was highest in surface waters and decreased with distance from shore. The results suggest that the Mississippi River greatly influences the spatial distribution of microheterotrophic activity in the Mississippi Delta Bight but not in the Gulf of Mexico.
KEYWORDS: Alabama; Louisiana; Mississippi; continental shelf; biology; chemistry; bacteria; physiology;

00599

Hardin, G.C. 1962. Notes on Cenozoic sedimentation in the Gulf Coast geosyncline, U.S.A, p. 1-15. In Houston Geol. Soc., Geology of the Gulf Coast and central Texas and guidebook of excursions. Geological Society of America, 1962 Annual Meeting, Houston, Texas.

ABSTRACT: The Gulf Coast geosyncline extends from Alabama southwestward to the northeastern part of Mexico, and contains Mesozoic and Cenozoic sediments on the order of 60,000 feet thick. Cenozoic clastics ranging from 10,000 to 50,000 feet or more cover an area of approximately 250,000 square miles. Two stable arches and three embayments are aligned transverse to the axis of the geosyncline, and largely determine the shape of its northwestern limb. These features reflect Paleozoic and pre-Cambrian structures and alignments. The greatest thickness of sediments known for each Cenozoic stratigraphic unit is found in one of the embayments. During the Cenozoic, rate of sedimentation was never uniform throughout the geosyncline. At some places, deposits accumulated in depocenters or along depoaxes to much greater thicknesses than elsewhere. Area of maximum sedimentation for Eocene was in southwestern Texas, but gradually shifted northeastward until area of maximum sedimentation for Miocene and younger was in southern Louisiana. The gentle southeastward dip of most Cenozoic stratigraphic units is modified by zones called "flexures," downdip from which the rate of dip and thickening of beds is accentuated. Most flexures are accentuated by contemporaneous normal faults of regional extent. Each succeeding younger "flexure" is located seaward, or downdip, from the preceding older one. This results in the cross sectional shape of the geosyncline being asymmetrical, with its axial plane dipping landward at an angle of approximately four degrees.
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; geology; stratigraphy; geologic history; sedimentation;

00600

Hardy, R.J. 1982. Ocean dumping of material off the Louisiana Coast. In R.G. Willey [ed.], Proceedings of a seminar on attaining water quality goals through water management procedures, 17-18 February 1982, Dallas, Texas. 15 p. NTIS order No. AD-P000 420/0.

ABSTRACT: On 23 October 1972, Congress passed the Marine Protection, Research, and Sanctuaries Act, commonly known as the Ocean Dumping Act. The Environmental Protection Agency (EPA) published the final revision to the Ocean Dumping Regulation on 11 January 1977. Ocean waters, as far as Louisiana is concerned, are those waters which lie beyond the Louisiana coastline. Transportation of dredged material has been defined by the Chief of Engineers Office as material which is carried through a cutterhead discharge line in addition to that which is transported by a hopper dredge or barge. Therefore, all dredging performed in the Gulf of Mexico off the Louisiana coast must meet the requirements of the Ocean Dumping Act. The Ocean Dumping Regulation requires that bioassay and bioaccumulation tests be performed unless disposal operations can be excluded under section 227.13.
KEYWORDS: Louisiana; coastal waters; continental shelf; dredging; ocean dumping;

00601

Harper, D.E., Jr. 1970. Ecological studies of selected level-bottom macro-invertebrates off Galveston, Texas. Ph.D. dissertation. Texas A&M University, College Station, TX. 244 p.

ABSTRACT: The substrate preference and temporal distribution of 64 species of marine macroinvertebrates were studied. All species inhabit the shallow, nearshore (3-11 m) bottom off Galveston, Texas. Ecological and behavioral notes are given for several species that were brought into the laboratory and maintained in aquaria.
KEYWORDS: Texas; coastal waters; continental shelf; biology; ecology; sediment; benthos;

00602
Harper, D.E, Jr. 1977. Distribution and abundance of macrobenthic and meiobenthic organisms, p. 175-274. In E.P. Klima [ed.], Environmental assessment of an active oilfield in the northwestern Gulf of Mexico, 1976/1977. National Marine Fisheries Service, Galveston, TX.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; oil and gas; environmental impact; benthos; Buccaneer Field;

00603
Harper, D.E., Jr.; McKinney, L.D. 1982. Effects of brine disposal on benthic communities off Freeport, Texas, p. 1117. In OCEANS 82 Conference Record: Industry, government, education - Partners in progress - Washington, DC, September 20-22, 1982. (Summary only.).

ABSTRACT: Brine (250 ppt.) derived from solution mining the Bryan Mound salt dome located near Freeport, Texas, was discharged into the Gulf of Mexico through a series of vertical pipes collectively called the "diffuser". Disposal of brine had no apparent effect on either bottom water temperature or dissolved oxygen. However, salinity of the bottom water and pore water in the vicinity of the diffuser was increased above ambient levels as much as 3 ppt. The brine did not appear to effect a change in numbers of species collected near the diffuser, nor did the amphipod populations (which are relatively sensitive to pollution) appear to be affected. However, abundances of organisms may have been altered.
KEYWORDS: Texas; coastal waters; oil and gas; brine disposal; biology; chemistry; benthos; environmental impact; Strategic Petroleum Reserve;

00604
Harper, D.E., Jr.; Potts, D.L.; Salzer, R.R.; Case, R.J.; Jaschek, R.L.; Walker, C.M. 1981. Distribution and abundance of macrobenthic and meiobenthic organisms, p. 133-177. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; biology; benthos; environmental impact; Buccaneer Field;

00605
Harris, D.L. 1981. Tides and tidal datums in the United States. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, VA. Rep. No. SR-7. 382 p.

ABSTRACT: None
KEYWORDS: United States; physical; tide;

00606
Harrison, E.W.; Heaton, T.C. 1984. Literature review, data set identification and compilation of data of the ground fishery in the South Atlantic and the Gulf of Mexico, p. 36. In M. Flandorfer [ed.], Annual report: Mississippi-Alabama Sea Grant Consortium, January 1, 1981 to June 30, 1982. Rep. No. MASGP-82-020.

ABSTRACT: A bibliography on nine groundfish species was assembled in computerized format. A brief summary and key word identifiers are included in each citation. Holders of existing research data and the general nature of the data were identified. The compilation covered American waters from the Chesapeake Bay southward to the Texas/Mexico border, with some information from other areas also included.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; fisheries; fish; bibliography;

00607

Hart, W.E.; Murray, S.P. 1978. Energy balance and wind effects in a shallow sound. J. Geophys. Res. 83(C8):4097-4106.

ABSTRACT: Tidal energetics and wind effects in an extensive (3000 km 2) shallow (~3.5 m) sound with two widely separated entrances were studied numerically with a two-dimensional vertically averaged model. A comparison of current predictions with observation from 15 current meter stations under differing tidal regimes proved the reliability of the model. Evaluation of the instantaneous energy balance equation showed the change in energy content to be nearly balanced by input energy flux, frictional energy dissipation being of secondary importance. In contrast to the equipartition of energy in classical long waves, there is on the average eight times more potential energy than kinetic energy. Input energy flow shows preferential pathways; the wide northern entrance mainly shows energy gain to the Sound, the southern entrance shows equal amounts of gain and loss, while small cuts through the barrier island chain serve mainly as conduits for energy loss. When real tidal input is used, the energy balance time-averaged over a diurnal tidal cycle is not in a steady state, and frictional dissipation is the dominant term. Experiments showed that with winds in the 8- to 9-m/s range, extensive setup can occur (20 cm), strongly dependent on wind direction. Increased speeds through the passages can significantly reduce the residence time in the Sound. Relaxation time of the wind perturbations is only about 3 hours.
KEYWORDS: Louisiana; coastal waters; physical; model; meteorology; wind; current;

00608

Hausknecht, K.A. 1980. Biological/chemical survey of Texoma and Capline Sector salt dome brine disposal sites off Louisiana, 1978-1979. Volume V. Describe surficial sediments and suspended particulate matter. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-29. 86 p. NTIS order No. PB81-174963.

ABSTRACT: Measurements are summarized of surficial and suspended sediment characteristics which were made during four cruises to the West Hackberry and Weeks Island brine disposal sites in June and October of 1978 and January and May of 1979. The sites showed significant differences in sedimentology with the West Hackberry site being composed predominantly of fine-grained silt and clay with characteristically high levels of total organic carbon (TOC). Conversely, sediments at Weeks Island were primarily silty sand with low levels of organic carbon. Total organic carbon showed a significant inverse correlation with grain size (TOC increased with decreasing grain size).
KEYWORDS: Louisiana; coastal waters; geology; chemistry; brine disposal; environmental impact; sediment; sediment texture; organic carbon; Strategic Petroleum Reserve;

00609

Havran, K.J.; Wiese, J.D.; Collins, K.M.; Kurz, F.N. 1982. Gulf of Mexico summary report. Outer continental shelf oil and gas information program. U.S. Geological Survey, Open-File Rep. 82-242.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; continental shelf; socioeconomics;

00610

Hawes, S.R.; Perry, H.M. 1978. Effects of 1973 floodwaters on plankton populations in Louisiana and Mississippi. Gulf Res. Rep. 6(2):109-124.

ABSTRACT: Studies to assess the impact of floodwater diversion on plankton populations in coastal waters of Mississippi and Louisiana were conducted from April 23, 1973 through July 13, 1973. Fixed stations in Lake Pontchartrain, Lake Borgne and western Mississippi Sound were sampled once in April, twice in May and June, and once in July. Stations in Terrebonne Parish, Louisiana were visited once in May, June and July. Data are presented on changes in the species composition of zooplankton subsequent to the opening of the Bonnet Carre and Morganza floodways. The hydrographic conditions at the time of sampling are discussed.
KEYWORDS: Louisiana; Mississippi; estuary; biology; plankton;

00611

Hawkins, J.W. 1983. Sources of relict sand on northeast Texas continental shelf. M.S. thesis, Texas A&M University, College Station, TX. 63 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; geology; sediment;

00612

Hayes, E.B. 1961. A study of the seasonal distribution of certain decapod crustaceans of the Louisiana marsh area. Master's thesis. Texas A&M University, College Station, TX. 74 p.

ABSTRACT: Three areas in the Mississippi delta were analyzed for decapod crustacean life in connection with a proposed channel which would dredge the area. The distribution and size of the blue crab (Callinectes sapidus), the white shrimp (Penaeus setiferus) and the brown shrimp (Penaeus aztecus) were studied. Samples were collected from July, 1959 to July, 1960. Hydrographical parameters measured included temperature, salinity, dissolved oxygen, and turbidity.
KEYWORDS: Louisiana; marsh; biology; ecology; shrimp; blue crab;

00613

Hayes, R. 1980. Operational use of remote sensing during the Campeche Bay oil well blowout. In Proceedings, 14th International Symposium on Remote Sensing of Environment, San Jose, Costa Rica, Apr. 23-30, 1980. Environ. Res. Inst., Ann Arbor, MI.

ABSTRACT: None
KEYWORDS: Mexico; Texas; oil and gas; oil spill; remote sensing; Ixtoc;

00614

Heald, E.J. 1970. Fishery resource atlas II. West coast of Florida to Texas. University of Miami Sea Grant Program, Miami, FL. Sea Grant Technical Bulletin 4. 174 p.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; biology; fisheries; fishery statistics;

00615

Hedgpeth, J.W. 1953. An introduction to the zoogeography of the northern Gulf of Mexico with reference to the invertebrate fauna. Publ. Inst. Mar. Sci., Univ. Tex. 3(1):107-224.

ABSTRACT: This estuarine and neritic waters of the northern Gulf of Mexico, especially along the coasts of Texas and Louisiana, are characterized by broad ranges of environmental factors, providing conditions favorable to temperate organisms in winter and tropical organisms in summer. The fauna is a mixture of temperate Atlantic and tropical Caribbean elements, with a very low endemic component. The distribution of many of the Atlantic species occurring in the northern Gulf is characteristically disjunct, they being absent from southern Florida or represented there by stunted individuals or reduced populations. Many of these species were apparently continuous in distribution across northern Florida during high stands of the sea in late interglacial periods of the Pleistocene. The small number of endemic species-about 10 percent in most invertebrate groups may be a reflection of the environmental extremes which enable the development of large populations of wide-ranging adaptable species at the expense of the development of indigenous forms. Similar conditions apparently prevailed well back into the Tertiary, and the evidence of the Cretaceous suggests that the region now bounded by the Gulf Coastal Plain has been in an area of transition between northern and southern environments since that time. The pronounced range of environmental factors has many effects on the communities of the region, and fluctuations in populations are pronounced. Populations in bay waters in particular undergo wide variations as a result of killing cold, high salinities during droughts, and excess drainage of fresh water during floods. Both droughts and killing cold spells may be increasing in frequency, especially in south Texas. These waters are nevertheless productive. Extensive oyster reefs occur in the bays, and the shallow bottom of the neritic Gulf is inhabited by large colonies of sea pansies and sea whips, sand-loving echinoderms and various bivalves. One of the largest invertebrate populations is that of the various species of penaeid shrimp. This population is one of the key--if not the key--components in a complex major ecosystem which includes the marine and estuarine environments.
KEYWORDS: Texas; Louisiana; estuary; coastal waters; biology; ecology; benthos; biogeography;

00616

Hedgpeth, J.W. 1954. Bottom communities of the Gulf of Mexico, p. 203-214. In P.S. Galtsoff [ed.], Gulf of Mexico. Its Origin, Waters, and Marine Life. U.S. Fish Wildl. Serv. Fish. Bull. 55(89).

ABSTRACT: None
KEYWORDS: Gulf of Mexico; estuary; coastal waters; continental shelf; biology; benthos;

00617
Heideman, J.C.; George, R.Y. 1981. Biological and engineering parameters for macrofouling growth on platforms offshore Louisiana, p. 550-557. In OCEANS 81 Conference Proceedings.

ABSTRACT: Climax marine growth on several oil and gas platforms offshore Louisiana has been assessed. Dominant fouling species in different depth zones have been identified. Profiles of average growth thickness and roughness height needed for offshore structure design have been estimated from measurements and photographs.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; oil and gas; petroleum platform;

00618
Heil, G.D. 1983. Texas Gulf maritime industries. Mar. Eng./Log Int. 88(4):39-42.

ABSTRACT: None
KEYWORDS: Texas; socioeconomics; shipping;

00619
Helwick, S.J. 1977. Engineering properties of shallow sediments in West Delta and South Pass Outer Continental Shelf lease areas, offshore Louisiana. Master's Thesis. Texas A&M University, College Station, TX.

ABSTRACT: None
KEYWORDS: Louisiana; South Pass; continental shelf; geology; sediment; hazard;

00620
Helwick, S.J.; Bryant, W.R. 1977. Geology and geotechnical characteristics of sediments in East Bay area, Mississippi Delta. Mar. Geomorphology 2:1961-1975.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; geology; sediment; hazard;

00621
Henry, W.K. 1979. Some aspects of the fate of cold fronts in the Gulf of Mexico. Mon. Weather Rev. 107:1078-1082.

ABSTRACT: This is a summary of the frontal activity in the Gulf of Mexico and the Caribbean Sea based on the fronts rather than on the more standard climatological summary of frequency in latitude-longitude squares. The orientation of the entering front is a function of the origin of the front. The duration and final departure of the front is discussed along with the extent of the penetration southward and the development of frontal waves.
KEYWORDS: Gulf of Mexico; physical; meteorology;

00622
Henwood, T.A.; Johnson, P.; Heard, R.W. 1978. Feeding habits and food of the longspined porgy, Stenotomus caprinus Bean. Northeast Gulf Sci. 2(2):133-137.

ABSTRACT: The longspined porgy, Stenotomus caprinus Bean, is an abundant species in the 40 to 100 meter depth range over much of the northern and western Gulf of Mexico. Gunter & Knapp (1951), Siebenaler (1952), Hildebrand (1954), Caldwell (1955), Roithmayr (1965), Moore et. al. (1970), Perry (1970), Franks et. al. (1972) and Chittenden & McEachran (1976) have documented the occurrence of this species in the 20 to 120 meter range. Despite ample evidence that the porgy is a major member of the offshore demersal fish population, there have been no published reports on the feeding behavior or food of this fish. This study was undertaken in the hopes of characterizing major food items and feeding patterns within the species.
KEYWORDS: Gulf of Mexico; biology; ecology; fish; porgy;

00623
Herbich, J. 1981. Wave data bank for the Texas coast. The University and the Sea, College Station, TX., 14(1):10. Abstract only.

ABSTRACT: The need for information pertaining to wave characteristics of the Texas coast is recognized by designers of offshore structures and by coastal zone planners. Sea Grant initiated a wave-monitoring program at Texas A&M in 1977. In 1978-1979, three waverider buoys; a digital cassette recorder, and a mooring system were added to the program's existing instrumentation. Data were obtained from the National Data Buoy Office and the U.S. Corps of Engineers as well as from the Texas A&M instruments. Information included wind speed, wind direction, and barometric pressure. Wave data were analyzed by computer to obtain energy density measurements, wave heights, and wave periods (time between wave crests).
KEYWORDS: Texas; physical; wave; wind;

00624

Herbich, J.B.; Watanabe, R.K. 1980. Wave data bank for the Texas Coast. Texas Engineering Experiment Station Technical Bulletin.

ABSTRACT: The Wave Data Bank project compiles information relating to ocean wave characteristics for the Texas coast. Analyses of previously recorded wave measurement program is being conducted. The data collection employs waverider buoys and a pressure gage.
KEYWORDS: Texas; coastal waters; physical; wave;

00625

Herke, W.H.; Knudsen, E.E.; Rogers, B.D.; Prenger, V.L. 1985. Effects of a fixed-crest water control structure on the abundance of the fish and crustaceans migrating from a shallow marsh nursery toward the Gulf of Mexico. Estuaries 8:21A. (Abstract only.).

ABSTRACT: Weirs (low-level dams with a crest 15 cm below marsh soil level) are commonly used in Louisiana to stabilize eroding marshes and improve wildlife habitat. By 1969, 100,000 ha of marsh had been semi-impounded by these standard, fixed-crest weirs. We suspected that these weirs may impede the migrations of estuarine-dependent organisms. To test this hypothesis, a 70-ha marsh pond was leveed to create two nearly identical 35-ha ponds. All fish, shrimp, and crabs emigrating from the two ponds were trapped continuously and the traps were emptied daily. The trapping continued for two years, with the weir being switched from the entrance/exit of one pond to that of the other pond after the first year. Comparisons of catches, for most species, indicated that the standard, fixed-crest weir caused major reductions in both numbers and biomass of important estuarine-dependent fisheries resources migrating back toward the Gulf of Mexico.
KEYWORDS: Louisiana; estuary; marsh; biology; fish; shrimp; blue crab; ecology;

00626

Hewitt, J.E.; Brooke, J.P.; Knipmeyer, J.H. 1984. Estimated oil and gas reserves: Gulf of Mexico outer continental shelf and continental slope. Minerals Management Service, Gulf of Mexico Regional Office, Metairie, LA. 21 p.

ABSTRACT: Remaining recoverable reserves of oil and gas in the Gulf of Mexico Outer Continental Shelf and Continental Slope have been estimated to be about 3.41 billion barrels of oil and 43.7 trillion cubic feet of gas, as of December 31, 1983. These reserves are recoverable from 505 studied fields under the Federal submerged lands off the coasts of Louisiana and Texas. An additional 51 fields, discovered since December 31, 1981, have not been sufficiently developed to permit a reasonably accurate estimate of reserves. Original recoverable reserves are estimated to have been 9.31 billion barrels of oil and 106.2 trillion cubic feet of gas from 521 fields in the same geographic area. Included in this number are 16 fields that are depleted and were abandoned; not included are the 51 insufficiently developed fields. Estimates were made for individual reservoirs in 399 fields and on a field-wide basis for the other 122 fields.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; oil and gas; socioeconomics;

00627

Hicks, J.N.; Rahman, H. 1986. Gas deliverability and flow capacity of surveillance fields in Louisiana and Texas federal offshore areas. Department of Energy, Washington, DC. Offshore Oil and Gas, report No. DOE/EIA-0471, 57 p. NTIS Order No. DE86010048/GAR.

ABSTRACT: The study represents the gas-well gas deliverability and flow capacity of 244 surveillance fields in the Louisiana and Texas Federal Offshore Areas from 1983 through 2002. This report begins with a discussion of how fields were selected for the study and a gas production history of the selected fields in the Louisiana and Texas Federal Offshore Areas for the last six years. Next is a discussion of the methodology used in calculating gas-well gas deliverability and flow capacity. There is a general discussion of gas deliverability and flow capacity calculated for the surveillance fields over a 20-year period (1983 through 2002).
KEYWORDS: Texas; Louisiana; continental shelf; continental slope; oil and gas;

00628
Hiett, R.L.; Chandler, K.A.; Reniere, A.K.; Bolstein, A.R. 1983. Socioeconomic aspects of marine recreational fishing. National Marine Fisheries Service, Washington, DC. 101 p.

ABSTRACT: The 1981 Socioeconomic Survey of Marine Recreational Fishermen consisted of a telephone survey of approximately 2,400 fishing households and personal interviews with 7,000 anglers at the fishing site on the three coastal areas of the contiguous United States when the fishing was completed. The on-site interviews were followed by a telephone interview to obtain completed trip information. The survey obtained information in the following areas: (1) information about marine recreational fishermen, (2) information about marine fishing trips in general, (3) trip expenditure information, (4) catch and disposition of catch information, and (5) information about angler satisfaction. Marine recreational fishing is an activity widely participated in along all coastal areas of the contiguous United States. Expenditures associated with fishing are quite large and travel distances substantial. Fish which are caught are kept for eating or returned to the water alive. The great majority of marine anglers are satisfied with their fishing experiences.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; Pacific Ocean; coastal waters; socioeconomics; fisheries; fishery statistics; recreation;

00629
Hildebrand, H.H. 1954. A study of the fauna of the brown shrimp (Penaeus aztecus) grounds in the western Gulf of Mexico. Publ. Inst. Mar. Sci. 3(2):229-366.

ABSTRACT: The aims of this study were diverse. One phase of the work involved the collection and compilation of information on the distribution and relative abundance of the animals taken in trawls. Another aspect of the study was the collection of life history and ecological information concerning various species. Information on the trawling grounds and the catch per unit effort was compiled.
KEYWORDS: Texas; coastal waters; biology; fisheries; ecology; shrimp;

00630
Hildebrand, H.H. 1982. A historical review of the status of sea turtle populations in the western Gulf of Mexico. In K.A. Bjorndal [ed.], Biology and conservation of sea turtles. Proceedings of the World Conference on Sea Turtle Conservation, November 26-30, 1979. Smithsonian Institution Press, Washington, DC. 583 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; biology; turtle; ecology; endangered species;

00631
Hill, G.W. 1979. Correlation of trace element concentrations in marine benthonic polychaetes with their host sediment. U.S. Geol. Surv. Open File Rep. 79-393. 10 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; chemistry; sediment; benthos; trace metal;

00632

Hill, G.W. 1980. Infaunal and neoichnological characteristics of the south Texas outer continental shelf. Facies characteristics and patterns in modern size-graded shelf deposits, northwestern Gulf of Mexico. Facies characteristics and patterns in mid-estuary intertidal flat deposits, Willapa Bay, Washington. Ph.D. dissertation. University of California, Santa Cruz. 437 p. (Diss. Abs. 42/09-B:3609).

ABSTRACT: Infaunal and Neoichnological Characteristics of the South Texas Outer Continental Shelf. The zonation of macrobenthic infauna on the South Texas Outer Continental Shelf is related to water depth and sediment facies. Five zones can be defined by species distribution and density, diversity, equitability, and biogenic sedimentary structures. The numbers of species and individuals per unit area correlate locally with substrate characteristics (particularly sand-to-mud ratios). Sandier substrates have more species and individuals than muddier ones. In the study area, sand-to-mud ratios generally decrease as water depth increases. Consequently, the numbers of species and individuals decrease away from land. Diversity (H'') is higher in sandier substrates than in muddier substrates. Overall diversity decreases in a seaward direction. Equitability increases as sand-to-mud ratios decrease and thus tends to increase as water depth increases. Biogenic sedimentary structures on the South Texas Outer Continental Shelf result from the interaction of biologic and geologic processes. The zonation of the structures is useful in overall environmental interpretations of Holocene events and processes. The zonation can be defined in terms of diversity, density, and distribution. Facies Characteristics and Patterns in Modern Size-Graded Shelf Deposits, Northwestern Gulf of Mexico. The continental shelf off south-central Texas is low energy and micro-tidal. The size-graded portion of this shelf is characterized by zonation of grain size of surficial sediments, macrobenthic infaunal assemblages, sedimentary structures, bedding types and bedding sequences. General decrease in grain size of modern sediments with increasing water depth indicates the surficial bottom sediments are in equilibrium with the hydraulic regime. Gravel, a minor component, is biogenic shell detritus. The terrigenous sand fraction is the predominant constituent on the lower shore-face. The majority of the shelf is covered with clayey-silt sediment with the clay content increasing offshore. Infaunal diversity and abundance decreases with increasing water depth. Three major taxonomic groups (Crustacea, Polychaeta, Mollusca) represent the majority of individuals collected. Species distribution patterns show crustacean and polychaete diversity about the same across the shelf but with large numbers of crustaceans on the lower shoreface. Mollusc diversity and density increases on the outer shelf. Facies Characteristics and Patterns in Mid-Estuary Intertidal Flat Deposits, Willapa Bay, Washington. The purpose of this study is to characterize the deposits of mid-estuary intertidal flats in Willapa Bay, Washington, based on texture, composition, and sedimentary structures (both physical and biogenic). The average textural characteristics of mid-estuary intertidal flat sediments are best described as poorly sorted, fine-grained sand with strongly-fine skewed leptokurtic distributions. Distribution patterns of textural parameters show consistent trends of sediments fining upslope and up-estuary reflecting a response to decreasing hydraulic energy and increasing distance from the main sand source (the tidal inlet). Compositionally, mid-estuary intertidal flat sediments are mainly (greater than 90%) light minerals, mostly quartz with small amounts of lithic fragments, pumice, vegetation, and biogenic shell fragments. Heavy minerals make up about 4% of the sediment. The most common heavy minerals are clinopyroxene, orthopyroxene, hornblende, epidote, and opaque. Clay minerals comprise less than 5% of the sediment. The principal clay minerals are montmorillonite, illite, and chlorite; two clay mineral suites are present: (1) muddy flat suite with 44% montmorillonite, and (2) sandy flat suite with 88% montmorillonite. Fossils make up less than one percent of the sediment. The most common microfossils are forams separated into two assemblages--one modern shallow-water and the second a relic deep-water assemblage. Macrofossils consist of shells of the modern tidal flat mollusc assemblage.
KEYWORDS: Texas; geology; biology; continental shelf; ecology; benthos; sediment;

00633

Hill, G.W.; Garrison, L.E.; Hunter, R.E. 1975. Maps showing drift patterns along the north-central Texas coast, 1973-1974. U.S. Geol. Surv., Misc. Field Studies, Map MF-714.

ABSTRACT: Maps depicting seasonal circulation patterns of Texas coastal waters are presented.
KEYWORDS: Texas; coastal waters; physical; current;

00634

Hingtgen, T.M.; Mulholland, R.; Zale, A.V. 1985. Habitat suitability index models: eastern brown pelican. U.S. Fish Wildl. Serv. Biol. Rep. 82(10.90). 20 p.

ABSTRACT: The eastern brown pelican habitat suitability index (HSI) model is intended for use in the habitat evaluation procedures (HEP) developed by the U.S. Fish and Wildlife Service (1980) for impact assessment and habitat management. The model was developed from a review and synthesis of existing information and is scaled to produce an index of habitat suitability ranging from 0 (unsuitable habitat) to 1 (optimally suitable habitat). Assumptions involved in developing the HSI model and guidelines for model applications, including methods for measuring model variables, are described.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; biology; bird; brown pelican; endangered species; model;

00635

Hixon, R.F. 1980. Growth, reproductive biology, distribution and abundance of three species of loliginid squid (Myopsida, Cephalopoda) in the northwest Gulf of Mexico. Ph.D. dissertation. University of Miami. 249 p. (Diss. Abs. 41/12-B:4346).

ABSTRACT: Three neritic squid species of the family Loliginidae occur over the continental shelf throughout the Gulf of Mexico: Loligo pealei, Loligo (Doryteuthis) plei and Lolliguncula brevis. Although commonly caught in the Gulf shrimp fishery, many aspects of their biology and life history in the Gulf are obscure. The present study is based upon (1) laboratory observation of live squids and (2) 1390 trawl and night light stations occupied between 1975 and 1979 over the continental shelf primarily along the Texas coast and throughout the western Gulf of Mexico. Morphometric comparisons of length-weight data suggest that throughout their range each species is made up of morphometrically variable populations. Estimates of growth indicate that Lolliguncula brevis has a slower growth rate than either L. plei or L. pealei, and that both species of Loligo have similar growth rates. A sigmoid growth curve that hypothesizes a maximal life span of 18 months and a slower growth rate after the onset of sexual maturation is proposed as a preliminary model of growth for all three species. Sexually mature males and females of all three species are present throughout the year and no spent squids were observed. Loligo pealei is found to be capable of producing multiple broods of eggs and of spawning up to 55,000 eggs. All three species are generally most abundant in spring and summer, but substantial fluctuations in abundance occur both seasonally and from year to year. A general areal and bathymetric distribution analysis shows that Lolliguncula brevis is most abundant closest inshore, L. plei is primarily found mid-way across the continental shelf and L. pealei is captured along the outer edge of the shelf. The general distribution pattern varies both seasonally and yearly due to differing temperature and salinity conditions, fluctuations in squid abundance and annual inshore-offshore migrations. The results of a preliminary biomass estimate and projected catch rates indicate that a directed squid fishery with bottom trawls is not feasible in the northwest Gulf of Mexico at the present time.
KEYWORDS: Texas; continental shelf; biology; squid; fisheries;

00636

Hixon, R.F.; Hanlon, R.T.; Gillespie, S.M.; Griffin, W.L. 1980. Squid fishery in Texas: biological, economic, and market considerations. Mar. Fish. Rev. 42:44-50.

ABSTRACT: Currently, no major squid fishery exists in the Gulf of Mexico, although the shelf forms, Loligo pealei, Loligo plei, and Lolliguncula brevis, occur throughout the Gulf. The constraints that hinder the development of the fishery are examined, using Texas as a model. Several biological, economic and marketing problems were identified that indicate a squid fishery is not viable in Texas at this time, although future potential for one exists.
KEYWORDS: Texas; fisheries; biology; socioeconomics; squid;

00637

Ho, C.L.; Barrett, B.B. 1976. Distribution of nutrients in Louisiana's coastal waters influenced by the Mississippi River. Estuar. Coast. Mar. Sci. 5:173-195.

ABSTRACT: The volume of freshwater introduced into Louisiana's coastal zone during 1973 by rainfall and river discharge was the highest in the past 35 years. Water samples were taken from inshore estuarine areas as well as in the open Gulf of Mexico during 1973. Analysis of the water samples showed that the nutrient content of the water within the zone of the Mississippi River influence is directly related to the volume discharged to the Gulf by the river. Drainage water from the marshes into the upper regions of Barataria and Caminada Bays was characterized by high levels of NH(+4), N, and organic N, but low values of NO(-3) or NO(-2) as compared to waters influenced by the Mississippi River. Coastal waters adjacent to the river mouth were dominated by low nutrient seawater. However, inorganic nutrients and organic N in the bays and their adjacent nearshore waters were higher than at the river mouth during low river discharge. The primary source of nutrients and organic matter to the bays is the surrounding marshes. The high fishery productivity of the water adjacent to the river mouth is a result of nutrient contribution by the Mississippi River.
KEYWORDS: Louisiana; estuary; coastal waters; Mississippi River Delta; chemistry; fisheries; nutrient; physical; meteorology; water quality;

00638

Ho, F.P.; Schwerdt, R.W.; Goodyear, H.V. 1975. Some climatological characteristics of hurricanes and storms on the Gulf and East coasts of the United States. National Weather Service, NOAA Technical Department, NWS-15.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; physical; meteorology; hurricane;

00639
Hoese, H.D. 1964. Studies on oyster scavengers and their relation to the fungus Dermocystidium marinum. Proc. Natl. Shellfish. Assoc. 53:161-174.

ABSTRACT: Dermocystidium marinum, a parasitic fungus of oysters, was demonstrated from the stomachs of the snail, Urosalpinx cinerea, from the stomach, intestine and body of three fishes, Gobiosoma bosci, Chasmodes bosquianus, and Opsanus tau, and from the body, especially the setal, of two crabs, Neopanope texana and Rhithropanopeus harrisii. All animals containing D. marinum had scavenged oysters infected by the fungus. A few oysters became lightly infected when kept in aquaria with fishes that had been fed infected oyster tissue. It is concluded that nearly all dying oysters are consumed by animals during periods or normal mortality, so their parasites must pass through the digestive system of scavengers.
KEYWORDS: Gulf of Mexico; biology; ecology; oyster; physiology;

00640
Hoese, H.D.; Moore, R.H. 1977. Fishes of the Gulf of Mexico: Texas, Louisiana, and adjacent waters. Texas A&M University Press, College Station, TX. 327 p.

ABSTRACT: None
KEYWORDS: Louisiana; Texas; estuary; coastal waters; continental shelf; biology; fish; taxonomy;

00641
Hoffman, H.J. 1974. A comparison of organic matter in river water and sea water. Master's thesis. Texas A&M University, College Station, TX. 74 p.

ABSTRACT: Particulate and dissolved organic carbon and salinity were measured at 26 stations around the South and Southwest passes of the Mississippi River in an attempt to compare river and sea organic matter. Samples were collected at 4 stations and analyzed for phosphate, chlorophyll A, carbohydrates, amino acids, particulate organic nitrogen and carbon isotope ratios. Samples were collected in October, 1971 during cruise 71-A-12 of the R/V Alaminos.
KEYWORDS: Louisiana; estuary; coastal waters; Mississippi River; South Pass; Southwest Pass; chemistry; organic carbon; chlorophyll; stable isotope; nutrient;

00642
Hoffman, W.; Fritts, T.H.; Reynolds, R.P. 1981. Whale sharks associated with fish schools off South Texas. N.E. Gulf Sci. 5(1):55-57.

ABSTRACT: None
KEYWORDS: Texas; biology; fish; shark;

00643
Hogg, D.M. 1975. Formation, growth, structure, and distribution of calcareous algal nodules on the Flower Garden Banks. M.S. thesis. Texas A&M University, College Station, TX. 58 p.

ABSTRACT: Algal nodules of the Flower Garden Banks are calcareous structures formed primarily by the approximately concentric layering of crustose calcareous algae. Algae of the genus Lithothamnium are the primary nodule formers, with algae of the genus Lithophyllum and the encrusting foraminifer Gypsina plana as secondary contributors. The distribution of the nodules in the zone (45 to 80 m depth) varies with depth and is influenced by water movement, sedimentation, light intensity, and biota of the zone.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; geology; biology; reef;

00644
Holland, J.S. 1979. Benthic invertebrates: macroinfauna and epifauna. Chapter 17. In Environmental studies, south Texas outer continental shelf, biology and chemistry. Final report to the Bureau of Land Management, New Orleans, LA.

ABSTRACT: None
KEYWORDS: Texas; biology; ecology; benthos; STOCS;

00645
Hollaway, S.L.; Baxter, K.N. 1981. A summary of results of Louisiana brown shrimp tagging experiments, 1978. NOAA Tech. Mem. NMFS-SEFC-78. 118 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; coastal waters; biology; fisheries; shrimp; fishery statistics;

00646

Hollaway, S.L.; Baxter, K.N. 1981. Summary of results of 1978 Louisiana brown shrimp tagging experiments, with regard to movement and migration. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-78. 123 p. NTIS order No. PB84-117068.

ABSTRACT: Research on penaeid shrimp stock in the northern Gulf of Mexico began in 1977 as part of Project MEXUS-GULF and continued in 1978. During the 1978 phase, brown shrimp (Penaeus aztecus) were the target species for mark-recapture studies. This report presents a summarization of these mark-recapture experiments.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; fisheries; shrimp;

00647

Hollaway, S.L.; Faw, G.M.; Sizemore, R.K. 1980. The bacterial community composition of an active oil field in the northwestern Gulf of Mexico. Mar. Poll. Bull. 11:153-156.

ABSTRACT: The bacterial composition of the water column around two oil production platforms and a control site was examined. Samples were collected during three seasons of a 12-month sampling period; three water depths were sampled at all stations. No major differences were discovered in taxonomic or physiological makeup of bacterial populations of the oil field and control site. The genus Pseudomonas predominated at the oil field stations and the control. Bacterial numbers were lower for oil field stations than the control and generally decreased with depth. Microbial biomass estimates were consistently higher at the control site. Oil degrading and sulfur oxidizing bacteria were more numerous within the oil field, and their numbers decreased with distance from the platforms. Buccaneer crude oil did not adversely affect growth or attachment ability of oil field isolates.
KEYWORDS: Texas; continental shelf; biology; oil and gas; bacteria; environmental impact; Buccaneer Field;

00648

Hollaway, S.L.; Sullivan, L.F. 1982. Penaeid shrimp tagging experiments in Louisiana, 1979. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-89. 104 p. NTIS order No. PB84-115369.

ABSTRACT: The major program objectives were designed to meet data needs identified as management priorities in the regional shrimp fishery management plan for the Gulf of Mexico. They included investigation of growth, mortality and movement patterns of offshore overwintering populations of white shrimp (Penaeus setiferus) and to expand inshore studies of brown shrimp (P. aztecus) in Louisiana's extensive and productive estuarine systems to include white shrimp. This report summarizes recovery data from shrimp marked and released in Louisiana waters during 1979.
KEYWORDS: Louisiana; estuary; coastal waters; continental shelf; biology; fisheries; shrimp; Barataria Bay;

00649

Holle, C.G. 1952. Sedimentation at the mouth of the Mississippi River, p. 111-129 In Proceedings of the 2nd Conference on Coastal Engineering.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River; geology; sediment; sedimentation;

00650

Holloway, S.L.; Sullivan, L.F. 1982. Penaeid shrimp tagging experiments in Louisiana, 1979. NOAA Tech. Mem. NMFS-SEFC-89. 100 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; coastal waters; biology; fisheries; shrimp; fishery statistics;

00651

Holmes, C.W. 1973. Distribution of selected elements in surficial marine sediments of the northern Gulf of Mexico continental shelf and slope. U.S. Geol. Surv. Prof. Pap. 814. 7 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; Mississippi; Alabama; Florida; continental shelf; continental slope; geology; chemistry; trace metal; sediment;

00652

Holmes, C.W. 1976. Distribution, regional variation, and geochemical coherence of selected elements in the sediments of the central Gulf of Mexico. U.S. Geol. Surv. Prof. Pap. 928. 24 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; deep sea; geology; chemistry; sediment; trace metal; mineralogy;

00653

Holmes, C.W. 1982. Geochemical indices of fine sediment transport, northwest Gulf of Mexico. J. Sed. Petrol. 52(1):307-321.

ABSTRACT: The (210)Pb distribution, the clay mineralogy distribution, and the distribution of three trace metals, barium, lead, and manganese, in the sediments of the south Texas shelf are related to the dynamics of the sedimentary transport process. (210)Pb, whose concentration is time dependent, defines three loci of recent sediment accumulations. In addition, the variation of (210)Pb activity at the sediment-water interface delineates areas of terrestrial sedimentation from hemipelagic sedimentation. The distribution of these geochemical properties of the sediment are in direct response to the sediment regime of the shelf. Based on this data, a model of sediment transport and deposition which relates currents, wind, tides, sediment flux, and precipitation has been formulated.
KEYWORDS: Texas; continental shelf; geology; chemistry; trace metal; sediment; mineralogy; model;

00654

Holmes, C.W. 1986. Trace metal seasonal variations in Texas marine sediments. Mar. Chem. 20:13-27.

ABSTRACT: Trace elements in coastal environments are derived from three major sources: (1) the bordering watershed; (2) the offshore marine environment; and (3) industrial and/or urban effluent. The site of deposition, however, is controlled by climate and can vary seasonally. In the harbor at Corpus Christi, Texas, the summer climate creates an oxygen-poor environment in the water column near the sediment-water interface. This causes chalcophilic metals to precipitate from the water, resulting in high concentrations in sediments near the source. During the winter, turbulence created by strong winds causes the entire water mass to become aerated and oxidizing, and remobilization of some metals results. In addition, this turbulence accelerates circulation, which transports the metal-enriched waters from the harbor. On the outer continental shelf of south Texas, infaunal activity varies seasonally with bottom water temperature. As this infaunal activity has an effect on the chemical environment in the sediment near the sediment-water interface, the observed trace metal content at the interface also appears to change with the seasons.
KEYWORDS: Texas; estuary; coastal waters; continental shelf; Corpus Christi Bay; Matagorda Bay; chemistry; sediment; trace metal; STOCS;

00655

Holmes, C.W.; Martin, E.A. 1978. Migration of anthropogenically induced trace metals (barium and lead) in a continental shelf environment. In Proceedings, 4th Joint Conference on Sensing of Environmental Pollutants. American Chemical Society.

ABSTRACT: Variation in the rates of sediment accumulation is one of the most important factors affecting physical and chemical processes within a sedimentary basin. During the past decade, a method based on 210-Pb disequilibrium has been devised that enables the rates of sediment accumulation to be measured for the last 150 years (BP), the time encompassed by the industrial revolution on the North American Continent. The rates of sediment accumulation at 22 sites on the Continental Shelf and upper Continental Slope in the northwestern Gulf of Mexico have been determined. The rates varied from zero to greater than 7 mm per year. In an area of rapidly accumulating sediments on the central Texas shelf, south of Matagorda Bay, trace-metal profiles indicate that an increase in barium and lead has taken place in the sediments within the recent past. The rates of sedimentation as calculated by the 210-Pb method reveal that this increase has occurred within the last 25 years. Further inspection of the data indicates that the leading edge of the metal-contaminated sediment is migrating across the shelf at an average rate of 2 km per year.
KEYWORDS: Texas; continental shelf; chemistry; trace metal; sediment;

00656

Holmes, C.W.; Slade, E.A.; McLerran, C.J. 1974. Migration and redistribution of zinc and cadmium in marine estuarine system. Environ. Sci. Technol. 8:255-259.

ABSTRACT: A survey of trace-element levels in the estuarine sediments of Texas shows that Corpus Christi Bay has anomalously high concentrations of zinc and cadmium. Maps of elemental abundance within the bay indicate large concentration gradients, the highest values being near the harbor entrance. Seasonal determinations of metal levels in the harbor and bay waters also revealed variations with time. During summer, stagnation of the harbor water increases the concentration of metals so that significant quantities precipitate in the reducing environment of the bottom water. In winter, the exchange of water between the bay and the harbor increases, and metals are redissolved from harbor deposits, washed into the bay, and adsorbed by particles settling to the bottom.
KEYWORDS: Texas; estuary; Corpus Christi Bay; chemistry; trace metal; sediment;

00657

Holt, G.J.; Holt, S.A.; Arnold, C.R. 1985. Diel periodicity of spawning in sciaenids. Mar. Ecol. Prog. Ser. 27:1-7.

ABSTRACT: Time of day was determined for spawning of several species of sciaenid fishes by examining development stages of eggs collected in estuarine and near-shore plankton samples. Estuarine samples were taken at different times of day and night but newly spawned Cynoscion nebulosus and Bairdiella chrysoura eggs were taken only during a period from just before to 3 or 4 hours after sunset. Sciaenops ocellatus and Mentichirrhus sp. eggs from near-shore Gulf of Mexico samples, taken during the morning, all contained tail-bud stage embryos, indicating evening spawning in these species. It is proposed that evening spawning reduces predation on sciaenid eggs by allowing dispersal of eggs during the night when planktivores may be less active. Overnight dispersal reduced C. nebulosus egg density from 100 m(-3) during evening spawning to 1 m(-3) the next afternoon.
KEYWORDS: Texas; coastal waters; estuary; biology; fish; plankton; drum;

00658

Holt, S.; Rabalais, S.C.; Rabalais, N.N.; Cornelius, S.; Holland, J.S. 1978. Effects of an oil spill on salt marshes at Harbor Island, Texas, p. 344-353. In Proceedings, 1978 Conference on assessment of ecological impacts of oil spills, 14-17 June 1978, Keystone, CO. American Petroleum Institute, Washington, DC.

ABSTRACT: None
KEYWORDS: Texas; marsh; oil and gas; biology; environmental impact; oil spill;

00659

Holt, S.A.; Arnold, C.R. 1982. Growth of juvenile red snapper Lutjanus campechanus, in the northwestern Gulf of Mexico. Fish. Bull. 80 (3):644-648.

ABSTRACT: The red snapper, L. campechanus, has received considerable attention in the past due to its importance as a commercial and sport fish in the Gulf of Mexico. Most published material deals with the fishery and is summarized in Carpenter (1965). Few major papers have dealt with the natural history of red snapper. Moseley (1965) reported on growth, reproduction, and food habits of red snapper taken by trawl and handline off the Texas coast. He determined age and growth rate from scales by assuming that growth checks were produced during the spawning season. Bradley and Bryan (1975) also sampled red snapper along the middle Texas coast with trawl and hook and line. They were unable to distinguish age classes by length frequencies and attributed that to an extended spawning season. Futch and Bruger (1976) used otolith readings to determine age and growth of red snapper off the coast of Florida. This paper presents new information on growth of young snapper and relates that information to their occurrence on an artificial reef.
KEYWORDS: Texas; coastal waters; continental shelf; biology; fish; snapper; reef;

00660

Hooper, C.H. 1981. The IXTOC I oil spill: the Federal scientific response. National Oceanic and Atmospheric Administration, Boulder, CO. Office of Marine Pollution Assessment. Rep. No. NOAA-82042804. 208 p. NTIS order No. PB82-244344.

ABSTRACT: On 3 June 1979, a Petroleos Mexicanos (PEMEX) exploratory well, IXTOC I, blew out in the Bay of Campeche, about 80 km northwest of Ciudad del Carmen, Mexico. The spill, not brought under control until 27 March 1980, became the largest oil spill in history. The following summary described the numerous operation support activities and scientific studies performed under the purview of the Federal Scientific Support Coordinator. The primary purpose of the physical, chemical, and biological activities described herein was to provide the Federal On-Scene Coordinator (OSC) with timely information concerning the location, toxicity, and potential ecological impact of the oil on the Texas coastline.
KEYWORDS: Texas; Mexico; continental shelf; coastal waters; beach; marsh; oil and gas; oil spill; environmental impact; biology; chemistry; physical; bird; current; fish; hydrocarbon; Ixtoc;

00661
Hooper, N.J. 1981. Report of western Gulf regional workshop on ocean pollution monitoring held at New Orleans, Louisiana on December 16-17, 1980. National Oceanic and Atmospheric Administration, Boulder, CO. Office of Marine Pollution Assessment. Rep. No. NOAA-81092514. 66 p. NTIS order No. PB82-126368.

ABSTRACT: This report summarizes the results of a joint US NOAA and US EPA workshop on the status and requirements of marine pollution monitoring programs along the Western coast of the Gulf of Mexico. A brief discussion of the First Federal Plan, a summary of the Report of the South Atlantic and Gulf Region Conference on Marine Pollution Problems is presented along with definitions and recommendations. Next a summary of the key findings and recommendations of the monitoring workshop are discussed. Included are summaries of the presentations by representatives of Federal agencies, industry, and state agencies.
KEYWORDS: Gulf of Mexico; oil and gas; environmental impact;

00662
Hopkins, A.E. 1931. Factors influencing the spawning and setting of oysters in Galveston Bay, Texas. Bull. U.S. Bur. Fish. 47:57-83.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; biology; oyster; physiology;

00663
Hopkinson, C.S.; Gosselink, J.G.; Parrondo, R.T. 1978. Aboveground production of seven marsh plant species in coastal Louisiana. Ecology 59(4):760-769.

ABSTRACT: None
KEYWORDS: Louisiana; marsh; biology; flora; primary production;

00664
Horowitz, A.; Presley, B.J. 1977. Trace metal concentrations and partitioning in zooplankton, neuston, and benthos from the south Texas outer continental shelf. Arch. Environ. Contam. Toxicol. 5(2):241-255.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; chemistry; plankton; fish; shrimp; trace metal; STOCS;

00665
Horst, J.; Bankston, D. 1986. The potential for stone crab (Menippe mercenaria) commercial fishery in Barataria Bay, Louisiana. Louisiana Sea Grant Pub. No. LSU-T-86-002. 21 p.

ABSTRACT: Describes an exploratory fishing effort to determine stocks of stone crabs in Louisiana waters. Discusses gear, fishing techniques, and catch results, and gives instructions for building stone-crab pots.
KEYWORDS: Louisiana; estuary; Barataria Bay; fisheries; stone crab; fishing gear; fishery statistics;

00666
Hottman, W.E. 1975. Areal distribution of clay minerals and their relationship to physical properties, Gulf of Mexico. Master's thesis. Texas A&M University, College Station, TX. 53 p.

ABSTRACT: Thirty-seven piston cores were collected from the Gulf of Mexico during cruises by the R/V Alaminos between 1965 and 1970. Samples were analyzed for clay minerals, grain size, water content, void ratio, shear strength, carbonate content and specific gravity. Data include maps which show percentages of each clay mineral in each sample location.
KEYWORDS: Gulf of Mexico; sediment texture; geology; sediment; mineralogy;

00667

Hribernick, P.; Wascom, M. 1982. Legal implications of coastal erosion in Louisiana, p. 128-139. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modifications in Louisiana: Causes, Consequences, and Options. October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: Erosion in the coastal zone of Louisiana has serious legal consequences for all property owners -- private, State and Federal. When a private property owner and the State are placed in an adversarial position, the general rule of Louisiana law dictates that erosion works against the private property owner's interest and works in favor of the State's interest. When the State and the Federal Government are placed in an adversarial position, the general rule of law dictates that erosion works against the State's interest and works in favor of the Federal Government's interest. Following these general rules, if the forces of nature work to erode a private property owner's land, he may lose title of that land which erodes, and its valuable mineral resources, to the State. Similarly, if the forces of nature work to erode the coastline of Louisiana, the State may lose to the Federal Government, title to land in the Outer Continental Shelf in an amount corresponding to the number of acres of coastline that has eroded. At stake are invaluable mineral resources which pass with the ownership of the land.
KEYWORDS: Louisiana; marsh; geology; erosion; socioeconomics;

00668

Hsu, S.A. 1977. Atmospheric dispersion characteristics in the Louisiana coastal zone. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Technical Rep. No. 229. 29 p.

ABSTRACT: Atmospheric dispersion characteristics in the coastal zone are unique in that physical processes of air, sea, and land combine at the shoreline to create motions on many scales which differ in important respects from processes over land or over water. Some of these differences in coastal Louisiana are reviewed. Synoptic-scale characteristics indicate that the coastal zone is superior to areas farther inland for dispersing pollutants. However, mesoscale and microscale studies reveal that diurnal circulation of land-breeze and sea-breeze systems and the development of an internal boundary layer because of aerodynamic roughness changes across the shoreline may actually increase pollution concentration in the nearshore region. Specific studies on these scales of atmospheric motion in relation to the optimum siting for industrial plants are outlined and recommended.
KEYWORDS: Louisiana; coastal waters; physical; meteorology; air quality;

00669

Hsu, S.A. 1981. Relationship between monthly frontal overrunning and offshore-onshore temperature differences across the central Gulf Coast. J. Appl. Meteor. 20(12):1479-1482

ABSTRACT: Under geostrophic and hydrostatic conditions, the Margules equation for the equilibrium slope of a stationary front is applied to study the relationship between monthly frontal overrunning and the temperature difference (DELTA T) across the central Gulf Coast. The data used were 10 yr of frontal overrunning statistics, 30 yr of onshore temperature and wind records at New Orleans, LA., and 86 yr of offshore temperature and wind conditions. Monthly frontal overrunning correlates both meteorologically and statistically with DELTA T, as expected; however, the high correlation coefficient of 0.91 was unexpected. The contribution of wind difference across the coastal zone is smaller by far than that of DELTA T. Therefore, the results may be applied for operational planning and to supplement local forecasting of frontal overrunning.
KEYWORDS: Louisiana; physical; meteorology; wind;

00670

Hsu, S.A.; Murray, S.P.; Coleman, J.M.; Roberts, H.H.; Salama, M. 1982. A collection of reprints. Tech. Rep. La. State Univ. Coastal Studies Institute, Baton Rouge. Rep. Nos. TR-337 through TR-342.

ABSTRACT: Contents include: On the Correction of Land-Based Wind Measurements for Oceanographic Applications; Eddy Currents and Sediment Transport Off the Damietta Nile; Fluid Mud Dynamics and Shoreline Stabilization -- Louisiana Chenier Plain; Analysis and Interpretation of TIROS-N AVHRR Infrared Imagery, Western Gulf of Mexico; Periodic Mudflat Progradation, Northeastern Coast of South America -- A Hypothesis; Physical Processes and Fine-Grained Sediment Dynamics, Coast of Surinam, South America.
KEYWORDS: Texas; Louisiana; geology; erosion; remote sensing;

00671

Hudson, J.H.; Robbin, D.M. 1980. Effects of drilling mud on the growth rate of the reef-building coral, Montastrea annularis, p. 455-470. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Florida; Texas; continental shelf; reef; Flower Garden Banks; oil and gas; biology; environmental impact; drilling fluid; benthos;

00672

Hudson, J.H.; Robbin, D.M. 1980. Effects of drilling mud on the growth rate of the reef-building coral, Montastrea annularis, p. 1101-1122. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: Texas; Florida; Flower Garden Banks; oil and gas; biology; drilling fluid; environmental impact; benthos; physiology;

00673

Huh, O.K. 1978. Remote sensing of the oceans from space -- achievements, problems and prognosis. Office of Naval Research, Astronautics and Aeronautics. Tech. Rept. No. 252.

ABSTRACT: None
KEYWORDS: United States; coastal waters; continental shelf; physical; remote sensing;

00674

Huh, O.K.; Rouse, L.J.; Smith, G.W. 1978. Surface temperature and temperature gradient features of the U.S. Gulf coast waters, p. 1609-1618. In Proceedings, 11th International Symposium on Remote Sensing of the Environment, April 25-29, 1977. University of Michigan, Ann Arbor.

ABSTRACT: Satellite thermal infrared data on the Gulf of Mexico show that a seasonal cycle exists in the horizontal surface temperature structure. In the fall, the surface temperatures of both coastal and deep waters are nearly uniform. With the onset of winter, atmospheric cold fronts, which are accompanied by dry, low-temperature air and strong winds, draw heat from the sea. Penetrative convection and wind-driven mixing lower temperatures, first in the shallowest waters and then, as the winter season progresses, in deeper and deeper portions of the Gulf. A band of cooler water forming on the inner shelf expands, until a thermal front develops seaward along the shelf break between the cold shelf waters and the warmer deep waters of the Gulf. Digital analysis of the satellite data has been carried out in an interactive mode using a minicomputer and software developed at the Coastal Studies Institute. A time series of temperature profiles illustrates the temporal and spatial changes in the sea-surface temperature field.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; continental slope; physical; remote sensing; temperature;

00675

Huh, O.K.; Wiseman, W.J.; Rouse, L.J., Jr. 1978. Winter cycle of sea surface thermal patterns, northeastern Gulf of Mexico. J. Geophys. Res. 83(C9)4523.

ABSTRACT: During the winter of 1976-1977, a time series of NOAA satellite data was obtained which documented the seasonal cycle of sea surface temperatures. Data were obtained as both marine-enhanced images and computer compatible tapes. Fall cooling initially affected only the lakes and estuaries. A band of cold inner shelf waters then formed along the coast. This expanded seaward to the shelf break as the winter season progressed. At the extreme of winter cooling, two major thermal fronts remained: one near the shelf edge, separating the shelf from deep gulf surface waters, and the other the cyclonic boundary of the Loop Current. The onset of spring warming was indicated by an increase in surface temperatures in the shallow inshore areas. The seasonal cycle was completed with the formation of nearly isothermal surface waters throughout the region, a condition characteristic of the summer season.
KEYWORDS: Gulf of Mexico; physical; remote sensing; continental shelf; deep sea; Loop Current; temperature;

00676

Hulings, N.D. 1955. An investigation of the benthic invertebrate fauna from the shallow waters of the Texas coast. M.S. thesis. Texas Christian Univ. 87 p.

ABSTRACT: This work reports on the results of an extensive investigation of sediments and benthic fauna of an area along the Texas coast. Bottom samples were obtained from the Heald-Sabine Bank area during 1952-1954. A series of samples along a transect from the shore to a point on Heald Bank were analyzed. Organism-sediment relationships are discussed.
KEYWORDS: Texas; coastal waters; biology; benthos;

00677

Humm, H.J.; Bert, T.M. 1979. The benthic marine algae of Timbalier Bay, Louisiana, p. 379-399. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; biology; oil and gas; environmental impact; flora; taxonomy; Offshore Ecology Investigation;

00678
Hunt, J.L. 1981. Geopressured -- geothermal energy resource evaluation for the northern Gulf of Mexico basin -- an overview. Bureau of Land Management, Washington, DC. Open File Rep. 81-01, 30 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; geology; oil and gas; socioeconomics;

00679
Hunter, R.E.; Hill, G.W. 1980. Nearshore current pattern off South Texas: an interpretation from aerial photographs. Remote Sens. Environ. 10(2):115-134.

ABSTRACT: Current patterns in a 4-km wide zone along the south coast of Texas were interpreted from patterns of water turbidity visible in aerial photographs taken during a winter day of moderate northerly winds. Features of the turbidity pattern remained recognizable on photographs taken 25 min apart. Currents measured from the movements of these features were southward and nearly parallel to shore, increasing from about 17 cm/sec in an offshore zone to about 40 cm/sec at the line of breaking waves. The shoreward increase in velocity was probably a manifestation of wave-driven longshore currents. Rip-current plumes were drifting with this longshore current and, during their drift, were deformed by the horizontal shear of the current. As a result of the shear, the plume axes trended seaward in an obliquely updrift direction. Much of the turbidity visible in the photographs was caused by suspended sediment apparently supplied to the Gulf of Mexico through Aransas Pass, a tidal inlet from which a large, ebb-tidal plume of turbid water was issuing at the time of the photography. Another discrete mass of turbid water along the coast to the south was probably the preceding ebb-tidal plume, which had become separated from the inlet and was drifting with the shore-parallel shelf current. Farther south, a linear pattern of turbid and less turbid bands in the offshore zone suggested the development of Langmuir circulation having cell axes parallel to the shelf current. The turbid bands probably marked the zones of surface divergence and upwelling of the Langmuir circulation. The spacing between the turbid bands averaged about ten times the water depth, and, thus, the cells were much flatter than Langmuir cells observed in deeper water.
KEYWORDS: Texas; coastal waters; physical; current; remote sensing; Aransas Pass;

00680
Ibrahim, A.K.; Carye, J.; Latham, G.; Buffler, R.T. 1981. Crustal structure in Gulf of Mexico from OBS refraction and multichannel reflection data. Am. Assoc. Pet. Geol. Bull. 65(7):1207-1229.

ABSTRACT: Results from 12 reversed refraction profiles each 110 km long have been combined with multichannel reflection data to produce a series of crustal structure sections across the Gulf of Mexico. These data show as many as three layers of sedimentary rocks with total thickness between 5 and 9 km and layer velocities between 1.7 and 3.5 km/sec. Beneath most of the Gulf, this sedimentary section is underlain by a layer with velocity between 4.5 and 5.4 km/sec. The acoustic basement as defined by reflection data is confined within this layer. This "basement" layer, which may be the top of volcanic layer 2, is too thin to be detected in the refraction results. Beneath this layer in most of the deep Gulf is an oceanic crustal layer (layer 3) 3 to 6 km thick which thickens to about 12 km under the Mississippi fan and 10 km in the southeastern Gulf where it is interpreted to be transitional crust. Oceanic layer 3 has a velocity between 6.4 and 7.0 km/sec and overlies a mantle with velocity between 7.6 and 8.2 km/sec. The top of oceanic layer 3 was not observed on regional multichannel seismic profiles. These data confirm earlier refraction interpretation that most of the deep Gulf basin is underlain by an oceanic crustal layer flanked by transitional crust. This layer may have been formed by a mantle thermal event accompanied by a period of rapid sea-floor spreading.
KEYWORDS: Gulf of Mexico; geology; stratigraphy; geologic history;

00681
Ichiye, T. 1960. On the hydrography near Mississippi delta. Oceanogr. Mag. 11:65-78.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; physical; continental shelf; salinity;

00682
Ichiye, T. 1962. Circulation and water mass distribution in the Gulf of Mexico. Geofisica International (Mexico City) 2(3):47-76.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; current; model;

00683

Ichiye, T. 1972. Circulation changes caused by hurricanes, p. 229-257. In Capurro, L.R.A. and Reid, J.L. [ed.], Contributions on the physical oceanography of the Gulf of Mexico. Gulf Publishing Co., Houston, TX. 288 p.

ABSTRACT: The observations in the Gulf of Mexico of temperature and salinity changes due to Hurricane Carla (1961), Hurricane Hilda (1964), and Hurricane Inez (1966) are reviewed. Several theoretical models are also reviewed.
KEYWORDS: Gulf of Mexico; physical; continental shelf; meteorology; hurricane; temperature; salinity;

00684

Ichiye, T. 1973. Hydrodynamic problems concerning oil spills in the ocean, p. 397-430. In Environmental aspects of supertanker port off Texas Gulf coast. Texas A&M University Sea Grant Rep. No. TAMU-SG-73-201.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; oil spill; physical; current;

00685

Ichiye, T.; Carnes, M. 1981. Application of aerial photography to the study of small scale upper ocean phenomena. Pure Appl. Geophys. 119(2):294-308.

ABSTRACT: The industrial waste dumped 180 nautical miles south of Galveston was monitored in July 1977 by water sampling, hydrographic measurements, acoustic tracking on board two vessels, and by aerial photography. The plume of the waste diffused vertically and horizontally. Photodensitometry of aerial photos of the plume showed lateral dispersion of the plume in agreement with two other methods: acoustic tracking of the waste suspensoid and transmissometer sampling. In addition, the method showed small scale features like the lateral and longitudinal variations in the photodensity, indicating the waste concentration. This waste concentration showed periodic changes in its axial distance, with the spectral peak at about 160 m wave length. It shows a sharp increase at the windward edge of the plume as do the acoustic records. This phenomenon is explained in terms of the shearing current near the surface together with vertical diffusion. The periodic change along the axis is explained in terms of the Langmuir circulation and in terms of internal ship waves.
KEYWORDS: Texas; continental shelf; physical; water quality; remote sensing; ocean dumping;

00686

Ichiye, T.; Inoue, M. 1981. Langrangian dispersion and deformation determined from drifter data, p. 231-275. In NOAA Office of Marine Pollution Assessment, Boulder, CO. Western Gulf of Mexico Dumping Site Assessment Report. Dumpsite Evaluation Report.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; current; ocean dumping;

00687

Ichiye, T.; Nakamoto, S. 1985. Comparison of Lagrangian and Eulerian diffusion near the bottom. UMI Mer. 23 (4):158-164.

ABSTRACT: About 360,000 barrels of brine per day were discharged from a diffuser at 22 m deep 20 km south of Freeport, Texas (USA), during 1980 and 1981. Salinity plumes near the diffuser were measured once a month and currents near the diffuser were measured continuously once every four minutes. On nine occasions of plume monitoring the moments of the salinity profiles lateral to the mean current were compared at three distances from the diffuser for each plume. The skewness and kurtosis of the salinity profiles indicated the Gaussian distribution of the profiles. The lateral diffusivity, the Eulerian correlation function and the ratio of the Lagrangian to the Eulerian integral time scale were determined with these data. The Lagrangian time scale was larger in general, but more variable than the Eulerian one.
KEYWORDS: Texas; coastal waters; oil and gas; chemistry; physical; salinity; brine disposal; Strategic Petroleum Reserve;

00688

Ichiye, T.; Sudo, H. 1971. Mixing processes between shelf and deep sea waters off the Texas coast. Texas A&M University, Dept. Oceanogr., Ref. 71-19-I. 29 p.

ABSTRACT: Forty STD stations, four Nansen cast stations, and 18 BT stations were sampled during a cruise south of Galveston on the continental shelf and slope. The data indicate that the coastal water was not found except at the nearest station, less than 20 miles from the coast.
KEYWORDS: Texas; coastal waters; continental shelf; continental slope; physical; current;

00689
Inabinet, J.R.; Fish, A.G. 1979. Distribution and ecology of the littoral Foraminifera of Timbalier Bay, p. 491-510. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; biology; oil and gas; Foraminifera; ecology; environmental impact; Offshore Ecology Investigation;

00690
Inamoto, T. 1965. Summary of tuna observations in the Gulf of Mexico on cruises of the exploratory fishing vessel Oregon, 1950-1963. Comm. Fish. Rev. 27(1):7-14.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fish; fisheries; tuna;

00691
Inglis, A.; Chin, E. 1959. The bait shrimp industry of the Gulf of Mexico. U.S. Fish and Wildlife Service, Fishery Leaflet 430. 14 p. (Revision of Fishery Leaflet 337).

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; socioeconomics; shrimp; fishery statistics;

00692
Inglis, A.; Chin, E. 1966. The bait shrimp industry of the Gulf of Mexico. U.S. Fish and Wildlife Service, Fishery Leaflet 582. 10 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; socioeconomics; shrimp; fishery management;

00693
Interstate Electronics Corporation. 1982. Appendix to Mississippi River - Gulf Outlet, Louisiana ocean dredged material disposal site designation. Interstate Electronics Corporation, Ocean Engineering Operations, Anaheim, CA. 49 p.

ABSTRACT: Interstate Electronics Corporation (IEC) conducted two field surveys at the Gulf Outlet ODMDS during November-December 1980 and May-June 1981. Physical, chemical, biological, and geological oceanographic data were collected to assess the effects of dredged material disposal on the marine environment, and to augment historical information for the area. A major consideration of survey design was to determine whether any adverse effects identified within the ODMDS were detectable outside site boundaries. Methods of collection, results, and interpretations of the survey data are presented in the following sections. Data are briefly compared with historical information; however, more comprehensive treatment is given in Chapter 3 of this EIS.
KEYWORDS: Louisiana; Mississippi River; biology; chemistry; geology; benthos; dredging; environmental impact;

00694
Interstate Electronics Corporation. 1982. Appendices to Southwest Pass - Mississippi River ocean dredged material disposal site designation. Interstate Electronics Corporation, Ocean Engineering Operations, Anaheim, CA. 47 p.

ABSTRACT: Interstate Electronics Corporation (IEC) conducted two field surveys at the Gulf Outlet ODMDS during November-December 1980 and May-June 1981. Physical, chemical, biological, and geological oceanographic data were collected to assess the effects of dredged material disposal on the marine environment, and to augment historical information for the area. A major consideration of survey design was to determine whether any adverse effects identified within the ODMDS were detectable outside site boundaries. Methods of collection, results, and interpretations of the survey data are presented in the following sections. Data are briefly compared with historical information; however, more comprehensive treatment is given in Chapter 3 of this EIS.
KEYWORDS: Louisiana; Mississippi River; Southwest Pass; biology; chemistry; geology; benthos; dredging; environmental impact;

00695
Ishizuka, T.; Ittekkot, V.; Degens, E.T.; Kawahata, H. 1986. Preliminary data on dissolved organic carbon and sugar in interstitial water from the Mississippi Fan and Orca and Pigmy Basins, Deep Sea Drilling Project Leg 96, p. 729-732. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; chemistry; organic carbon; Deep Sea Drilling Project;

00696
Ishizuka, T.; Kawahata, H.; Aoki, S. 1986. Interstitial water geochemistry and clay mineralogy of the Mississippi Fan and Orca and Pigmy Basins, Deep Sea Drilling Project Leg 96, p. 711-728. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; chemistry; geology; sediment; mineralogy; Deep Sea Drilling Project;

00697
Jackson, M.P.A.; Seni, S.J. 1983. Geometry and evolution of salt structures in a marginal rift basin of the Gulf of Mexico, east Texas. Geology 11(3):131-135.

ABSTRACT: None
KEYWORDS: Texas; geology; diapir; geologic history;

00698
Jackson, W.B. [ed.]. 1979. Environmental assessment of an active oil field in the northwestern Gulf of Mexico, 1977-1978. A report by the National Marine Fisheries Service, Galveston, TX to the U.S. Environmental Protection Agency, Washington, DC. Contract No. EPA-IAG-D5-E693-EO.

ABSTRACT: Objectives of the project were (1) to identify and document the types and extent of biological, chemical and physical alterations of the marine ecosystem associated with Buccaneer Oil Field, (2) to determine specific pollutants, their quantity and effects, and (3) to develop the capability to describe and predict fate and effects of Buccaneer Oil Field contaminants. A brief Pilot Study was conducted in the fall and winter of 1975-76, followed by an extensive survey in 1976-77 comparing the Buccaneer Oil Field area with adjacent undeveloped or control areas. In 1977-78, investigations were intensified within Buccaneer Oil Field, comparing conditions around production platforms, which release various effluents including produced brine, with those around satellite structures (well jackets) which release no effluents. Third-year studies around Buccaneer Oil Field structures focused on (1) determining concentrations and effects of pollutants in major components of the marine ecosystem, including seawater, surficial sediments, suspended particulate matter, fouling community, bacterial community, and fishes and macro-crustaceans, (2) effects of circulation dynamics and hydrography on distribution of pollutants, and (3) mathematical modeling to describe and predict sources, fate and effects of pollutants.
KEYWORDS: Gulf of Mexico; physical; continental shelf; Buccaneer Field; biology; chemistry; geology;

00699
Jackson, W.B.; Baxter, K.N.; Caillouet, C.W. 1978. Environmental assessment of the Buccaneer oil and gas field off Galveston, Texas: an overview, p. 277-284. In Proceedings, 10th Annual Offshore Technology Conference. Paper No. OTC-3081.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; biology; chemistry; geology; physical; environmental impact; Buccaneer Field;

00700
Jackson, W.B.; Baxter, K.N.; Caillouet, C.W. 1979. Environmental assessment of an offshore oil field. Ecolibrium 8(1):7-9.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; biology; chemistry; geology; physical; environmental impact; Buccaneer Field;

00701
James, B.M. 1966. The Euphausiacea of the Gulf of Mexico and northwestern Caribbean. Master's thesis. Texas A&M University, College Station, TX. 75 p.

ABSTRACT: Plankton samples were collected along a transect from Miami, Florida to Galveston, Texas. Adult and subadult euphausids were removed and identified. Seventeen species not previously recorded in the Gulf were found during this study. A key to the 28 euphausids of the Gulf of Mexico is included.
KEYWORDS: Gulf of Mexico; biology; plankton; taxonomy;

00702
James, W.P. [ed.]. 1977. Proceedings of Strategic Petroleum Workshop on Environmental Considerations of Brine Disposal near Freeport, Texas, Held February 17 and 18, 1977. Center for Marine Resources, Texas A&M Univ., College Station, TX.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; continental shelf; brine disposal; Strategic Petroleum Reserve;

00703
Jeffrey, L.M. 1955. Literature survey of Lake Charles, Louisiana, Gulfport and Mobile, Alabama, and Pensacola, Florida and their approaches. Dept. of Oceanography, Texas A&M Univ. Ref. No. 55-34F.

ABSTRACT: This volume if divided into four sections relating to the physical oceanography of Lake Charles, LA, Gulfport and Mobile, AL, and Pensacola, FL: water mass characteristics, transparency, currents, and sea and swell. With each section a comprehensive bibliography of related topics is given along with a brief discussion of results of data obtained from the given bibliography. Included are charts and tables of salinity, temperature, tides, currents, transparency, and sea and swell information.
KEYWORDS: Louisiana; Alabama; Florida; physical; coastal waters; bibliography; wave; temperature; salinity; tide;

00704
Jeffrey, L.M. 1972. Organic chemistry, p. 5-6. In V.C. Bushnell [ed.], Chemistry, primary productivity, and benthic algae of the Gulf of Mexico. Serial Atlas of the Marine Environment, Folio 22. Am. Geogr. Soc., New York.

ABSTRACT: The article reviews the literature pertaining to organic compounds, including carbohydrates and amino acids, occurring in waters from the Gulf of Mexico. Other organic compounds are discussed, as is the importance of stable carbon isotope ratios in understanding organic geochemical processes.
KEYWORDS: Gulf of Mexico; chemistry;

00705
Jeffrey, L.M. 1980. Petroleum residues in the marine environment, p. 163-179. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon; beach;

00706
Jeffrey, L.M.; Pequegnat, W.E.; Kennedy, E.A., Jr.; Voss, A.; James, B.M. 1974. Pelagic tar in the Gulf of Mexico and Caribbean Sea, p. 233-235. In Marine Pollution Monitoring (Petroleum). U.S. Department of Commerce, National Bur. Standards Spec. Pub. 316 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; hydrocarbon;

00707
Jensen, R.E. 1985. Atchafalaya River Delta. Rep. 10. Wave Hindcasts. Appendix C. Army Engineer Waterways Experiment Station, Vicksburg, MS. Hydraulics Lab. Rep. No. WES/TR/HL-82-15/10-APP-C. 282 p. NTIS order No. AD-A157 075/3/XAB.

ABSTRACT: The data presented in this appendix represent the 1-year hindcast wave information in terms of 1-year and seasonal percent occurrence tables. The description and their use are described in the main text. A brief description of each product is given in the main text and also information and examples pertaining to the use of these tables.
KEYWORDS: Louisiana; estuary; coastal waters; Atchafalaya River Delta; Atchafalaya Bay; physical; wave;

00708

Jerneloev, A.; Linden, O. 1981. Ixtoc I: A case study of the world's largest oil spill. Ambio 10(6):299-306.

ABSTRACT: None
KEYWORDS: Texas; Mexico; oil and gas; oil spill; environmental impact; biology; chemistry; Ixtoc;

00709

Johnson, A.G.; Fable, W.A.; Barger, L.E.; Williams, M.L. 1980. Preliminary report on the age and growth of king mackerel (Scomberomorus cavalla) from the United States. Collect. Vol. Sci. Pap. ICCAT Recl. Doc. Sci. CICTA Colecc. Doc. Cient. CICAA, 9(3), 722-733, ICCAT SCRS/79/91.

ABSTRACT: Preliminary results of a study of the age and growth of king mackerel from the recreational fishery of the south Atlantic and Gulf of Mexico coasts of the United States are presented. The age composition varied between locations. Ages of Texas fish ranged from 1 to 9 years, Louisiana from 1 to 14, northwest Florida from 0 to 10, South Carolina from 1 to 12, and North Carolina from 1 to 12. Generally Louisiana had the majority of the older fish, while northwest Florida had the majority of younger fish. The other areas had intermediate age distributions. The oldest males were 9 years old and the oldest females 14 years old. Theoretical growth varied greatly between locations. Von Bertalanffy growth parameter (K, L infinity in mm FL, and t SUB-o in years) ranges were: males - K = 0.32 to 1.38, L affinity = 757 to 1071, and t SUB-o = -1.39 to 0.44 females - K = 0.04 to 0.62, L affinity = 891 to 3203, and t SUB-o = -3.76 to -0.21. This study revealed differences between regions implying segregation of the population by age.
KEYWORDS: Gulf of Mexico; fish; biology; mackerel; fisheries; recreation;

00710

Johnson, M.F. 1981. Shrimp and redfish studies, Bryan Mound Brine Disposal Site Off Freeport, Texas, 1979-1981. Vol. 2. Shrimp mark-release investigations. National Marine Fisheries Service, Southeast Fisheries Center, Galveston, TX. Tech. Mem. NOAA-TM-NMFS-SEFC-66, 141 p.

ABSTRACT: The objectives of the study were to: tag and release juvenile and adult brown shrimp (Penaeus aztecus) and white shrimp (P. setiferus), inshore and offshore, and day and night determine mortality due to tagging estmate tag loss determine effect of tagging on growth determine effect of tagging on predation by redfish (Sciaenops ocellata) estimate rates of non-reporting and non-recognition of recaptured tagged shrimp and obtain continuous (hourly) bottom temperature measurements at Buccaneer Gas and Oil Field.
KEYWORDS: Texas; coastal waters; continental shelf; biology; fisheries; shrimp; environmental impact; Buccaneer Field; Strategic Petroleum Reserve;

00711

Johnson, M.F. 1981. Shrimp and redfish studies, Bryan Mound Brine Disposal Site off Freeport, Texas, 1979-1981. Vol. 4 -- Interview sampling survey of shrimp catch and effort. National Marine Fisheries Service, Galveston, TX. Southeast Fisheries Center. NOAA Tech. Mem. NOAA-TM-NMFS-SEFC-68. 62 p.

ABSTRACT: An interview sampling survey of shrimp catch and fishing effort was conducted at specified ports along Texas coast to strengthen the information base required to determine the effect of the disposal of brine from the Bryan Mount salt dome off Freeport, Texas on commercial brown shrimp (Penaeus aztecus) and white shrimp (Penaeus setiferus) populations in the Gulf of Mexico. LGL port agents interviewed shrimpers at the ports of Galveston, Port Bolivar, Kemah, Freeport, Palacious, Port Lavaca, Port O'Connor, Rockport-Fulton and Aransas Pass. The data recorded included port number, vessel name, official vessel number, shrimp dealer number, date of landing, area fished, depth of capture, days fished, and pounds of shrimp caught by species and size categories. Additional detailed information on number and size of trawls, area of fishing (latitude and longitude), and fishing effort (day vs. night) was reported by LGL. The LGL port agents also collected, processed and recorded data for a total of 2,128 tagged shrimp recovered by shrimpers, fish house employees and bait dealers.
KEYWORDS: Texas; coastal waters; oil and gas; fisheries; brine disposal; shrimp; drum; environmental impact; Strategic Petroleum Reserve;

00712

Johnson, R.W. 1981. Remote sensing experiment at the Galveston dumpsite on July 25, 1977, p. 205-218. In Western Gulf of Mexico dumping site assessment report. Dumpsite evaluation report. NOAA Office of Marine Pollution Assessment, Boulder, CO. NOAA Spec. Rep. No. NOAA-SR-DER-81-2.

ABSTRACT: Remotely-sensed data collected during dumping of biosludge waste material indicate that dumping and subsequent plume dispersion may be effectively monitored. The plume provided a relatively weak but consistent increase in radiance in the visible and near-infrared spectral range. Normalized spectral responses of the biosludge material were determined to be similar to those obtained from similarly dumped sewage sludge and different from acid wastes previously monitored in the Atlantic coastal zone. Although radiance values were higher in the plume, no consistent quantitative relationship was determined between discrete measured concentrations of suspended solids in the plume and remotely-sensed radiance values. It appears that dispersion of the plume in the top several meters of the clear Gulf of Mexico water was a contributing factor. That is, the remote sensor measured and integrated response while the water samples were taken at discrete locations.
KEYWORDS: Texas; continental shelf; physical; ocean dumping; remote sensing;

00713

Johnson, W.B.; Gosselink, J.G. 1982. Wetland loss directly associated with canal dredging in the Louisiana coastal zone, p. 60-72. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59. 256 p.

ABSTRACT: This study addresses wetland losses directly resulting from canals including initial construction practices and subsequent canal bank erosion. The average actual width of the newly dredged canals studied exceeded the width specified in the dredging permit by 13.4 m. The total width affected, including berm and spoil deposits, exceeded the permitted canal width by an average 81.7 m. As canals age, they widen through erosion. The history of three old canal systems in coastal Louisiana was examined. All these canals continue to increase in width and differences in their patterns of widening can be explained by boat traffic, length of time since construction, and substrate differences. The widening rate in the Leeville oilfield is directly related to the proximity of the canal to boat traffic. Canals in areas of greatest boat activity widened at a rate of 2.58 m/yr, while those in areas of minimal boat activity widened at a rate of 0.95 m/yr.
KEYWORDS: Louisiana; marsh; geology; erosion; dredging;

00714

Jones, A.C.; Klima, E.F. 1984. Executive summary of the 1983 Texas closure. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-135; NOAA-84071104. 19 p. NTIS order No. PB84-220383.

ABSTRACT: The regulation to close the Fishery Conservation Zone (FCZ) waters off the coast of Texas to shrimp fishing from May 27 to July 15, 1983, benefitted the Gulf brown shrimp fishery by increasing the yield by about 3% (1.6 million pounds), based on May-August data. No increase in ex-vessel value for 1983 was shown, although the estimate at this time is preliminary and subject to change. In 1981 and 1982 the FCZ closure provided benefits of 3.6 million pounds (1981) and 1.5 million pounds (1982), which represented increases to the Gulf fishery of 5% and 3% respectively. Benefits in dollars were $8.3 million (1981) and $1.4 million (1982), which represented increases of 7% and 1%. The best estimate is that overall the Texas FCZ closure provided a small but positive benefit in both yield and ex-vessel value to the fishery.
KEYWORDS: Texas; coastal waters; biology; fisheries; shrimp; fishery management;

00715

Jones, A.C.; Zweifel, J.R. 1982. Shrimp fleet mobility in relation to the 1981 Texas closure. Mar. Fish. Rev. 44:50-54.

ABSTRACT: This study was undertaken to provide information on the seasonal fishing activities of the Gulf shrimp fleet. The study describes the mobility of western Gulf shrimp vessels, compares fleet mobility in 1981 with that in earlier years, and relates the results to the 1981 closure of the Texas brown shrimp fishery. Companion studies in this series address the effect of this fishing activity-on catch rates and utilization of shoreside facilities.
KEYWORDS: Texas; coastal waters; fisheries; fishery management; fishery statistics; shrimp;

00716
Jones, J.I.; Williams, S.E. 1979. The distribution and origin of bottom sediments in Timbalier Bay, Louisiana, and the adjacent offshore area, p. 201-221. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; chemistry; geology; oil and gas; sediment; sediment texture; organic carbon; cuttings; trace metal; environmental impact; Offshore Ecology Investigation;

00717
Jones, P.H. 1975. Geothermal and hydrodynamic regimes in the northern Gulf of Mexico Basin, p. 15-89. In Proceedings, 2nd U.N. Symposium on the Development and Use of Geothermal Resources, Vol. 3.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi River Delta; geology; sedimentation; sediment;

00718
Jones, P.H.; Wallace, R.H. 1973. Hydrogeologic aspects of structural deformation in the northern Gulf of Mexico basin, p. 89-115 In Structures of the Gulf Basin, Part I. New Orleans Geological Society.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; geology; continental shelf; continental slope; deep sea;

00719
Joss, J.W.; Marak, R.R. 1983. MARMAP (Marine Resources Monitoring, Assessment, and Prediction) plankton survey manual. National Marine Fisheries Service, Northeast Fisheries Center, Woods Hole, MA. NOAA-TM-NMFS-F/NEC-21. 278 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; biology; fisheries; plankton;

00720
Kakareka, J.P. 1974. A study of organic pollutant transfer processes in the estuarine environment. Master's thesis. Texas A&M University, College Station, TX. 96 p.

ABSTRACT: Levels of DDT, DDE, DDD, PCB's and phthalates were determined for sediment, suspended matter and water in the Mississippi River delta and near shore areas of the northern Gulf of Mexico. Water samples were collected at 30 stations and sediment samples at 16 stations during a July, 1973 cruise by the R/V Longhorn and a May and June, 1974 cruise by the R/V Gyre.
KEYWORDS: Louisiana; pesticide; phthalate; PCB; coastal waters; chemistry; sediment;

00721
Kalinsky, R.G. 1983. Notes on Louisiana algae. 2. A checklist of the non-marine algal flora of Louisiana. Proc. La. Acad. Sci. 46:62-96.

ABSTRACT: A checklist of the non-marine algal flora of Louisiana, excluding Lake Pontchartrain and coastal Gulf of Mexico regions, is compiled for the first time. Although some estuarine algal taxa are included, marine algae are excluded from this checklist. The checklist includes 1,296 algal taxa representing 226 genera, 34 orders, and 13 classes. The classes Zygophyceae, Bacillariophyceae, and Chlorophyceae account for 76% of the algal taxa reported in Louisiana.
KEYWORDS: Louisiana; estuary; biology; flora;

00722
Kamykowski, D.; Bird, J.L. 1981. Phytoplankton associations with the variable nepheloid layer on the Texas continental shelf. Estuar. Coast. Shelf Sci. 13 (3):317-326.

ABSTRACT: Four 24-h cruises occupied a station at 33 m depth on the Texas continental shelf during June, July, Sept. and Nov., 1978. Samples collected at 4-h intervals investigated the state of selected physical, chemical and biological factors potentially important to phytoplankton associated with the nepheloid layer. The nepheloid layer varied in thickness and in density within and between cruises. Phytoplankton biomass was differentially associated with the nepheloid layer in June and July but not in Sept. and Nov. The first 2 cruises showed a mixed phytoplankton community (> 20 .mu.m) composed of pelagic and benthic species and a net C-fixation within the nepheloid layer. Based on photic zone depth, enhanced phytoplankton biomass resulting from growth can theoretically accumulate within the nepheloid layer between the coast and the 70-m contour from July-Sept. This phytoplankton concentration may provide an important food reservoir to eligible herbivores during the summer months.
KEYWORDS: Texas; continental shelf; biology; plankton; nepheloid;

00723
Keithly, W.; Liebzeit, A.; Liffmann, M. 1987. Louisiana's boating sector. Louisiana Sea Grant Pub. No. LSU-T-87-002. 30 p.

ABSTRACT: Examines the Louisiana boating sector through the use of secondary data detailing several facets of the industry, including boat building, repair, and retailing. Comparisons are made with boating industries in other Gulf states and nationwide.
KEYWORDS: Louisiana; socioeconomics;

00724
Keller, C.E.; Adams, J.K. 1983. Proceedings of a workshop on cetaceans and sea turtles in the Gulf of Mexico: study planning for effects of outer continental shelf development. University of Southern Mississippi, Long Beach, April 6-8, 1982. U.S. Fish Wildl. Serv. FWS/OBS-83/03. Also Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. Rep. No. MMS-GM-PT-83-003. 50 p.

ABSTRACT: A workshop was held in Long Beach, Mississippi, in April 1982, allowing invited researchers to discuss the state of knowledge, information gaps, and research needs for cetaceans and marine turtles in the Gulf of Mexico. Specific points addressed by the participants were: Ways animals may have been or could be affected by offshore oil and gas development; and Data needed to predict, detect, or mitigate such effects.
KEYWORDS: Gulf of Mexico; continental shelf; coastal waters; biology; ecology; turtle; marine mammal; oil and gas; environmental impact; endangered species;

00725
Keller, C.E.; Spendelow, J.A.; Greer, R.D. 1984. Atlas of wading bird and seabird nesting colonies in coastal Louisiana, Mississippi, and Alabama: 1983. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-84/13. 127 p.

ABSTRACT: Aerial surveys of waterbird colonies in coastal Louisiana, Mississippi, and Alabama were conducted in May and June of 1983. The major objective of these surveys was to provide up-to-date locations of active colony sites. Historic colony sites reported in 1976 and 1978 were checked, and additional areas were searched for new colonies. The location, species composition, habitat, and an overall estimate of colony size were recorded for each of the 188 active colonies observed in 1983. Locations were mapped on both 1:250,000 and 1:24,000 scale maps.
KEYWORDS: Louisiana; Mississippi; Alabama; barrier island; beach; marsh; biology; ecology; bird;

00726
Keller, G. 1985. Eocene and Oligocene stratigraphy and erosional unconformities in the Gulf of Mexico and Gulf Coast. J. Paleontol. 59(4):882-903.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; geology; stratigraphy; erosion;

00727

Kelly, F.J., Jr. 1982. A comparison of the near bottom current velocity characteristic at two Gulf brine disposal sites based on long term current measurements, p. 1116. In OCEANS 82 Conference Record: Industry, government, education - Partners in progress - Washington, DC, September 20-22, 1982. (Summary only.).

ABSTRACT: The Strategic Petroleum Reserve Office of the Department of Energy is currently disposing of brine at two sites in the Gulf of Mexico, one off Freeport, Texas and the other off Cameron, Louisiana. Texas A&M University has been collecting physical oceanographic data as part of a multidisciplinary environmental study of each site to determine the impact of the discharge of the brine. This paper describes the data base which is available for each site, and as an example of the use of such data for pollution studies it characterizes the current regime in the near bottom layer at each site. The results show that in the near bottom layer at Bryan Mound the mean and residual components of current are generally large compared to the tidal component and to diffusion, while at West Hackberry they are smaller and the tidal component is larger, which implies that the pollutant plume can be expected to be more elongated at Bryan Mound and more radially symmetric at West Hackberry. Some less frequently occurring conditions, such as periods of stagnation and strong vertical stratification and their effect on the plume pattern are also discussed.
KEYWORDS: Texas; Louisiana; coastal waters; oil and gas; physical; current; tide; brine disposal; Strategic Petroleum Reserve;

00728

Kelly, J.R. 1965. A taxonomic survey of the fishes of Delta National Wildlife Refuge with emphasis upon distribution and abundance. Master's Thesis. Louisiana State University and Agricultural and Mechanical College, Baton Rouge, LA. 133 p.

ABSTRACT: This study was conducted on Delta National Wildlife Refuge, situated in the estuarine portion of the Mississippi River from August, 1963 to February, 1965. Determinations were made of fish distribution, abundance, and relationships to salinity and temperature. Collections were made with an electric shocker, gill and trammel nets, otter trawl, and rotenone. Block-off nets and rotenone were used to determine standing crop. Water analyses, including salinity and temperature, were recorded at the sampling locations. A definite relationship of abundance and distribution was evident between fresh water fishes and salinity; however, salinity was not found to be a limiting factor to most marine species. Accessibility to ponds and temperature were found to be the controlling factors relating to distribution, abundance, and seasonal occurrence of marine fishes. Fishes collected represented 33 families and 79 species. Calculated from standing crop samples, Sciaenidae was the most abundant family of marine fishes and Centrarchidae was the most abundant fresh water family. Striped mullet and blue catfish were the most abundant species. The study area is being used as a nursery ground for several marine species. Young of Atlantic croaker, spot, sand seatrout, spotted seatrout, and large scale menhaden were present seasonally throughout the study area. Adult marine species encountered on the refuge containing ripe eggs or young were Atlantic needlefish, Atlantic stingrays, bluntnose stingrays, and gulf pipefish. Standing crops of fishes within the study area varied from 1.22 to 258.82 pounds per acre. Ponds south of Main Pass contained higher standing crops than those north of Main Pass.
KEYWORDS: Louisiana; Mississippi River; estuary; biology; fish; ecology;

00729

Kendall, J.J., Jr.; Powell, E.N.; Connor, S.J.; Bright, T.J. 1983. The effects of drilling fluids (muds) and turbidity on the growth and metabolic state of the coral Acropora cervicornis, with comments on methods of normalization for coral data. Bull. Mar. Sci. 33(2):336-352.

ABSTRACT: The effects of a used drilling mud on coral health were examined by monitoring changes in calcification rate, soluble tissue protein concentration, and total ninhydrin positive substance (NPS) concentration in the coral Acropora cervicornis. Exposure to a used drilling mud reduced calcification rate in growing tips by 62%, 83%, and 88% at 25 ppm, 50 ppm, and 100 ppm (v/v), respectively, after a 24-h exposure period. Soluble tissue protein concentration dropped significantly in the growing tip after 24 h exposure to a solution of 25 ppm, 50 ppm, 100 ppm, and 500 ppm drilling fluid. Total NPS dropped significantly at the 100 ppm and 500 ppm concentrations. Extensive zooxanthellae loss was observed after exposure to a solution of 500 ppm drilling mud for 24 h. Equivalent concentrations of kaolin (to produce turbidity) caused no drop in NPS or protein concentration and a much lower drop in calcification rate, suggesting that the toxic effects observed for the drilling mud were not caused by an increase in turbidity alone. The significant drop in protein concentration suggests that the use of protein or other tissue components for normalization in corals may not be justified in some cases and should be viewed with caution.
KEYWORDS: biology; oil and gas; drilling fluid; environmental impact; benthos; physiology;

00730
Kendall, J.J., Jr.; Powell, E.N.; Connor, S.J.; Bright, T.J.; Zastrow, C.E. 1984. The importance of monitoring metabolic recovery in the coral Acropora cervicornis after short-term exposure to drilling muds: calcification rate and protein concentration. Coral Reefs 2:215-225.

ABSTRACT: The effect of used drilling muds on coral health was examined by monitoring changes in calcification rate and soluble tissue protein concentration in the coral Acropora cervicornis. Exposure to 25 ppm (v/v) of one mud for 24 h reduced calcification rate in the growing tips by as much as 62%. In recovery experiments, corals were exposed to drilling muds for 24 h; some of them were allowed to recover in clean seawater for 48 h. After the 24-h exposure, calcification rates were significantly less than those of the controls. After a 48-h recovery period, calcification rates returned to control levels for one mud but were still significantly below control levels for another. The results indicate that the capacity for recovery after exposure cannot be predicted from the results of experiments on exposure only. Recovery capacity must be independently verified for all studies on the effects of short-term exposure to drilling muds.
KEYWORDS: biology; oil and gas; drilling fluid; environmental impact; benthos; physiology;

00731
Kennedy, E.A., Jr. 1959. A comparison of the molluscan fauna along a transect extending from the shoreline to a point near the edge of the continental shelf of the Texas coast. M.A. thesis. Texas Christian Univ.

ABSTRACT: Benthic samples were collected from 18 stations along a transect from shore, across Heald Bank, to near the shelf edge. Three faunal assemblages were recognized: shallow shelf, deep shelf, and transitional. The shallow shelf yielded the greatest number of specimens, but the deep shelf yielded the largest number of species.
KEYWORDS: Texas; coastal waters; continental shelf; biology; benthos;

00732
Kennett, J.P.; Elmstrom, K.; Penrose, N. 1985. The last deglaciation in Orca Basin Gulf of Mexico high-resolution planktonic foraminiferal changes. Palaeogeogr. Palaeoclimatol. Palaeoecol. 50:189-216.

ABSTRACT: Anoxic sediments in Orca Basin, northern Gulf of Mexico (water depth 2400 m) provide late Quaternary planktonic foraminiferal and paleoclimatic records of remarkably high resolution (about 250 yrs). Black, organic-rich, strongly laminated, unbioturbated muds of Orca Basin contrast with grayish, organic-poor, bioturbated sediments immediately outside of the basin. Planktonic foraminiferal assemblages contained within totally anoxic sediments exhibit superb preservation and probably have not been changed much, by dissolution or other processes, from the original living assemblage. A quantitative comparison of surface-sediment assemblages (> 100 .mu.m and > 175 .mu.m size fractions) from the anoxic area and from the oxygenated regime immediately outside the basin, nevertheless has revealed no significant differences between the assemblages. It is inferred, therefore, that the assemblages well above the lysocline in the northern Gulf have been subjected to little postmortem alteration, even though their preservation does not match those from the Orca Basin. Planktonic foraminiferal assemblages have been counted in 2 piston cores from Orca Basin that are as old as 29 kyrs B.P., and which contain continuous, high-resolution records of the last deglaciation. The location of these cores is 290 km S of the modern Mississippi Delta and is known to have been within the influence of meltwater discharge from the Mississippi River system during the last deglaciation of the Laurentide ice sheet, an event which significantly decreased surface-water salinities in the Gulf of Mexico. This meltwater effect is strongly recorded in the Orca Basin sequence. Faunal and stable-isotope changes have been evaluated in relation to the Pleistocene-Holocene transition and are associated with 2 major processes related to deglaciation: (1) the well-known glacial-to-interglacial surface-water changes as cool Gulf waters were replaced by warmer water masses; and (2) severe open-ocean surface-water salinity decrease resulting from the meltwater discharge into the Gulf between about 16.5 and 12 kyrs ago. Species associations were dynamically changing throughout the late Quaternary in the northern Gulf in response to oceanic and continental influences. In the sequence, the glacial assemblage is replaced about 16.5 kyrs ago by the low-salinity assemblage which itself persisted until about 12 yrs ago when the meltwater ceased to flow into the Gulf and was replaced briefly (for 1.5 kyrs) by a return of the glacial assemblage until about 10.5 yrs ago. This cool interval seems to be correlative with the Younger Dryas cold episode of Europe, and with the cold interval between Termination 1A and 1B in north Atlantic cores. After this, the warm-water (interglacial) assemblage migrated into the gulf. Early Holocene (10.5-5 kyrs ago) assemblages are quantitatively distinct from late Holocene (5-0 kyrs ago) assemblages. Unlike previously documented associations, Globigerinoides ruber rather than Neogloboquadrina dutertrei, dominated during intervals of low surface-water salinity in the Orca Basin. We believe that surface-water masses were still too cool during the meltwater spike and salinities were too low for the proliferation of N. dutertrei. On the other hand G. ruber, a more euryhaline opportunistic species, survived the severe conditions, but did not prosper. N. dutertrei distinctly increased to moderate frequencies in the second half of the meltwater spike probably as surface waters warmed during deglaciation. In cores more distant from the Mississippi River outfall region, where oxygen isotopic evidence indicates the occurrence of less severe salinity reductions, N. dutertrei exhibits a distinct frequency peak, and G. ruber is less dominant. Species frequency oscillations provide intercore correlations at a resolution of only several hundred years.
KEYWORDS: Louisiana; continental slope; geology; foraminifera; geologic history; glaciation; plankton;

00733

Kennicutt, M.C. II; Brooks, J.M.; Bidigare, R.R.; Fay, R.R.; Wade, T.L.; McDonald, T.J. 1985. Vent-type taxa in a hydrocarbon seep region on the Louisiana slope. Nature 317:351-353.

ABSTRACT: None
KEYWORDS: Louisiana; continental slope; biology; chemistry; benthos; bacteria; hydrocarbon; seep; chemosynthesis; stable isotope;

00734

Kennicutt, M.C. II; DeFreitas, D.A.; Joyce, J.E.; Brooks, J.M. 1986. Nonvolatile organic matter in sediments from Sites 614 to 623, Deep Sea Drilling Project Leg 96, p. 747-756. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; hydrocarbon; sediment; Deep Sea Drilling Project;

00735

Kennicutt, M.C. II; Denoux, G.J.; Brooks, J.M.; Sandberg, W.A. 1987. Hydrocarbons in Mississippi Fan and intraslope basin sediments. Geochim. Cosmochim. Acta 51 (6):1457-1466.

ABSTRACT: Aliphatic and aromatic hydrocarbons in sediments of the middle and lower Mississippi Fan and two intraslope basins in the Gulf of Mexico are derived from terrestrial organic matter and thermogenic, mature hydrocarbons. The terrestrial hydrocarbon component consists primarily of terrigenous, plant biowaxes (n-alkanes with 21 to 33 carbons). The occurrence of thermogenic hydrocarbons in immature near-surface sediments, their molecular distributions, and concentration variations with depth suggest that the majority of these mature hydrocarbons have migrated from a source much deeper in the sediment column. A portion of the thermogenic hydrocarbons may be derived from recycled material and includes phenanthrene, methyl phenanthrenes, chrysene, and benzopyrenes. The migrated, thermogenic hydrocarbons include normal and isoprenoid alkanes with less than 21 carbons, naphthalene, methyl naphthalenes, ethyl naphthalenes, and other aromatics of similar volatility (i.e., biphenyl, acenaphthene, and fluorene). Triterpane, sterane, and aromatized sterane distributions suggest that the thermogenic hydrocarbons at both sites have a common source and are overprinted with immature sediment hydrocarbons. The biomarker distributions and carbon isotopic compositions of the thermogenic hydrocarbons are atypical for petroleum produced in the Gulf of Mexico. Molecular distributions of the hydrocarbons are constant, regardless of the present depth of occurrence, suggesting that they have migrated in a separate phase. The upward migration of hydrocarbons from deeper sources is a wide-spread phenomenon in the Gulf of Mexico with several documented cases of massive seepage (visible oil) as well as the more diffuse permeation of Pleistocene sediments of the Mississippi Fin and two intraslopes reported here.
KEYWORDS: Louisiana; continental slope; Mississippi Fan; chemistry; geology; hydrocarbon; sediment;

00736

Kennicutt, M.C. II; Sericano, J.L.; Wade, T.L.; Alcazar, F.; Brooks, J.M. 1987. High molecular weight hydrocarbons in Gulf of Mexico continental slope sediments. Deep-Sea Res. 34(3):403-424.

ABSTRACT: Sediments on the Gulf of Mexico continental slope contain a mixture of terrigenous, petroleum, and planktonic hydrocarbons. The relative amount of these three inputs varies as a function of location, water depth, and time of sampling. The hydrocarbon concentrations measured are generally lower than those previously reported for shelf and coastal Gulf of Mexico sediments. The influence of land-derived material decreases from the central to the western to the eastern Gulf of Mexico. Petroleum inputs are measurable at all sites sampled. Natural seepage was considered to be a significant source of hydrocarbons to slope sediments. Hydrocarbon concentrations vary by 1-2 orders of magnitude along a given isobath due to changes in sediment texture and hydrocarbon inputs. Variability along an isobath is as great if not greater than that seen over a depth range of 300-3000 m along a single transect. In general, the highest aliphatic hydrocarbon concentrations are associated with the more clayish/organic-rich sediments. Aromatic hydrocarbons are below gas chromatographic detection limits at all sites (<5 ppb), but their presence is inferred from spectro-fluorescence analyses, confirming the presence of petroleum-related hydrocarbons at all sites.
KEYWORDS: Gulf of Mexico; continental slope; chemistry; hydrocarbon; sediment;

00737

Ketchum, B.H. 1974. Movement of heavy metals and organohalogens through food chains and their effects on populations and communities, p. 285-300. In A.D. McIntyre and C.F. Mills [ed.], Ecological toxicology research. Plenum Press, New York.

ABSTRACT: The effects of chemical pollutants on populations and communities are discussed.
KEYWORDS: biology; chemistry; trace metal; pesticide; environmental impact; ecology;

00738

Khromov, N.S. 1965. Distribution of plankton in the Gulf of Mexico and some aspects of its seasonal dynamics. Soviet - Cuban Fishery Research Translations.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; plankton; primary production;

00739

Kindinger, J.L. 1983. Late Quaternary geologic history of the Louisiana-Mississippi outer continental shelf: an atlas and final report. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA.

ABSTRACT: In 1981, 2000 miles (3200 km) of high-resolution seismic-reflection data was collected east of the Mississippi River delta on the Louisiana-Mississippi continental shelf and slope. The survey grid established had tracklines running parallel and perpendicular to other shelf break, with 3 mi (5 km) spacings. The seismic data was used to compile a geologic history of the area since the early Wisconsin. The area is characterized by seven stages of progradational and transgressive events. The stages, as indicated by seismic data, are an early Wisconsinan low stand, early Wisconsinan transgression, and Holocene deposition. On the shelf during the late Wisconsinan there were several levels of stream channeling and a relatively large progradational delta system, all of which seismic data indicates fluctuations in sea level. The large range in sediment types, from sandier river fill within the channels to variable amounts of intermixed sands and muds in the estuarine fill, leads to engineering considerations in rig platform placement. Two other sediment types which represent potential geohazard or technical consideration are shallow buried oyster banks and shallow gas-charged sediments. Fault and diapirs are the main features on the shelf-bread and slope. The faults are related to sediment movement downslope and with sediment shifting caused by diapiric action. These diapirs have been major targets for petroleum exploration; five of the six diapirs in the area have had exploration wells drilled on them and three have producing fields on the flanks. Faults displacing surface sediments along the slope are relatively common and imply recent movement. Surficial sediments are generally sand-enriched with an average of 56 percent sand, 26 percent silt, and 18 percent clay. The distribution of the surficial sediments is the product of fluctuating sea level. The general surficial water circulation pattern suggests that a combination of wind-stress induced circulation, semi-permanent currents, discharge of water from Mississippi River, and tidal motion among the Chandeleur-Breton Sounds estuary and Mississippi Sound were interacting to produce a clockwise gyre in the central portion of the area.
KEYWORDS: Louisiana; Mississippi; continental shelf; continental slope; geology; geologic history; diapir; faulting; sediment; sediment texture; hazard;

00740

Kindinger, J.L.; Miller, R.J.; Stelting, C.E.; Bouma, A.H. 1982. Depositional history of Louisiana-Mississippi outer continental shelf. U.S. Geological Survey, Open-File Rep. 82-1077. 48 p.

ABSTRACT: A geological study was undertaken in 1981 in the Louisiana-Mississippi outer continental shelf for the Bureau of Land Management. The study included a high-resolution seismic reflection survey, surficial sediment sampling and surface current drifter sampling. Approximately 7100 sq km of the Louisiana-Mississippi shelf and upper slope were surveyed. The sea floor of the entire area is relatively smooth except for occasional areas of uplift produced by diapiric intrusion along the upper slope. Characteristics of the topography and subsurface shelf sediments are the result of depositional sequences due to delta outbuilding over transgressive sediments with intervening periods of erosion during low sea level stands. Little evidence of structural deformation such as faults, diapirs, and shallow gas is present on the shelf and only a few minor faults and scarps are found on the slope. Minisparker seismic records in combination with air gun (40 and 5 cu/n) and 3.5-kHz subbottom profile records reveal seven major stages of shelf development have occurred since the middle Pleistocene. The shelf development has been controlled by the rise and fall of sea level. These stages are defined by four major unconformities, several depositions of transgressive sediments, sequences of river channeling and progradational delta deposits. Surficial sediment sample and seismic records indicate that the last major depositional event was the progradation of the St. Bernard/Delta lobe. This delta lobe covered the northwestern and central regions. Surficial sediments in most of the study area are the product of the reworking of the San Bernard Delta lobe and previous progradations.
KEYWORDS: Louisiana; Mississippi; continental shelf; continental slope; geology; geologic history; sediment; stratigraphy;

00741
King, D.A.; Flickinger, E.L.; Hildebrand, H.H. 1977. The decline of brown pelicans on the Louisiana and Texas gulf coast. Southwest. Nat. 21:417-431.

ABSTRACT: Before 1920, native populations of brown pelicans (Pelecanus occidentalis carolinensis) were estimated at 50,000 to 85,000 birds in Louisiana and 5,000 in Texas. By 1958, brown pelicans had vanished from two wintering areas in each state, and wintering and breeding birds disappeared from additional areas between 1959 and 1961. By 1963, the disappearance of the brown pelican from Louisiana was complete, and in Texas only about 100 birds were observed annually. Mortality before 1939, particularly in Texas, was attributed mostly to hunters and fishermen. Losses in both states were attributed to hurricanes, disease, and extended periods of freezing weather. Pesticides may also have contributed significantly. Widespread endrin-caused fish mortality was documented between 1958 and 1964 in Louisiana. Pelicans undoubtedly were exposed to endrin through eating the fish. Significant levels of DDE were found in Texas fishes in the late 1960's. DDE residues in pelican eggs were high enough to be responsible for nesting failure. Shell thinning averaged 10% in Texas pelican eggs collected in 1970, 1972, and 1974, but in earlier years greater thinning was associated with the collapse and loss of eggs. Poor reproductive success during recent years was believed due to (1) failure of many adult pelicans to nest and (2) a high rate of nestling mortality in the few pairs that did nest and hatch young. The remnant population of brown pelicans on the Texas Coast will disappear unless reproductive success improves, because recruitment is presently insufficient to offset mortality.
KEYWORDS: Louisiana; Texas; biology; bird; brown pelican; endangered species; pesticide;

00742
Kirby, C.J. 1972. The annual net primary production and decomposition of the salt marsh grass Spartina alterniflora Loisel in the Barataria Bay estuary of Louisiana. Ph.D. dissertation. Louisiana State University, Baton Rouge, LA.

ABSTRACT: The annual net primary production of Spartina alterniflora was determined for both inland and streamside marsh. Production was initially calculated by summation of the monthly changes in standing crop; however, and alternate method is suggested which measures production as a dynamic process, and accounts for certain inherent discrepancies which occur in the initial method. The alternate method which is termed "true net production" was found to approximately double the production calculated by summation of the monthly change in standing crop. The two methods are compared and discussed. The rates of decomposition and loss of dead standing Spartina from the marsh were examined by utilizing nylon mesh litterbags. The streamside marsh, inland marsh, and a tidal channel were considered in the measurement of loss rates. Dead material was found to decompose most rapidly in the tidal channel in which the bags were constantly submerged, followed in order by the streamside marsh and inland marsh. The decomposition rates of four particle size fractions of dead Spartina, considered small enough to have been easily washed off the marsh surface, were studied under laboratory conditions. At a constant temperature of 30 C particles of 111 microns or less were completely decomposed in 30 days, whereas those larger than 111 microns were more slowly affected. The net primary production and decomposition of Spartina alterniflora are discussed as a dynamic process. Several parameters of this process have been examined experimentally, and several others have been suggested as speculation.
KEYWORDS: Louisiana; Barataria Bay; estuary; biology; flora; marsh; primary production;

00743
Kjerfve, B. 1975. Tide and fair-weather wind effects in a bar-built Louisiana estuary. p. 47-62. In Estuarine research, Volume 2. Geology and engineering. Academic Press, New York.

ABSTRACT: An in-depth, fair-weather, field study in July 1972 provided information about the response of the water level of Caminada Bay, an extremely shallow, bar-built Louisiana estuary. The water surface elevation was recorded at three locations in the bay along the other parameters, an equipotential surface was established, and the time- dependent variations of a slope vector along the surface gradient were computed. It was found that the instantaneous fair-weather wind stress induced a slowly oscillating set-up around a time-averaged slope magnitude of 1.5 x 10-6 rad. This constituted less than 50% of the measured time-averaged slope. The remaining time-averaged slope is accounted for by tidal nonlinearities. The instantaneous slope vector was found to rotate or oscillate in the horizontal plane with a diurnal period. Tidal input through two entrances governed this behavior, while the wind stress and atmospheric pressure gradients served only to modify the direction of the surface slope. In general, on the diurnal scale, tidal rather than wind effects dominate the dynamics of Caminada Bay. However, the mean water level responded to the wind direction on a time-scale longer than one day. Winds parallel rather than normal to the coast controlled the water elevation, indicating an Ekman effect.
KEYWORDS: Louisiana; estuary; Caminada Bay; meteorology; physical; tide; wind;

00744
Klima, E.F. 1980b. The National Fisheries Service shrimp research program in the Gulf of Mexico, 23-27 April 1979. West. Central Atl. Fish. Comm. 28:47-76.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; shrimp; ecology; fishery management;

00745
Klima, E.F. 1981. The National Marine Fisheries shrimp research program in the Gulf of Mexico. Kuwait Bull. Mar. Sci. 2:185-207.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; shrimp; ecology; fishery management;

00746
Klima, E.F. 1986. Approaches to research and management of penaeid shrimp fisheries in the Gulf of Mexico. CRC Press, Boca Raton, FL.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; shrimp; ecology; fishery management;

00747
Klima, E.F.; Baxter, K.N.; Patella, F.J. 1985. Review of the 1984 Texas closure for the shrimp fishery off Texas and Louisiana. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-156. 98 p. NTIS order No. PB85-243004/XAB.

ABSTRACT: The implementation of the Gulf of Mexico shrimp fishery management plan (FMP) in May 1981 permitted, for the first time, closure of the brown shrimp fishery from the coastline to 200 miles off the Texas coast and was in effect from 22 May to 15 July 1981. The objectives of the Texas closure management measure are to increase the yield of shrimp and to eliminate waste caused by discard of undersized shrimp in the fishery conservation zone.
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; socioeconomics; fisheries; shrimp; fishery management;

00748
Klima, E.F.; Baxter, K.N.; Patella, F.J., Jr. 1982. A review of the offshore shrimp fishery and the 1981 Texas closure. Mar. Fish. Rev. 44:16-30.

ABSTRACT: Prohibition of shrimp fishing within 200 miles of the Texas coast on 22 May 1981 resulted in large brown shrimp (Penaeus aztecus) catches off Texas when the season reopened on 15 July. Catch per unit effort off Texas in late July and August 1981 ranged from 1,349 to 2,250 pounds per fishing day, compared with only 820 to 858 pounds per fishing day for the Louisiana offshore brown shrimp fishery. The July-August 1981 relative abundance (CPUE) off Texas was greater than during similar time periods for any other year. Shrimp caught and landed off Louisiana were also predominantly smaller than those caught and landed off Texas. Recruitment from Texas bays to the offshore fishery appeared average to good, but was not sufficient to account for the outstanding abundance levels found offshore. The closure of Texas waters to fishing appears to have been a major reason for the large catches.
KEYWORDS: Texas; coastal waters; fisheries; fishery management; shrimp; fishery statistics;

00749
Klima, E.F.; Baxter, K.N.; Patella, F.J.; Matthews, G.A. 1983. Review of the 1982 Texas closure for the shrimp fishery off Texas and Louisiana. NOAA Tech. Mem. NMFS-SEFC-108. 113 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; fisheries; shrimp; fishery management;

00750
Klima, E.F.; Baxter, K.N.; Patella, F.J.; Mathews, G.A. 1984. Review of the 1983 Texas closure for the shrimp fishery off Texas and Louisiana. National Marine Fisheries Service, Galveston, TX Lab. NOAA Tech. Mem. NOAA-TM-NMFS-SEFC-136. 67 p. NTIS Order No. PB84-220375.

ABSTRACT: The implementation of the Gulf of Mexico shrimp fishery management plan (FMP) in May 1981 permitted, for the first time, closure of the brown shrimp (Penaeus aztecus) fishery from the coastline to 200 miles off the Texas coast and was in effect from 22 May to 15 July 1981. The Gulf of Mexico Fishery Management Council agreed to continue the seasonal closure of the brown shrimp fishery off the Texas coast in 1982 and again in 1983 and implemented the third closure from 27 May to 15 July. The objectives of the Texas closure management measure are to increase the yield of shrimp and to eliminate waste caused by discard of undersized shrimp in the fishery conservation zone. The purpose of this report is to provide information to determine how well the objectives of the Texas closure regulations were achieved in 1982 and 1983.
KEYWORDS: Texas; coastal waters; fisheries; fishery management; shrimp; fishery statistics;

00751

Klima, E.F.; Caillouet, C.W. 1979. Environmental studies of the south Texas outer continental shelf, 1977. Ichthyoplankton/mackerel eggs and larvae. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. AA550-IA7-21. 504 p. NTIS order No. PB296-647.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; fish; plankton; ecology; STOCS;

00752

Klima, E.F.; Jones, A. 1984. Executive summary of the 1983 Texas closure. NOAA Tech. Mem. NMFS-SEFC-135.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; fisheries; shrimp; fishery management;

00753

Klima, E.F.; Jones, A.; Poffenberger, J.R. 1982. Effects of the 1981 closure on the Texas shrimp fishery. Mar. Fish. Rev. 44:1-4.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; fisheries; shrimp; fishery management;

00754

Klima, E.F.; Nance, J.M. 1988. Executive summary of the 1987 Texas closure. NOAA Tech. Mem. NMFS-SEFC-(submitted for publication).

ABSTRACT: None
KEYWORDS: Texas; Louisiana; fisheries; shrimp; fishery management;

00755

Klima, E.F.; Nance, J.M.; Sheridan, P.F.; Baxter, K.N.; Patella, F.J.; Koi, D.B. 1987. Review of the 1986 Texas closure for the shrimp fishery off Texas and Louisiana. NOAA Tech. Mem. NMFS-SEFC-193.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; fisheries; shrimp; fishery management;

00756

Klima, E.F.; Nance, J.M.; Sheridan, P.F.; Baxter, N.; Patella, F.J.; Koi, D.B. 1987. Review of the 1986 Texas closure for the shrimp fishery off Texas and Louisiana. NOAA Tech. Mem. NMFS-SEFC-197. 153 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; fisheries; shrimp; fishery management;

00757

Klima, E.F.; Nichols, S.; Poffenberger, J. 1986. Executive summary, 1985 Texas closure. Texas closure of the Gulf of Mexico shrimp fishery. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-172. 17 p. NTIS order No. PB86-227394/XAB.

ABSTRACT: This year's series of final reports presented to the Gulf of Mexico Fishery Management Council in January 1986 on the 1985 Texas closure will be the fifth year that the Southeast Fisheries Center has evaluated the Texas closure management measure. The report summarizes the SEFC findings reported to the Gulf of Mexico Fishery Management in January 1986.
KEYWORDS: Texas; socioeconomics; fisheries; shrimp; fishery management;

00758

Klima, E.F.; Nichols, S.; Poffenberger, J.; Nance, J.M. 1987. Executive summary of the 1986 Texas closure: Texas closure of the Gulf of Mexico fishery. National Marine Fisheries Service, Charleston, SC. Rep. No. NOAA-TM-NMFS-SEFC-193. 18 p. NTIS order No. PB87-213039/XAB.

ABSTRACT: The Southeast Fisheries Center (SEFC) provides a series of detailed reports that evaluate the Texas closure management option in either December or January to the Gulf of Mexico Fishery Management Council. The report summarizes the SEFC findings reported to the Gulf of Mexico Fishery Management in January 1987.
KEYWORDS: Texas; socioeconomics; fisheries; shrimp;

00759
Klima, E.F.; Parrack, M.L. 1977. Constraints on food production from wild penaeid shrimp stocks in the Gulf of Mexico. In Proceedings of the 5th Food-Drugs from the Sea Conference, Norman, Oklahoma, 7-10 September, 1977.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp; socioeconomics; fishery management;

00760
Klima, E.F.; Roe, R.B. 1972. Report of the National Marine Fisheries, Southeast Fisheries Center, Pascagoula Laboratory, fiscal years 1970 and 1971. National Marine Fisheries, Southeast Fisheries Center, Pascagoula, MS. NOAA-TM-NMFS-SEFC-2. 28 p.

ABSTRACT: Among the activities of the center reported here are the following: investigations into the application of remote sensors for resource detection using aerial photography, pulsed lasers, spectrophotometry, and low-light-level imagery; assessment surveys along the outer continental shelf and upper continental slopes of the Gulf of Mexico and Caribbean Sea where deep-sea prawns, crabs, and silver hake were taken in quantity. RUFAS, the remote controlled underwater fisheries assessment vehicle was used successfully in benthic shelf explorations. Electrical harvesting gear were planned to increase the efficiency of available gear and to provide the technology for sampling resources presently impossible to harvest.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; biology; fisheries; benthos; remote sensing; fishing gear;

00761
Klima, E.F.; Sheridan, P.F.; Baxter, K.N.; Patella, F.J. 1986. Review of the 1985 Texas closure for the shrimp fishery off Texas and Louisiana. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-173. 89 p. NTIS order No. PB86-214376/XAB.

ABSTRACT: The implementation of the Gulf of Mexico shrimp fishery management plan (FMP) in May 1981 permitted closure of the brown shrimp fishery from the coastline to 200 miles off the Texas coast and was in effect from May 22 to July 15, 1981. The Texas Parks and Wildlife Department sets the closing and opening dates for the fishery by assessing abundance, size, and growth rate of shrimp in Texas waters during April and June (Bryan, 1985).
KEYWORDS: Texas; Louisiana; socioeconomics; fisheries; shrimp; fishery management;

00762
Kniffer, F.B. 1936. A preliminary report on the Indian mounds and middens of Plaquemines and St. Bernard parishes. Louisiana Geological Survey, Department of Conservation, Geological Bulletin 8:407-418.

ABSTRACT: Indian mounds in Plaquemines and St. Bernard Parishes were surveyed during the course of four visits into the region. Fifty sites were located, forty-four of which were measured drawn, and cored. The sites consist of shell mounds, shell middens, and beach deposits. A discussion of site distribution patterns and chronology is also presented.
KEYWORDS: Louisiana; archaeology; prehistoric;

00763
Kolb, C.R.; Saucier, R.J. 1970. Geological observations of the origin, nature and distribution of mudlumps, barrier islands and oyster reefs of coastal Louisiana (revised). U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS. Paper S-70-29.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; coastal waters; geology; geologic history; reef; sediment; oyster;

00764
Kostecki, P.T. 1984. Habitat suitability index models: spotted seatrout. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/10.75. 22 p.

ABSTRACT: A review and synthesis of existing information were used to develop a habitat model for spotted seatrout (Cynoscion nebulosus). The model is scaled to produce an index of habitat suitability between 0 (unsuitable habitat) and 1 (optimally suitable habitat) for estuarine habitat along the Gulf of Mexico and Atlantic coasts. Habitat suitability indices are designed for use with the habitat evaluation procedures previously developed by the U.S. Fish and Wildlife Service. Guidelines for application of the spotted seatrout model and techniques for measuring model variables are described.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; biology; fish; seatrout; model;

00765

Kraemer, G.P. 1982. Population levels and growth rates of scleractinian corals within the Diploria-Montastrea-Porites zones of the East and West Flower Garden Banks. M.S. thesis. Texas A&M University, College Station, TX. 139 p.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; reef; benthos;

00766

Kraemer, T.F. 1981. Uranium-234 and uranium-238 concentration in brine from geopressured aquifers of the northern Gulf of Mexico basin. Earth Planet. Sci. Lett. 56:210-216.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; geology; radionuclide;

00767

Kraemer, T.F.; Reid, D.F. 1984. The occurrence and behavior of radium in saline formation water of the U.S. Gulf Coast region. Isotope Geosci. 2:153-174.

ABSTRACT: Radium has been measured in deep saline formation waters produced from a variety of U.S. Gulf Coast subsurface environments, including oil reservoirs, gas reservoirs, and water-producing geopressured aquifers. A strong positive correlation has been found between formation-water salinity and Ra activity, resulting from the interaction of formation water with aquifer matrix. Ra isotopes enter the fluid phase after being produced by the decay of parent elements U and Th, which are located at sites on and within the solid matrix. Processes that are believed to be primarily responsible for transferring Ra from matrix to formation water are chemical leaching and alpha-particle recoil. Factors controlling the observed salinity-Ra relationship may be one or a combination of the following factors; (a) ion exchange; (b) increased solubility of matrix silica surrounding Ra atoms, coupled with a salinity-controlled rate of reequilibration of silica between solution and quartz grains; and (c) the equilibration of Ra in solution with detrital barite within the aquifer. No difference was found in the brine-Ra relation in water produced from oil or gas wells and water produced from wells penetrating only water-bearing aquifers, although the relation was more highly correlated for water-bearing aquifers than hydrocarbon-containing reservoirs.
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon; radionuclide;

00768

Krason, J.; Finley, P.; Rudloff, B. 1985. Geological evolution and analysis of confirmed or suspected gas hydrate localities. Volume 3. Basin analysis, formation and stability of gas hydrates in the western Gulf of Mexico. Geoexplorers, International, Inc., Denver, CO. Report to Department of Energy, Washington, DC. Rep. No. DOE/MC/21181-1950-V.3. 195 p. Contract No. AC21-84MC21181. NTIS order No. DE86001057/XAB.

ABSTRACT: This document is Volume 3 of a series of reports entitled ''Geological Evolution and Analysis of Confirmed or Suspected Gas Hydrate Localities.'' Volume 3 is an analysis of the ''Formation and Stability of Gas Hydrates in the Western Gulf of Mexico.'' This report presents a geological description of the western Gulf of Mexico, including regional and local structural settings, geomorphology, geological history, stratigraphy, and physical properties. It provides the necessary regional and geological background for more in-depth research of the area. Detailed discussion of bottom simulating acoustic reflectors, sediment acoustic properties, and distribution of hydrates within sediments is also included. The formation and stabilization of gas hydrates in sediments are considered in terms of phase relations, nucleation, and crystallization constraints, gas solubility, pore fluid chemistry, inorganic diagenesis, and sediment organic content. Together with a depositional analysis of the area, this report is a better understanding of the thermal evolution of the locality. It should lead to an assessment of the potential for thermogenic hydrocarbon generation.
KEYWORDS: Gulf of Mexico; Louisiana; Texas; Mexico; continental shelf; oil and gas; geology; geologic history; sediment; stratigraphy;

00769
Krauthamer, J.T.; Grant, W.E.; Griffin, W.L. 1987. A sociobioeconomic model: The Texas inshore shrimp fishery. Ecol. Modelling 35:275-307.

ABSTRACT: A sociobioeconomic model (SBM) of the Texas inshore shrimp fishery is developed as an extension of a General Bioeconomic Fisheries Simulation Model (GBFSM) for annual crop fisheries. The SBM is a heuristic model that redefines the traditional concept of a vessel class to include social and cultural variables that describe the vessel operators. Sociocultural variables that are hypothesized to affect harvesting capability of fishermen, or relative fishing power of the vessels they operate, are identified and referred to as Fishing Advantage variables. SBM predictions of landings, effort, revenue, and rent under baseline and two different inshore management policies, an open season inshore policy and a closed season inshore policy, are (1) compared with GBFSM predictions under the same conditions; (2) compared across management policies; and (3) compared between each inshore vessel class.
KEYWORDS: Texas; estuary; coastal waters; fisheries; socioeconomics; biology; shrimp; model;

00770
Krawier, W. 1966. Recent sediments of the Louisiana inner continental shelf. Ph.D. Dissertation, Rice University, Houston, TX. 139 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; continental shelf; geology; sediment;

00771
Kritzler, H. 1979. Oil production and ecology of the littoral Polychaeta of Timbalier Bay, p. 473-490. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; biology; oil and gas; benthos; ecology; environmental impact; Offshore Ecology Investigation;

00772
Krone, M.A.; Biggs, D.A. 1980. Sublethal metabolic responses of the hermatypic coral Madracis decactis exposed to drilling mud enriched with ferrochrome lignosulfonate, p. 1079-1100. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: oil and gas; biology; drilling fluid; environmental impact; benthos; physiology;

00773
Kroon, M.W. 1986. Offshore petroleum industry activity and associated costs. Brookhaven National Lab., Upton, NY. Final report to the Department of Energy, Washington, DC. Rep. No. BNL-38751. 34 p. Contract No. AC02-76CH00016. NTIS order No. DE87002398/XAB.

ABSTRACT: This paper summarizes historical data on the level of activity in the processes of offshore petroleum production, from leasing to production. It also summarizes estimates of the cost of pursuing these activities, as of 1985. Costs vary with conditions, equipment, field size and water depth so that it is hard to define a single representative cost that is meaningful. Instead a range of drilling costs per well, both exploratory and developmental, are presented with a lower and upper bound. Total costs are presented in graphic form. Total exploratory costs include lease acquisition, geological and geophysical exploration and the approximately 9 to 17 dry and delineation wells, as well as successful exploratory wells. Development costs include development wells, the platform(s) facilities, equipment, operations and transportation for oil. Gas is usually sold to a pipeline company at the wellhead. 17 refs., 1 fig., 12 tabs.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; Pacific Ocean; continental shelf; oil and gas; socioeconomics;

00774
Kupper, D.H. 1970. The geology and technology of Gulf Coast Shelf. Louisiana State University, School of Geoscience, Miscellaneous Pub. 70(2):1-118.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; geology; oil and gas; sediment; diapir;

00775
Kutkuhn, J.H. 1936. Expanded research on Gulf of Mexico shrimp resources. Proc. Gulf Carib. Fish. Inst. 15:65-78

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp; fishery statistics;

00776
Kutkuhn, J.H. 1962. Gulf of Mexico commercial shrimp populations - trends and characteristics 1956-59. Fish. Bull. 212(62):343-402

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp; fishery statistics;

00777
Kutkuhn, J.H. 1962. Recent trends in white shrimp stocks of the northern Gulf. Proc. Gulf Carib. Fish. Inst. 148:3-16

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; shrimp; fishery statistics;

00778
Kutkuhn, J.H. 1966. The role of estuaries in the development and perpetuation of commercial shrimp resources, p. 16-36. In R.F. Smith, A.H. Swartz, and W.H. Massmann [ed.], A symposium on estuarine fisheries. Am. Fish. Soc. Spec. Publ. No. 3.

ABSTRACT: This report summarizes knowledge concerning functional relationships between the estuarine environment and commercial shrimp resources. Discussion is largely restricted to North America species, especially the rapidly developing Gulf coast.
KEYWORDS: Gulf of Mexico; estuary; biology; fisheries; ecology; shrimp;

00779
Kwon, H.J. 1969. Barrier islands of the northern Gulf of Mexico Coast: sediment source and development. Louisiana State University Press, Coastal Studies Series No. 25. 51 p.

ABSTRACT: The evolution of barrier islands along the northern Gulf of Mexico coast is directly related to source of sediments and littoral processes. Johnson formulated his hypothesis on barrier island formation in 1919, and his theory prevailed for several decades. Johnson's theory resulted from consideration of only two dimensions normal to the coastline; a third, longshore drift, was not regarded as critical for the initiation of barrier island development. In this study, which is confined to the northern Gulf coast, major sources of sediment supply and transportation patterns of barrier-forming sand were examined, along with results of recent oceanographic investigations in the Gulf of Mexico. This study is based on a comprehensive survey of the literature, maps, and marine charts, which were correlated with field observations. To obtain a perspective, only gross forms and processes of barrier development were considered.
KEYWORDS: Gulf of Mexico; barrier island; geology; physical; geologic history; sediment transport;

00780
Kwon, H.J. 1969. Development of recent barrier islands along the coast of the United States. Ph.D. Dissertation, Louisiana State University, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; United States; barrier island; beach; geology; sediment; geologic history;

00781
Lamphear, F.C.; Restrepo, C.E. 1982. IXTOC I oil spill economic impact study: Input-output model for economic analysis. Report by Restrepo & Associates to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. AA851-CT0-65. 110 p. NTIS order No. PB82-217878.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; barrier island; beach; marsh; oil and gas; socioeconomics; fisheries; environmental impact; oil spill; Ixtoc;

00782

Landry, A.M., Jr.; Armstrong, H.W. 1980. Biological/chemical survey of Texoma and Capline sector salt dome brine disposal sites off Louisiana, 1978-1979. Volume IV. Determine seasonal abundance distribution and community composition of demersal finfishes and macrocrustaceans. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-28. 219 p. NTIS order No. PB81-174955.

ABSTRACT: Demersal finfishes and macro-crustaceans were trawled from proposed West Hackberry and Weeks Island brine disposal sites off Louisiana during Summer and Fall 1978 and Winter and Spring 1979. Results indicated that 74 taxa of finfish comprising 41,369 individuals and 25 species of macro-crustaceans representing 31,120 specimens were taken. Seasonally, West Hackberry finfish catches were greatest in the Summer and Spring and lowest in Fall and Winter. Macro-crustacean yields at West Hackberry were largest and smallest during Winter and Summer, respectively.
KEYWORDS: Louisiana; coastal waters; biology; fisheries; fish; water quality; environmental impact; brine disposal; Strategic Petroleum Reserve;

00783

Landry, A.M., Jr.; Klima, E.F. 1986. Proceedings of the shrimp yield prediction workshop held at Galveston, Texas on November 16-17, 1983. Texas A&M University, College Station, TX. Sea Grant Rep. No. TAMU-SG-86-110. 133 p. NTIS order No. PB86-214806/XAB.

ABSTRACT: Contents include prediction of the closure dates for the 1983 Texas Gulf shrimping season; Shrimp management in Alabama; Forecasting offshore brown shrimp catch from early life history stages; Measurements of estuarine shrimp densities applied to catch predictions; Incorporating climatic and hydrographic information into shrimp yield forecasts using seasonal climatic component models; A review of the present status of Kuwait's shrimp fisheries with special reference to the need for effort limitation.
KEYWORDS: Gulf of Mexico; Texas; fisheries; shrimp; biology; fishery statistics;

00784

Larre, G.H.; Reed, J.C.; Leyendecker, C.L.; Khan, A.S.; Kinler, C.J.; Harrison, P.F.; Pickens, G.P. 1987. Correlation of Cenozoic sediments of Gulf of Mexico outer continental shelf. 1. Galveston area offshore Texas through Vermilion area offshore Louisiana. Am. Assoc. Pet. Geol. Bull. 71(5):581. (Abstract only).

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; geology; sediment;

00785

Larson, D.K.; Davis, D.; Detro, R.; Dumond, P.; Liebow, E.B.; Motschall, R.; Sorenson, D.; Guidroz, W. 1980. Mississippi Deltaic Plain regional ecological characterization. A socioeconomic study. Volume 1. Synthesis papers. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-79/05. 368 p.

ABSTRACT: The Mississippi Deltaic Plain Region extends from Vermilion Bay, Louisiana to the Mississippi-Alabama state line. This study was begun in July 1978 and a full ecological characterization is scheduled for completion in 1981. The overall study purpose is to collect, organize and analyze available information from various disciplines (geology, biology, hydrology, socioeconomics, etc.) that will describe each part of the system in terms of its relation to other parts and to the Mississippi Deltaic Plain regional ecosystem as a whole. Socioeconomic characteristics will receive special attention because of extensive oil and gas, social demographic, land use, transportation, commercial fishing and trapping, recreation and tourism, and agricultural production activities.
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; estuary; barrier island; marsh; coastal waters; oil and gas; socioeconomics; recreation; tourism; fisheries; transportation;

00786
Larson, D.K.; Davis, D.; Detro, R.; Dumond, P.; Liebow, E.B.; Motschall, R.; Sorenson, D.; Guidroz, W. 1980. Mississippi Deltaic Plain regional ecological characterization: a socioeconomic study. Volume 2. Map narratives. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-79/06. 112 p.

ABSTRACT: Mapping of socioeconomic information in the Mississippi Deltaic Plain Region was accomplished by using existing sources and conducting an extensive ground-truthing effort. During the course of completing the maps for this study, it became apparent that many reputable sources disagree about the existence and location of many mappable elements. This disagreement occurred on virtually all variables from the small boat launch sites on the Conservation-Preservation-Recreation overlays, to the large oil fields on the Oil and Gas overlays. The study team was required to make the best possible determination regarding the most reliable source and the basis for making these decisions is presented in the map notes on each overlay. Working definitions were developed from various sources to provide the framework for map construction and interpretation. The map narratives volume is a companion document to the Map Atlas. Details regarding specific mapped elements are presented here for each set of overlays. In some cases, the details are presented in a textual manner, e.g., the transportation narrative, and in others the details are presented primarily in tabular form, e.g., the oil and gas narratives. Other topics are pipelines, conservation-preservation-recreation, and pollution sources. Reference used to construct the maps are located at the end of this volume. Users may obtain access the original sources in many cases by using the detailed Data Appendix constructed as part of this study. The maps were not published but are available for reference.
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; socioeconomics; recreation; transportation; remote sensing; pipeline;

00787
LaSalle, M.W.; de la Cruz, A.A. 1985. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates, Gulf of Mexico. Common Rangia. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.31). 18 p.

ABSTRACT: None
KEYWORDS: estuary; coastal waters; biology; benthos; ecology; physiology;

00788
Laseter, J.L.; Ledet, E.J. 1979. Hydrocarbons and free fatty acids associated with the air/water interface, sediments, and beaches of the Timbalier Bay and offshore Louisiana area, p. 265-286. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; beach; coastal waters; chemistry; oil and gas; hydrocarbon; sediment; environmental impact; Offshore Ecology Investigation;

00789
Lassus, R.E. 1974. Subsurface geology of Main Pass, Blocks II through 51, offshore Louisiana. Master's Thesis. University of New Orleans, New Orleans, LA. 45 p.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; geology; stratigraphy; oil and gas;

00790
Lassuy, D.R. 1983. Species profiles: life histories and environmental requirements (Gulf of Mexico) - brown shrimp. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/11.1. 15 p.

ABSTRACT: This series of profiles about coastal aquatic species of commercial, sport, and/or ecological significance is being jointly developed and funded by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service. It is designed to provide coastal managers, engineers, and field biologists with an introduction to the subject species and a synopsis of the information necessary to relate expected changes (associated with coastal development) in the physicochemical characteristics of estuaries to changes in these selected biological populations. Each profile includes brief sections on taxonomy and identification followed by a narrative of life history, environmental requirements, ecological role, and (where applicable) the fishery of the subject species. A three-ring binder is used for this series to facilitate additions as new profiles are prepared.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; fisheries; fish; ecology; shrimp;

00791
Lassuy, D.R. 1983. Species profiles: life histories and environmental requirements (Gulf of Mexico) - Atlantic croaker. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/11.3.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; fisheries; fish; ecology; croaker;

00792
Lassuy, D.R. 1983. Species profiles: life histories and environmental requirements (Gulf of Mexico) - gulf menhaden. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/11.2. 13 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; fisheries; fish; ecology; menhaden;

00793
Lassuy, D.R. 1983. Species profiles: life histories and environmental requirements (Gulf of Mexico) - spotted sea trout. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/11.4. 14 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; fisheries; fish; ecology; seatrout;

00794
Latapie, W.R. 1966. Evaluation of various tagging methods on several freshwater fishes and estuarine fishes of Louisiana. Master's thesis. Louisiana State University, Baton Rouge, LA. 45 p.

ABSTRACT: Various tagging methods were compared using the largemouth bass, bluegill, and Atlantic croaker. The primary objectives of this study were to compare the retention rate of 5 types of tags, to determine fish tissue reactions to tags, and to determine if the tags had any effect on fish growth. The tagging was done from March, 1965, through May, 1966, in freshwater and brackish ponds in Baton Rouge and Grand Terre, Louisiana.
KEYWORDS: Louisiana; estuary; biology; fish;

00795
Lauer, R.D. 1979. Sulfur deposition in the East Flower Gardens, Gulf of Mexico. M.S. thesis. Texas A&M University, College Station, TX. 33 p.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; chemistry; reef; sulfur;

00796
Lawrence, A.W. 1971. Application of process kinetics to design of anaerobic processes. Adv. Chem. Ser. 105:163-189.

ABSTRACT: None
KEYWORDS: Louisiana; chemistry; marsh; methane; sediment;

00797
Leatherman, S.P. 1982. Barrier island handbook. University of Maryland, College Park, MD.

ABSTRACT: This handbook describes the various environments found on barrier islands, barrier island evolution, recreational impacts and barrier island development potential. Barrier environments include inshore and offshore environments, beaches, beach ridges, dunes, freshwater wetlands, barrier flats, salt marshes, lagoons and tidal flats. Barrier evolution is influenced be sea level rise, storms, littoral drift, overwash processes and dune migration. Recreational impacts include pedestrian trampling and off-road vehicle traffic. Developmental pressures are increasing on barrier islands and their inherent instability should be considered in construction and development.
KEYWORDS: United States; geology; barrier island; beach; marsh; coastal waters; estuary; geology; biology;

00798

Leatherwood, S.; Reeves, R.R. 1983. Abundance of bottlenose dolphins in Corpus Christi Bay and coastal southern Texas. Contrib. Mar. Sci. 26:179-199.

ABSTRACT: Aerial survey sightings were used to estimate the number of bottlenose dolphins (Tursiops truncatus) present in coastal waters between Aransas Pass and Brownsville, Texas, from 21 to 30 September 1979. Using the line-transect methods, the populations in Corpus Christi Bay and in the coastal Gulf of Mexico were estimated, with 95% confidence limits, as 103.5 (67.3, 139.5) and 300.5 (226.6, 374.4), respectively. Average counts of dolphins actually observed in the major passes were 29.3 (Aransas), 17.7 (Mansfield), and 32.4 (Brazos Santiago).
KEYWORDS: Texas; estuary; coastal waters; Corpus Christi Bay; biology; marine mammal;

00799

LeBlanc, R.J. 1973. Significant studies of modern and ancient deltaic sediments. Trans. Gulf Coast Assoc. Geol. Soc. 23:18-21.

ABSTRACT: A critical analysis of the geologic literature on ancient deltaic sediments reveals that there has been a very noticeable increase in the number of significant papers since 1959. During the 80-year period prior to 1959 only eight papers on ancient deltas appeared in print. These early contributions were by Gilbert (1885, 1890), Barrell (1912), Barton (1930), Twenhofel (1932), Busch (1953), Pepper et al. (1954) and Nanz (1954). During a five year period beginning in 1959 twelve significant publications on ancient deltaic deposits of the United States, England, Scotland, and Brazil appeared in print. This was followed by the publication of an additional 14 papers during the past eight years. Thus during the 13 year period since 1959 the publication of significant delta papers has been at the rate of about two papers per year.
KEYWORDS: Gulf of Mexico; Mississippi River Delta; geology; sediment;

00800

Lee, G.F.; Jones, R.A. 1983. Water quality aspects of dredged material disposal in the Gulf of Mexico near Galveston, Texas, p. 234-301. In J.B. Herbich [ed.], Proceedings of the 14th annual dredging seminar, November 12-13 1981. Texas A&M Univ. Sea Grant program, report No. TAMU-SG-83-103.

ABSTRACT: A study was conducted in the mid 1970s on the water quality impact of the disposal of sediments dredged from the Galveston Bay Entrance Channel, and Texas City Channel (Texas), in the open waters of the Gulf of Mexico near Galveston, Texas. The study focused on the heavy metals, chlorinated hydrocarbon pesticides and PCBs, nitrogen and phosphorus compounds, and other chemical constituents of the sediments, and their release from the sediments during laboratory elutriate tests and during dredged sediment disposal. It was concluded from these studies that the open water disposal of Galveston Bay Entrance Channel and Texas City Channel sediments would not cause a significant adverse impact on water quality upon open water dredged sediment disposal in the Gulf of Mexico.
KEYWORDS: Texas; Galveston Bay; coastal waters; estuary; chemistry; water quality; trace metal; hydrocarbon; pesticide; PCB; nutrient; dredging; environmental impact; ocean dumping;

00801

Lee, W.Y.; Morris, A.; Boatwright, D. 1980. Mexican oil spill: a toxicity study of oil accommodated in sea water on marine invertebrates. Mar. Pollut. Bull. 11 (8):231-234.

ABSTRACT: The Mexican Ixtoc oil well blew out on June 3, 1979. Since then more than 3.5 .times. 105 tons of crude oil have entered the Gulf of Mexico. This is probably the largest oil spill in the world's history. Two months later (Aug. 7, 1979), The spilled oil began moving to the Texas coastal waters, and the well is not yet capped. Although laboratory tests showed that the aged oil was not acutely toxic to some marine invertebrates [particularly Acartia tonsa, Paracalanus crassirostris, Oithona colcarva, Corycaeus amazonicus and Eucalanus monachus], further work needs to be conducted to determine its possible chronic effects on sensitive ecosystems such as the Laguna Madre.
KEYWORDS: Texas; estuary; coastal waters; biology; oil and gas; oil spill; environmental impact; Ixtoc;

00802

Lehner, P. 1969. Salt tectonics and Pleistocene stratigraphy on continental slope of the northern Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 53:2431-2479.

ABSTRACT: During a sparker and core-drill program conducted by Shell, salt was cored on 10 prominent structures on the continental slope. Broad salt swells and pillows are typical structures in this region. The Sigsbee scarp appears to be the surface expression of a salt front. A zone of salt at depth away from the advancing clastic wedge. Upper Cretaceous through Holocene deep-water sedimentary beds were cored on the continental slope. East of Brownsville the salt is overlain by redbeds of unknown age. Core holes at the shelf edge penetrated deltaic and shoreline deposits of the Pleistocene low-sea-level stages. Submarine slides and turbidity currents carried sediments down the slope and filled deep synclinal basins between the salt uplifts.
KEYWORDS: Louisiana; Texas; geology; diapir; stratigraphy;

00803

Leipper, D.F. 1968. Hydrographic station data, Gulf of Mexico, February-March Nansen casts, 1965-1968. Dept. of Oceanography, Texas A&M Univ. Ref. No. 68-15T.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; continental shelf; deep sea; temperature; salinity;

00804

Leipper, D.F. 1968. Hydrographic station data, Gulf of Mexico, August 17-September 5, 1968. Nansen casts and STD. Dept. of Oceanography, Texas A&M Univ. Ref. No. 68-17T.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; continental shelf; deep sea; temperature; salinity;

00805

Leslie, J.C.; Zwank, P.J. 1985. Habitat Suitability Index Models: Lesser Snow Goose (Wintering). U.S. Fish Wildl. Serv. Biol. Rep. 82(10.97). 27 p.

ABSTRACT: A review and synthesis of existing information were used to develop a habitat model for lesser snow geese (Chen caerulescens). The model is scaled to produce an index of habitat suitability between 0 (unsuitable) and 1.0(optimally suitable) for lesser snow goose wintering habitat in the Gulf of Mexico coastal areas of Texas and Louisiana.
KEYWORDS: Texas; Louisiana; marsh; biology; ecology; bird; model;

00806

Leventhal, F.D. 1981. The Bay of Campeche oil spill: Obtaining jurisdiction over Petroleos Mexicanos under the Foreign Sovereign Immunities Act of 1976. Ecol. Law Q. 9(2):341-377.

ABSTRACT: None
KEYWORDS: Mexico; oil and gas; oil spill; Ixtoc;

00807

Levert, C.F.; Ferguson, H.C., Jr. 1969. Geology of the Flower Garden Banks, northwest Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 19:89-100.

ABSTRACT: The Flower Garden Banks, located 130 miles south-southeast of Galveston, Texas, are the most prominent of a series of topographic highs in the northwest Gulf of Mexico and have been noted and studied for years. These physiographic expressions are related to salt uplift and biohermal development. The results of this study demonstrate that biohermal development during the present interglacial period occurred in a deep water environment in the northwest Gulf of Mexico. This raises the possibility of the existence of buried fossil reefs which formed within structural and depositional environments similar to those existing today on the outer continental shelf. If these fossil reefs do exist they offer a previously unrecognized exploratory objective on known structural features.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; geology; reef;

00808

Lewbel, G.S.; Howard, R.L.; Gallaway, B.J. 1987. Zonation of dominant fouling organisms on northern Gulf of Mexico petroleum platforms. Mar. Environ. Res. 21 (3):199-224.

ABSTRACT: In a study of the fouling communities of petroleum platforms near the Louisiana coast, scraped samples were collected by divers at depths from 1 to 30 m. The main habitat-forming species were barnacles and pelecypods, which accounted for over 99% of the drained weight of the samples. Other abundant forms included ophiuroids, actiniarian and zoanthid anemones, caprellid and gammaridian amphipods, hydroids, bryozoans, tunicates, and clionid sponges. Although the fauna of both nearshore and offshore platforms included many cosmopolitan taxa, a number of tropical species more commonly found on coral reefs were collected on offshore platforms. Algal abundance was higher near the surface, especially at the nearshore platforms, and was higher off shore than near shore at all depths. There was no evidence that a produced water discharge on one of the platforms had any significant effect on community composition a few meters away from the point of discharge, although it was not possible to determine the chemical content of the discharge.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; oil and gas; benthos; petroleum platform;

00809

Lewis, J.K. 1982. On the nearshore hydrography of the upper Texas Coast. Ph.D. dissertation. Texas A&M University, College Station, TX.

ABSTRACT: Analyses of nearshore current, wind, and hydrographic data collected along the upper Texas coast are presented. Results show that hydrographic variations due to advection have a pronounced effect on the overall hydrographic of the area. A surface core of fresher water, most likely from the Mississippi delta region, is advected along the Texas coast due to longshore wind stress and can form a strong frontal system 10-30 km offshore for the majority of the year, including winter. A frictionless analytical model driven by time-varying wind stresses has been developed.
KEYWORDS: Texas; physical; continental shelf; current; wind; model;

00810

Lewis, J.K.; Reid, R.O. 1985. Local wind forcing of a coastal sea at subinertial frequencies. J. Geophys. Res. 90(C1):935-944

ABSTRACT: An analytical, normal-mode, two-layer model that gives the response of a coastal region to local wind forcing is presented. The model is linear and is developed in frequency space, the latter permitting a comparison between the model responses directly with the results of current meter/wind data spectral and coherence analyses. The theoretical development indicated the requirement of a frictional parameter in both the barotropic and baroclinic modes to balance the wind stress at lower frequencies. Experimentation with the model and current and wind data collected 20 km off the Texas coast showed the requirement for both frictional effects throughout the subinertial frequency range. With appropriate frictional parameters, the model predicts well the response of the Texas coastal region to local wind forcing, with data from the fall and winter of 1978-1979. However, during the summer of 1978, the model consistently underpredicted the energy levels of the currents. Since the summer is a period of low wind stress energy for the Texas shelf, this underprediction may indicate the presence of nonlocally generated shelf-wave phenomena.
KEYWORDS: Texas; coastal waters; continental shelf; physical; current; wind; model;

00811

Lewis, P.L.; Fish, A.G. 1979. The ecology of the littoral marine polychaetes of Timbalier Bay, p. 511-528. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; biology; oil and gas; benthos; ecology; environmental impact; Offshore Ecology Investigation;

00812

LGL Ecological Research Associates, Inc. and Texas A&M University. 1985. Annual report for northern Gulf of Mexico continental slope study. Report to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. Contract No. 14-12-0001-30046. 2 vol. NTIS order Nos. PB86-246345 and PB86-246352.

ABSTRACT: The Minerals Management Service funded a four-year investigation of the continental slope environments of the northern Gulf of Mexico. This is the first annual report. The study objectives were (1) to determine the abundance, structure, and distribution of animal communities in the deep sea in the Gulf of Mexico; (2) to determine the hydrographic structure of the water column and bottom conditions; (3) to determine and compare sedimentary characteristics; (4) to relate differences in biological communities to hydrographic, sedimentary, and geographic variables; (5) to assess seasonal changes in biological communities in terms of abundance, structure, animal size, and reproductive state; and (6) to measure present levels of hydrocarbon contamination in sediments and selected animals prior to, and in anticipation of, petroleum resource development beyond the shelf-slope break. Three transects were established perpendicular to the slope, each with five stations. One transect was located in each of the three Gulf of Mexico Planning Areas (Eastern, Central, and Western). Average sample depths along each transect were chosen to correspond to previously proposed faunal zones.
KEYWORDS: Texas; Louisiana; Florida; continental slope; biology; chemistry; geology; sediment; organic carbon; hydrocarbon; stable isotope; benthos; fish; ecology; chemosynthesis;

00813

LGL Ecological Research Associates, Inc. and Texas A&M University. 1985. Gulf of Mexico continental slope study. Annual report, Year 2. Report to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. MMS report Nos. 86-0089, 86-0090, and 86-0091. Contract No. 14-12-0001-30212. 3 vol.

ABSTRACT: The Minerals Management Service funded a four-year investigation of the continental slope environments of the northern Gulf of Mexico. This is the second annual report. The study objectives were (1) to determine the abundance, structure, and distribution of animal communities in the deep sea in the Gulf of Mexico; (2) to determine the hydrographic structure of the water column and bottom conditions; (3) to determine and compare sedimentary characteristics; (4) to relate differences in biological communities to hydrographic, sedimentary, and geographic variables; (5) to assess seasonal changes in biological communities in terms of abundance, structure, animal size, and reproductive state; and (6) to measure present levels of hydrocarbon contamination in sediments and selected animals prior to, and in anticipation of, petroleum resource development beyond the shelf-slope break. Three transects were established perpendicular to the slope, each with five stations. One transect was located in each of the three Gulf of Mexico Planning Areas (Eastern, Central, and Western). Average sample depths along each transect were chosen to correspond to previously proposed faunal zones.
KEYWORDS: Texas; Louisiana; Florida; continental slope; biology; chemistry; geology; sediment; organic carbon; hydrocarbon; stable isotope; benthos; fish; ecology; chemosynthesis;

00814

Liebow, E.B; Butler, K.S.; Plaut, T.R.; Arnold, V.L.; Ford, G.H.; Kahn, T.D.; Klein, M.A.; Allday-Bondy, C.; Parker, V. 1980. Texas barrier islands region ecological characterization: a socioeconomic study. Volume 1: Synthesis papers. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/19. 259 p.

ABSTRACT: The purpose of this study is to compile and synthesize information from existing sources concerning the natural, physical, and social components of the ecosystems within the 24-county study area along the coast of Texas. The topics of the socioeconomics papers are oil and gas production, recreation/tourism industry, commercial fishing, transportation, industrial and residential development, and agricultural production.
KEYWORDS: Texas; barrier island; socioeconomics; oil and gas; biology; ecology; fisheries; environmental impact; recreation;

00815

Liebow, E.B; Butler, K.S.; Plaut, T.R.; Arnold, V.L.; Ford, G.H.; Kahn, T.D.; Klein, M.A.; Allday-Bondy, C.; Parker, V. 1980. Texas barrier islands region ecological characterization: a socioeconomic study. Volume 2: Data appendix. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/20. 548 p.

ABSTRACT: The purpose of this study is to compile and synthesize information from existing sources concerning the natural, physical, and social components of the ecosystems within the 24-county study area along the coast of Texas. This volume consists of data compilations in the form of tables and charts that support the synthesis papers in volume 1.
KEYWORDS: Texas; barrier island; socioeconomics; oil and gas; biology; ecology; fisheries; environmental impact; recreation;

00816

Lind, W.B. 1983. Chemical and physical characteristics of water in estuaries of Texas, October 1975-September 1976. Texas Dept. of Water Resources, Austin. Rep. No. TDWR/R-275. 204 p. NTIS order No. PB84-159334.

ABSTRACT: This is the eighth in a series of annual basic-data reports that have been prepared by the U.S. Geological Survey since 1970 presenting results of systematic measurements in principal estuaries along the Texas coast. Approximately 170 designated data-collection sites were visited during the 1976 water year. The report contains field measurements of dissolved oxygen, specific conductance, temperature, pH, transparency, and turbidity at several points along a vertical at each site. Also listed are the results of laboratory analyses of samples from selected sites, including the principal inorganic ions, biochemical oxygen demand, phenols, organic carbon, insecticides and herbicides, ammonium, nitrite, nitrate, phosphate, and other selected ions such as metals. Water and sediment sampling is represented. Objectives of the continuing investigation are to define: the occurrence, source, and distribution of nutrients.
KEYWORDS: Texas; estuary; chemistry; physical; current; dissolved oxygen; temperature; biochemical oxygen demand; nutrient; trace metal; pesticide;

00817
Lindall, W.H.; Saloman, C.H. 1977. Alteration and destruction of estuaries affecting fishery resources of the Gulf of Mexico. Mar. Fish. Rev.

ABSTRACT: Both the commercial and recreational fishing industries of the Gulf of Mexico are overwhelmingly dependent on estuaries. About 90 percent of the commercial catch and 70 percent of the recreational catch are made up of species that are estuarine dependent. Human alteration of estuaries is threatening these fishery resources. Data from recently published inventories of major natural and man-made estuarine features of the five gulf coastal states indicated that the total gulf estuarine area is 13,965,910 acres, including 7,891,611 acres of open-water area and 6,075,299 acres of emergent tidal vegetation. Submerged grass beds total 796,796 acres and live oyster beds amount to 158,611 acres. Major man-made alterations include 4,446 miles of federally maintained navigation channels, 138,458 acres of fill, and 795,609 acres closed to shell fishing because of pollution.
KEYWORDS: Gulf of Mexico; estuary; biology; dredging; environmental impact; fisheries;

00818
Lindau, C.W.; Hossner, L.R. 1982. Sediment fractionation of copper, nickel, zinc, chromium, manganese, and iron in one experimental and three natural marshes. J. Environ. Qual. 11(3):540-545.

ABSTRACT: None
KEYWORDS: Texas; marsh; chemistry; geology; sediment; trace metal;

00819
Lindner, M.J. 1936. Suggestions for the Louisiana shrimp fishery, p. 53-69. In 12th Biennial report, Louisiana Department of Conservation, 1934-1935.

ABSTRACT: None
KEYWORDS: Louisiana; fisheries; shrimp; fishery management;

00820
Lindner, M.J. 1938. The cooperative shrimp investigations, p. 446-455. In 13th Biennial report, Louisiana Department of Conservation, 1936-1937.

ABSTRACT: None
KEYWORDS: Louisiana; fisheries; shrimp; fishery management;

00821
Lindner, M.J. 1940. Biennial report, shrimp investigations, p. 389-399. In 14th Biennial report, Louisiana Department of Conservation, 1938-1939.

ABSTRACT: None
KEYWORDS: Louisiana; fisheries; shrimp; fishery management;

00822
Lindner, M.J. 1941. The Texas fisheries, p. 132-149. In J.L. Baughman [ed.], An annotated bibliography for the student of Texas fishes and fisheries, with material on the Gulf of Mexico and the Caribbean Sea. Louisiana Conservation Review.

ABSTRACT: None
KEYWORDS: Texas; fisheries; shrimp; fishery management;

00823
Lindquist, P. 1978. Geology of south Texas shelf banks. M.S. thesis. Texas A&M University, College Station, TX. 138 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; reef; geology; stratigraphy;

00824

Lindsay, J.F.; Prior, D.B.; Coleman, J.M. 1984. Distributary-mouth bar development and role of submarine landslides in delta growth, South Pass, Mississippi Delta. Am. Assoc. Pet. Geol. Bull. 68 (11):1732-1743.

ABSTRACT: Submarine landslides play a major role in the development of distributary-mouth bars and are of major importance in transporting sediment from the bar front to deeper water along the Mississippi Delta front. Historic maps of the South Pass of the Mississippi Delta show that the bar advanced seaward more than 1 mi (1.6 km) between 1867 and 1953. Details of the growth of the bar have been elucidated using an elaborate computer modeling program to analyze these historic maps. The analysis has shown that the geometry of the bar was controlled by the dynamics of the freshwater plume of river water as it mixed with saline Gulf of Mexico water. Approximately half the sediment deposited on the bar was moved into deeper water by submarine landslides.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; South Pass; geology; sediment; submarine landslide; geologic history;

00825

Lindsey, J.; Paterson, K.; Bertrand, A. 1976. Citizen perception of coastal area planning and development. Louisiana Sea Grant Pub. No. LSU-T-76-001. 30 p.

ABSTRACT: The attitudes and knowledge of Louisianians toward the coastal region are studied. Two types of field surveys determined citizens' perceptions of the coastal zone, indicted knowledge of and reactions to management and development programs, and determined citizens' feelings about agency responsibilities for planning in the region.
KEYWORDS: Louisiana; estuary; marsh;

00826

Liner, E.A. 1954. The herpetofauna of Lafayette, Terrebonne, and Vermilion parishes, Louisiana. Louisiana Acad. Sci. 17:65-85.

ABSTRACT: None
KEYWORDS: Louisiana; biology; ecology; wildlife; turtle;

00827

Liss, R.G.; Knox, F.; Wayne, D.; Gilbert, T.R.; Edgerton, H.E. 1980. Availability of trace elements in drilling fluids to the marine environment, p. 691-722. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: oil and gas; chemistry; drilling fluid; trace metal;

00828

Liu, T. 1982. Long-term distribution of hurricane characteristics. In Proceedings, 1982 Offshore Technology Conference, Houston, TX. Paper No. OTC 4325.

ABSTRACT: Based on analysis of hurricane data, this paper shows that frequencies of hurricane occurrence along the U.S. East and Gulf coasts agree with the Poisson distribution, and the hurricane central pressure, wind velocities, wave heights and storm surge agree with the Weibull distribution, a Poisson-Weibull compound extreme value distribution is presented to compute the long term distribution of hurricane central pressure wind velocities, wave heights and storm surge.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; meteorology; hurricane; wave; wind;

00829

Livingston, G.P. 1974. Examination of the recurrent species groups and abundances of the calanoid Copepoda in the epipelagic waters of the Gulf of Mexico. Master's Thesis. Texas A&M University. College Station, TX. 100 p.

ABSTRACT: Fifty-six stations in the epipelagic waters of the Gulf of Mexico were examined for adult calanoid copepods. Ninety-six species representing 45 genera in 19 families were collected in February and March, 1967 during cruise 12 by the R/V Geronomo. Data include frequency of occurrence of each species at each station.
KEYWORDS: Gulf of Mexico; biology; plankton;

00830

Lock, S.A. 1986. Salt tectonics - a structural and stratigraphic analysis in offshore Louisiana Gulf of Mexico region. M.S. thesis. University of Houston. 190 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; continental shelf; geology; stratigraphy; diapir;

00831

Loesch, H.; Bishop, J.; Crowe, A.; Kuckyr, R.; Wagner, P. 1976. Technique for estimating trawl efficiency in catching brown shrimp (Penaeus aztecus), Atlantic croaker (Micropogon undulatus) and spot (Leiostomus xanthurus). Gulf Res. Rep. 5(2):29-34.

ABSTRACT: Mark-recapture experiments conducted in a small 17.5 ha lake in Barataria Bay, Louisiana, were used to estimate the efficiency of a 4.9 m (16 foot) otter trawl in capturing brown shrimp, Atlantic croaker, and spot in water 1.5 m deep. The trawl was observed to sweep an area 2.5 m in width. Trawl efficiency was determined to be approximately one-third to one-half for brown shrimp, one-fourth for Atlantic croaker, and only 6 percent for spot.
KEYWORDS: Louisiana; Barataria Bay; biology; fisheries; fishing gear; shrimp; croaker; spot;

00832

Longley, W.L.; Jackson, R.; Snyder, B. 1981. Managing oil and gas activities in coastal environments: refuge manual. U.S. Fish and Wildlife Service, Office of Biological Services, Washington DC. FWS/OBS-81/22. 466 p.

ABSTRACT: This report documents the management of oil and gas development on national wildlife refuges on the Louisiana and Texas coasts. It explains the nature of ownership, leasing rights, and legal considerations related to oil and gas extraction on refuges. The report describes five federal refuges selected for analysis and the different marsh and estuarine ecosystems found on the refuges and in the coastal zone. It explains oil and gas extraction and transport methods used in coastal systems, and examines how each habitat is affected by these activities. Existing regulations and guidelines are analyzed, and new ones proposed. The report is a planning tool for refuge personnel, to aid them in assessing impacts, issuing permits, and generally managing oil and gas activities.
KEYWORDS: Louisiana; Texas; estuary; barrier island; marsh; coastal waters; oil and gas; biology; ecology; environmental impact;

00833

Lopez, A.M.; Pristas, P.J. 1982. Recreational billfish survey newsletter -- oceanic gamefish investigations. National Marine Fisheries Service, Southeast Fisheries Center, Ocean Pelagics Team, Miami, FL.

ABSTRACT: The National Marine Fisheries Service's (NMFS) Miami Laboratory has been conducting surveys of recreational billfishing in the Gulf of Mexico since 1971 and in the Atlantic Ocean and Caribbean Sea since 1972. These surveys were initiated to monitor trends in billfish catch and effort as part of a commitment by the United States to participate in cooperative international investigations through the International Commission for Conservation of Atlantic Tunas (ICCAT), centered in Madrid, Spain. The ICCAT is responsible for coordinating and guiding scientific investigations on stocks of tunas and tuna-like fishes, including billfishes, in the Atlantic Ocean and adjacent seas. Data collected through the NMFS surveys are used in population modeling and in annual assessments of the status of stocks of Atlantic billfishes, and these results are presented to the international scientific community at ICCAT each year. In addition to the annual monitoring of recreational billfishing throughout the Western North Atlantic, Caribbean Sea, and Gulf of Mexico, NMFS has initiated special surveys designed to determine the total catch of billfishes by U.S. recreational fishermen. One such survey was conducted in 1977 and 1978 and follow-up surveys were conducted in the Gulf of Mexico in 1981 and in the Atlantic, Caribbean Sea, and Gulf of Mexico in 1983. The recreational billfish surveys described in this newsletter are part of a larger research program conducted by the Miami Laboratory's Oceanic Pelagics Team.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; coastal waters; continental shelf; biology; fisheries; fishery statistics; socioeconomics; recreation;

00834

Louisiana Continental Shelf System Working Group. 1982. Evaluation of brine disposal from the West Hackberry site: The regional impact on menhaden resources. Final report by the Center of Wetland Resources, Louisiana State University, to the U.S. Department of Energy, Strategic Petroleum Reserve Project Management Office, Washington, DC. 2 vol.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; oil and gas; fisheries; menhaden; brine disposal; environmental impact; Strategic Petroleum Reserve;

00835

Louisiana Department of Culture, Recreation and Tourism. 1983. Louisiana's comprehensive archaeological plan - management unit V. Louisiana Department of Culture, Recreation and Tourism, Baton Rouge, LA. 112 p.

ABSTRACT: Management Unit V is composed of 14 parishes located in the southeastern portion of the state. These parishes total approximately 10,000,699 acres or 27 percent of the state's total acreage, making it the largest management unit. The region is of geologically recent formation and includes the lower Mississippi alluvial valley, the eastern edge of the Atchafalaya Basin and the deltaic plain. The area is characterized by low-lying swampland, natural and man-made river levees, and coastal marsh. The dominant feature is the Mississippi River. Bisecting the deltaic plain between the Mississippi River and the Atchafalaya is Bayou Lafourche. Management Unit V is an area of rich cultural resources. The region contains significant remains of aboriginal settlement from Poverty Point until contact with Europeans. Most of the early permanent Euro-American settlement began in this region, principally along the Mississippi River and Bayou Lafourche. Archaeological sites known in the management unit are listed by cultural affiliation. Sites recorded total 870. While we have fair to good information on 812 of these sites, only 650 separate components are identified. Most of these are from Troyville-Coles Creek and late nineteenth and twentieth century sites. The least recorded sites are from Historic Contact and Poverty Point cultural units. No Paleo-Indian, Archaic or Caddo sites have been reported from this area.
KEYWORDS: Louisiana; archaeology; historic; prehistoric;

00836

Louisiana Department of Highways, Traffic and Planning Section. 1982. Traffic map showing motor vehicle traffic on principal roads. Louisiana Department of Transportation and Development, Traffic and Planning Division.

ABSTRACT: This is a traffic flow map for the state of Louisiana, compiled in 1982, showing principal roadways. The traffic flow figures may be brought to current estimated flows by increasing the indicated flow rates by 3 percent for each year since 1982.
KEYWORDS: Louisiana; socioeconomics; transportation;

00837

Louisiana Department of Natural Resources. 1980. Oil and gas production statistics - Louisiana state waters - 1979. Louisiana Department of Natural Resources, Office of Conservation, Baton Rouge, LA. (unpaginated).

ABSTRACT: This is a compilation of oil and gas production from state waters of Louisiana. Production figures include crude oil, condensate, casing head gas, and natural gas. The data are presented on the block level and include monthly, as well as, annual production.
KEYWORDS: Louisiana; coastal waters; oil and gas; socioeconomics;

00838

Louisiana Department of Natural Resources. 1981. Oil and gas production statistics - Louisiana state waters - 1980. Louisiana Department of Natural Resources, Office of Conservation, Baton Rouge, LA. (unpaginated).

ABSTRACT: This is a compilation of oil and gas production from state waters of Louisiana. Production figures include crude oil, condensate, casing head gas, and natural gas. The data are presented on the block level and include monthly, as well as, annual production.
KEYWORDS: Louisiana; coastal waters; oil and gas; socioeconomics;

00839

Louisiana Department of Natural Resources. 1982. Coastal protection task force report to Governor David C. Treen and to the Joint House and Senate Committee on Natural Resources and to the Legislative Budget Committee. Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Contains recommendations for a coastal protection/enhancement program to be funded under the provisions of Act 41 of the 1981 fall special session. Protection projects include freshwater diversions, barrier island stabilization, beach nourishment, and studies to evaluate projected future coastal conditions, and benefits and costs of such a program.
KEYWORDS: Louisiana; estuary; marsh; barrier island; beach; geology; biology; ecology; management;

00840
Louisiana Department of Natural Resources. 1982. Oil and gas production statistics - Louisiana state waters - 1981. Louisiana Department of Natural Resources, Office of Conservation, Baton Rouge, LA. (unpaginated).

ABSTRACT: This is a compilation of oil and gas production from state waters of Louisiana. Production figures include crude oil, condensate, casing head gas, and natural gas. The data are presented on the block level and include monthly, as well as, annual production.
KEYWORDS: Louisiana; coastal waters; oil and gas; socioeconomics;

00841
Louisiana Department of Natural Resources. 1983. Oil and gas production statistics - Louisiana state waters - 1982. Louisiana Department of Natural Resources, Office of Conservation, Baton Rouge, LA. (unpaginated).

ABSTRACT: This is a compilation of oil and gas production from state waters of Louisiana. Production figures include crude oil, condensate, casing head gas, and natural gas. The data are presented on the block level and include monthly, as well as, annual production.
KEYWORDS: Louisiana; coastal waters; oil and gas; socioeconomics;

00842
Louisiana Department of Natural Resources. 1984. Oil and gas production statistics - Louisiana state waters - 1983. Louisiana Department of Natural Resources, Office of Conservation, Baton Rouge, LA. (unpaginated).

ABSTRACT: This is a compilation of oil and gas production from state waters of Louisiana. Production figures include crude oil, condensate, casing head gas, and natural gas. The data are presented on the block level and include monthly, as well as, annual production.
KEYWORDS: Louisiana; coastal waters; oil and gas; socioeconomics;

00843
Louisiana Department of Wildlife and Fisheries. 1983. Spotted seatrout and red drum - an overview. Louisiana Department of Wildlife and Fisheries, Fisheries/Seafood Division, Baton Rouge, LA. 106 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; fisheries; seatrout; drum;

00844
Louisiana Department of Wildlife and Fisheries. 1984. Louisiana boat registration - 1983. Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA. 1 p.

ABSTRACT: This is a listing of boats registered in Louisiana in 1983. The listing is organized by parish, with a total of 303,043 boats registered in 1983.
KEYWORDS: Gulf of Mexico; Louisiana; socioeconomics; recreation;

00845
Louisiana State Planning Office. 1977. Louisiana coastal resources. Louisiana State Planning Office, Baton Rouge, LA.

ABSTRACT: General information concerning Louisiana's efforts toward a coastal zone management plan, and documents coastal parishes individual participation.
KEYWORDS: Louisiana; estuary; beach; marsh; barrier island; biology; ecology; socioeconomics; management;

00846
Louisiana State Planning Office. (No date). Soil subsidence maps and land loss potential maps due to channel construction. Louisiana State Planning Office, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; marsh; coastal waters; geology; erosion; dredging;

00847
Louisiana Wetland Protection Panel. 1987. Saving Louisiana's coastal wetlands. The need for a long-term plan of action. U.S. Environmental Protection Agency, Washington, DC. EPA-230-02-87-026. 102 p.

ABSTRACT: None
KEYWORDS: Louisiana; marsh; biology; ecology; environmental impact; management;

00848
Louisiana Wildlife and Fisheries Commission. 1968. The history and regulation of the shell dredging industry in Louisiana. Louisiana Wildlife and Fisheries Commission, Baton Rouge, LA. 32 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; dredging; socioeconomics;

00849
Louisiana Wildlife and Fisheries Commission. 1970. A study of estuarine sport fishes in the Biloxi Marsh complex, Louisiana. F-8 completion report. Louisiana Wildlife and Fisheries Commission, Baton Rouge, LA. 172 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; marsh; biology; fisheries; ecology;

00850
Louisiana Wildlife and Fisheries Commission. 1970. Water chemistry survey data, Louisiana estuaries, 1968-1969. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Rep. No. 7. 91 p.

ABSTRACT: This report contains a summary of chemical and physical parameters of mainly the saline waters of coastal Louisiana. Data were collected by the Louisiana Wildlife and Fisheries Commission at stations located throughout the coastal wetlands during the period December 1967 through June 1969. At most of the stations water samples were taken once every month.
KEYWORDS: Louisiana; coastal waters; marsh; chemistry; water quality;

00851
Louisiana Wildlife and Fisheries Commission. 1981. Licenses sold by parish - 1979, 1980 season. Louisiana Wildlife and Fisheries Commission, Baton Rouge, LA. 1 p.

ABSTRACT: This is an annual compilation of resident, non-resident, and non-resident trip fishing license sold, by parish, in Louisiana. Other data presented include hunting, big game, trapping, and bow licenses sold.
KEYWORDS: Louisiana; recreation; socioeconomics; fishery statistics; fisheries;

00852
Louisiana Wildlife and Fisheries Commission. 1982. Licenses sold by parish - 1980, 1981 season. Louisiana Wildlife and Fisheries Commission, Baton Rouge, LA. 1 p.

ABSTRACT: This is an annual compilation of resident, non-resident, and non-resident trip fishing license sold, by parish, in Louisiana. Other data presented include hunting, big game, trapping, and bow licenses sold.
KEYWORDS: Louisiana; recreation; socioeconomics; fishery statistics; fisheries;

00853
Louisiana Wildlife and Fisheries Commission. 1983. Licenses sold by parish - 1982, 1983 season. Louisiana Wildlife and Fisheries Commission, Baton Rouge, LA. 1 p.

ABSTRACT: This is an annual compilation of resident, non-resident, and non-resident trip fishing license sold, by parish, in Louisiana. Other data presented include hunting, big game, trapping, and bow licenses sold.
KEYWORDS: Louisiana; recreation; socioeconomics; fishery statistics; fisheries;

00854
Lowery, G.H. 1960. Louisiana birds. Louisiana State University Press, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; biology; wildlife; bird;

00855

Lum, J.A.S. 1981. The distribution of the wood boring isopod Limnoria in Texas estuaries and bays in relation to environmental factors. Ph.D. dissertation. Texas A&M University, College Station, TX. 144 p. (Diss. Abs. 42/03-B:874).

ABSTRACT: The gribble Limnoria tripunctata and other members of the family Limnoriidae annually cause millions of dollars of damage to wooden structures in the marine environment. Thus it is of considerable economic importance to understand the factors which control the distribution of gribbles. The objectives of this study were: (1) to determine the geographic distribution of gribbles in Texas bays, (2) to determine tolerances of L. tripunctata to temperature and salinity in the laboratory, and (3) to correlate field distribution, laboratory tolerances, and hydrographic conditions in the study area. Wood samples were collected from pilings at 33 stations located in Galveston, Matagorda, San Antonio, Aransas, Corpus Christi, and Baffin Bay systems and the Laguna Madre. Limnoria tripunctata, the only gribble species collected, was present in samples from Bolivar ferry landing, Texas City Dike, West Bay, Christmas Bay, Freeport, Port O'Connor, Port Aransas, Corpus Christi, Kennedy Causeway, Port Mansfield, Port Isabel, and Brownsville. This species has previously been reported from Galveston, Freeport, Port Aransas, Corpus Christi, and Port Isabel. Salinity and water circulation appeared to be the most important factors governing the local distribution of gribbles. Mean salinity (from Texas Parks and Wildlife Department Coastal Fisheries Projects Reports, 1963-1975) was greater than 19 ppt at positive stations and less than 22 ppt at negative stations. Most positive stations are near passes and are affected by tidal exchange between the Gulf of Mexico and the bay system. Limnoria tripunctata for the laboratory tolerance study were collected in winter and summer at the Texas City Dike in Galveston Bay. The animals were maintained on filter paper at a series of water salinity-temperature combinations. Experimental salinity range was 10-50 ppt, and temperature range was 5-35oC. Maximum survival occurred at 30 ppt salinity and at a temperature of 10oC in winter and 20oC in summer. The results suggest that seasonal temperature acclimation increases chances for survival at prevailing water temperatures. Animals acquire cold resistance in winter without loss of heat resistance and are able to tolerate the wide temperature fluctuations which occur on the Texas coast in winter. Animals are exposed to less temperature variation in summer but must tolerate higher temperatures. Warm acclimation reduces cold resistance and raises the upper temperature limit. The presence of L. tripunctata from Galveston to Brownsville indicates that environmental conditions favorable for this species occur along the entire Texas coast. Temperature conditions are favorable throughout the year, although laboratory studies suggest that highest summer (> 30oC) and lowest winter (< 10oC) temperatures are stressful. Results of the field and laboratory studies suggest 20-40 ppt as the salinity range for successful establishment of L. tripunctata in Texas bays.
KEYWORDS: Texas; estuary; biology; benthos; ecology;

00856

Lyon, J.M.; Baxter, K.N. 1974. Sample catches of penaeid shrimp taken by trawling in the northwestern Gulf of Mexico, 1961-1965. National Marine Fisheries Service, Data Rep. NMFS-DR-83. 51 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fishery statistics; shrimp;

00857

Lyon, J.M.; Boudreaux, C.J. 1983. Movement of tagged white shrimp, Penaeus setiferus in the northwestern Gulf of Mexico. Louisiana Dept. of Wildlife and Fisheries, Baton Rouge, LA. Tech. Bull. No. TB-39. 42 p. NTIS order No. PB84-239607.

ABSTRACT: From July 1977 through January 1979, 50,863 tagged white shrimp (Penaeus setiferus) were released in the Gulf of Mexico along the coast of Louisiana, with 36,639 released inshore and 14,224 released offshore. Recapture rates were 10.6% and 5.6% for inshore and offshore releases, respectively. Seventy-seven percent of the returns of tagged shrimp released in Caillou Lake were recaptured in this estuary and the adjacent offshore area. Predominant movement of the remainder of the recaptured stock from inshore releases was westerly, though some easterly movement occurred in fall and winter. Migration patterns noted in these studies are in general agreement with those of earlier investigations, especially the predominantly westward movement.
KEYWORDS: Louisiana; Texas; coastal waters; biology; fisheries; shrimp;

00858

Lytle, T.F.; Lytle, J.S. 1976. Assessment of hydrocarbon pollutants in Gulf and estuarine environments. J. Miss. Acad. Sci. 21:128-147.

ABSTRACT: None
KEYWORDS: Alabama; Mississippi; estuary; coastal waters; continental shelf; chemistry; oil and gas; hydrocarbon; environmental impact;

00859

Lytle, T.F.; Lytle, J.S. 1979. Sediment hydrocarbons near an oil rig. Estuar. Coast. Mar. Sci. 9:319-330.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; chemistry; oil and gas; environmental impact; hydrocarbon; sediment;

00860

Maceina, M.J.; Hata, D.N.; Linton, T.L.; Landry, A.M., Jr. 1987. Age and growth analysis of spotted seatrout from Galveston Bay, Texas. Trans. Am. Fish. Soc. 116(1):54-59.

ABSTRACT: Age and growth were estimated from sectioned otoliths for 426 spotted seatrout Cynoscion nebulosus collected from Galveston Bay, Texas, between October 1981 and September 1982. Marginal increment measurements showed that a single annulus formed on the otoliths during March and April. Annulus counts made by two independent readers agreed completely, suggesting that age interpretation from sectioned otoliths was precise. After age 1, back-calculated length-at-age estimates were much greater for females than males. Spotted seatrout from Galveston Bay generally grew faster than fish collected from other areas in the Gulf of Mexico. Gonadosomatic index values (gonad weight : body weight ratios) reflected a prolonged 6-month spawning period, which may have accounted for a four-fold difference in back-calculated lengths at age 1. The length advantage gained by larger individuals at age 1 was maintained as they grew older.
KEYWORDS: Texas; Galveston Bay; estuary; biology; fish; seatrout;

00861

Mackin, J.G. 1971. A study of the effect of oil field brine effluents on biotic communities in Texas bays. Texas A&M University Research Found. Proj. No. 735. 72 p.

ABSTRACT: Studies of the effect of brine discharges from oil fields in six areas in Texas bays and estuaries show that there is a small local effect at the Fisher's Reef Field, the Trinity Bay Field, in Cow Bayou (Friendswood Field discharge), and in Menefee Lake 1 (West Ranch Field discharge). This effect was found in the bottom fauna only; plankton and nekton apparently were unaffected. No effects were noted at Magnolia Beach Keller's Bay Olivia Field or Alazan-Baffin Bay.
KEYWORDS: Texas; estuary; biology; oil and gas; environmental impact; brine disposal;

00862

Mackin, J.G.; Hopkins, S.H. 1962. Studies on oyster mortality in relation to natural environments and to oil fields in Louisiana. Publ. Inst. Mar. Sci. Univ. Tex. 7:1-131.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; biology; oil and gas; environmental impact; oyster;

00863

Macko, S.A. 1981. Stable nitrogen isotope ratios as tracers of organic geochemical processes. Ph.D. dissertation. The University of Texas at Austin. 192 p. (Diss. Abs. 42/07-B:2743).

ABSTRACT: Through the use of a refined Dumas combustion, this study sought information on the natural abundance levels of the (delta)(15)N of organic nitrogen in the marine environment. Individual studies included the mixing of organic matter, the effect of diagenesis on (delta)(15)N, the tracing of oil pollution, the resolution of animal-diet relationships, and the analysis of isotope effects in natural tetrapyrroles. The knowledge of (delta)(15)N and (delta)(13)C of sedimentary materials has enabled the resolution of sources of organic matter during mixing at six different locations. These studies included: mixing of planktonic matter with either algal mat, brown algal, or seagrass material, terrestrial nitrogen mixing with marine nitrogen, and recently fixed nitrogen mixing with detrital mangrove nitrogen. If (delta)(15)N had not been used, different types of organic matter may have been confused. In Maine estuaries, organic material from fucoids was discerned even though the (delta)(13)C values of those plants resembled other local organic inputs. Support for the model of the Baffin Bay algal mat mud layers originating from catastrophic events resulted from (delta)(15)N analyses of them. Diagenetic processes may result in an increase in (delta)(15)N of the residual material on the order of 3 to 5 ppt. This enrichment was observed in both blue-green algal mats and seagrass beds of South Texas. A broad range of (delta)(15)N values and the conservative nature of (delta)(15)N during weathering of oil enabled this study to distinguish sources of tarballs on the beaches of Port Aransas, Texas. Principal sources of tarballs were two major oil spills in the Gulf of Mexico: the Ixtoc I well blow-out of June, 1979, and the breakup of the tanker BURMAH AGATE in November, 1979 ((delta)(15)N= + 0.6 and + 5.5, respectively). When in conjunction with (delta)(13)C, the (delta)(15)N values of oil aid in determining the source of the petroleum. Animal-diet relationships have been mapped by (delta)(15)N analyses. Amphipods (Ampithoe valida) grown on different diets have shown the same fractionation (-0.3 per mil) while Parhyale hawaiiensis, raised on the same diets has shown a different fractionation (+2.3 per mil). Natural populations of the same animals had similar fractionations. Naturally occurring tetrapyrrole (delta)(15)N values (chlorophylls) have been observed to be variable with respect to whole plant (delta)(15)N values. Marine plants associated with sediments tended to have (delta)(15)N enriched tetrapyrroles while water column and terrestrial tetrapyrroles were similar to whole plant (delta)(15)N values.
KEYWORDS: Texas; estuary; coastal waters; chemistry; geology; stable isotope; seagrass; oil spill; Ixtoc;

00864

Macko, S.A.; Parker, P.L. 1983. Stable nitrogen and carbon isotope ratios of beach tars on south Texas barrier islands. Mar. Environ. Res. 10(2):93-103.

ABSTRACT: Stable nitrogen and carbon isotope analyses have been used to characterize 2 major oil spills in the northwestern Gulf of Mexico. Stable isotope ratios were determined on both the crude material and on discrete chemical fractions of the whole oil (aliphatic, aromatic and NOS). A comparison of these isotopic compositions, of the crude materials and their chemical fractions, with those from samples of beach tars collected from south Texas barrier islands has indicated at least 16 distinct isotopic signatures in the beach tars, excluding those resembling the major spills. This variation may be indicative of multiple sources of oils stemming from exploration and transport activities.
KEYWORDS: Texas; beach; barrier island; chemistry; oil and gas; hydrocarbon; stable isotope;

00865

Mankiewicz, P.J. 1981. Hydrocarbon composition of sediments, water, and fauna in selected areas of the Gulf of Mexico and southern California marine environment. D.Env. dissertation. University of California, Los Angeles. 350 p. (Diss. Abs. 42/04-B:1357).

ABSTRACT: This report is the result of an internship with Science Applications, Inc. under the auspices of the Department of Environmental Science and Engineering, University of California, Los Angeles. The majority of the work performed was the result of two large petroleum hydrocarbon baseline efforts in the southern California outer continental shelf and nearshore areas in the Gulf of Mexico. Predominantly sediments, but also water column and faunal samples were analyzed for their hydrocarbon content using high resolution gas chromatography and gas chromatography/mass spectrometry. Seawater and geographic variability of faunal analyses appeared to be governed by feeding habit and source composition whereas water column analyses indicated a consistent petroleum component with biological contributions varying with temperature and salinity. In the nearshore areas off Texas and Louisiana the water column contained notable concentrations of petroleum in the dissolved phase, most notably alkyl naphthalenes and phenanthrenes whereas the sediments were tainted with petroleum derived from combustion sources of crude oil and refined products. In southern California the dominant source of hydrocarbons in intertidal sediments is petroleum derived from seepage. However, in the offshore areas dated cores and surficial sediment analyses suggest that while seepage-sourced petroleum is present, the dominant source of hydrocarbons is combustion-derived air pollution.
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; chemistry; oil and gas; hydrocarbon; sediment;

00866

Maples, R.S.; Donahoe, R.; Fister, G.J. 1983. Seasonal variability of chlorophyll a in the nearshore marine waters of southwestern Louisiana. Proc. La. Acad. Sci. 46:53-55.

ABSTRACT: The coastal waters of Louisiana are among the more productive in the Gulf of Mexico for commercial fisheries, and yet there have been few investigations of phytoplankton community structure and primary productivity in this important ecosystem. The purpose of this paper was to measure phaeopigment corrected chlorophyll a and relate its seasonal variation to the phytoplankton standing crop.
KEYWORDS: Louisiana; coastal waters; biology; plankton; chlorophyll;

00867

Maples, R.S.; et al. 1984. An environmental assessment of selected estuarine habitats in Calcasieu Lake, Louisiana. Louisiana Department of Natural Resources, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; biology; ecology;

00868

Maresca, J.W., Jr.; Carlson, C.T. 1980. Comment on 'Longshore currents on the fringe of Hurricane Anita' by Ned P. Smith and reply. J. Geophys. Res. 85(C3):1640-1642.

ABSTRACT: Smith (1978) reported observations of the Gulf of Mexico subsurface coastal longshore currents in the outer regions of hurricane Anita during the development of the storm. The present authors state that to interpret the longshore current structure on the continental shelf during the 15 day observation period (Aug 24, 1977-Sept 7, 1977), it is also necessary to consider the forcing caused by hurricane Babe. The purpose of their paper is to report daily measurements of the surface current in the upper meter made along the western Louisiana continental shelf during a similar period, and to discuss these in relation to Smith's observations. A brief reply by Smith is included, and he acknowledges the possible effects of Babe.
KEYWORDS: Gulf of Mexico; continental shelf; physical; hurricane; current;

00869

Martin, A.C.; Uhler, C.M. 1939. Food of game ducks in the United States and Canada. U.S. Department of Agriculture, Tech. Bull. No. 634.

ABSTRACT: This work presents the results of a large scale dietary analysis study on a number of game ducks from the United States and Canada. Dietary items were enumerated and identified. Importance of different habitats required to provide food for the different species is discussed.
KEYWORDS: United States; biology; bird; ecology;

00870
Martin, R.G. 1978. Northern and eastern Gulf of Mexico continental margin: stratigraphic and structural framework, p. 21-42. In A.H. Bouma, G. T. Moore, and J.M. Coleman [ed.], Framework, facies, and oil trapping characteristics of the upper continental margin. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: The continental margin of the northern Gulf of Mexico extends from DeSoto Canyon to northern Mexico and from more than 300 km inland in the central Gulf Coast to the deep gulf floor. It is composed of a broad wedge of Mesozoic and Cenozoic strata that accumulated almost continuously from Jurassic time to the present. Mesozoic and Cenozoic deposits are more than 15 km thick beneath the lower coastal plain and adjacent continental shelf. For the most part, the margin is a Cenozoic clastic embankment built by the inpouring of sediments from the continental interior after the late Cretaceous-Paleocene laramide orogeny. Sediment supplies generally exceeded the subsidence rate, prograding the seaward face of the margin more than 400 km from the edge of Cretaceous carbonate platform deposits under the coastal plain, to the present position of the continental slope. Along the inner regions of the coastal plain from Alabama to southwestern Texas, updip members of Mesozoic and Cenozoic units rest unconformably on complexly folded and faulted Paleozoic rocks of the Ouachita and Appalachian tectonic belts. Major structural anomalies affecting the Mesozoic-Cenozoic sequence of the coastal plain, shelf, and slope are salt diapirs, growth faults, and shale uplifts. Salt structures are concentrated in interior basins in the inner coastal plain, along the lower coast from central Texas to DeSoto Canyon, and across the continental shelf to the foot of the slope. Regional systems of growth faults slice through Cenozoic units beneath coastal Texas and Louisiana and in the adjacent shelf. Many of these faults formed as a response to sediment overloads along Tertiary and Quaternary shelf edges, to differential compaction associated with abrupt changes in sediment thickness and gross lithology, and (locally) to the withdrawal of large volumes of salt from depth during diapiric growth. The continental margin of the eastern Gulf of Mexico is dominated by the Florida platform, composed of a thick accumulation of bathyal to neritic carbonate rocks and evaporite deposits of Mesozoic and Cenozoic age. The platform is fronted by a prominent escarpment built by shelf-edge reef complexes during the Early Cretaceous. The northern half of the platform was built on a continental foundation composed of upper Precambrian and lower Paleozoic igneous and metamorphic rocks and capped by undeformed clastic sediments of Ordovician, Silurian, and Devonian age. Triassic redbeds and associated diabase are common in the extensive graben systems that underlie northwestern Florida. Southern peninsular Florida is underlain by basement composed of volcanic and hypabyssal rocks of Triassic and Early Jurassic age. Geophysical data suggest similar basement complexes beneath the West Florida Shelf and Slope.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; geologic history; stratigraphy; faulting; diapir;

00871
Martin, R.G.; Bouma, A.H. 1978. Physiography of Gulf of Mexico, p. 3-20. In A.H. Bouma, G.T. Moore, and J.M. Coleman [ed.], Framework, facies, and oil trapping characteristics of the upper continental margin. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: The Gulf of Mexico covers an area of more than 1,500,000 sq km, has a maximum depth of about 3,700 m, and includes many of the geomorphic features of large oceans. The continental shelf, slope, rise and abyssal plain comprise the major physiographic provinces of the gulf and contain a variety of subprovinces distinguished by topographic character and geomorphic history. The gulf shelf is a relatively smooth, gently sloping surface marked locally by low-relief features formed by sea-level fluctuation during the Pleistocene, reef growth, near-surface movement of diapiric salt and mud, and faulting. Shelf width varies from about 280 km off the Florida and Yucatan Peninsulas to less than 10 km at the Mississippi Delta. The continental slope consists of a considerable variety of physiographic features that encircle the deep gulf floor. The distinctive subprovinces of the gulf slope have evolved in response to reef building and constructional sedimentation on the Florida and Yucatan carbonate platforms; erosion, nondepositional sedimentation in the region off Texas and Louisiana; the large accumulation of mainly Pleistocene sediment on a former continental slope seaward of the Mississippi Delta; tectonic uplift and diapirism in the Golfo de Campeche; and shale mobilization off eastern Mexico. In contrast to the greatly varied, irregular topography of the continental slope, the deep seafloor of the gulf (composed of the continental rise and abyssal plain provinces) is an almost featureless plain smoothed by turbidite and pelagic sedimentation and marked locally by low-relief knolls, sedimentary aprons and small-levied channels.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; deep sea; geology; geologic history; diapir; faulting; sedimentation; oil and gas;

00872

Marum, J.P. 1979. Significance of distribution patterns of planktonic copepods in Louisiana coastal waters and relationships to oil drilling and production, p. 355-378. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: Zooplankton collections were made in the study area of the Offshore Ecology Investigation (Timbalier Bay) and in two additional Gulf of Mexico coastal areas to determine distribution patterns of holoplankton (single species copepod populations, diversity, biomass) and their relationship to long-term oil drilling and production. The plankton community in Timbalier Bay was found to consist of coastal-neritic and estuarine species, and a community in the inner shelf consisted of oceanic, slope-oceanic, shelf, and neritic species. Only limited faunal exchange appears to take place (except during severe spring floods) between Timbalier Bay and the adjoining shelf, because of a shallow sill, low tidal amplitude, and barrier islands.
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; oil and gas; plankton; environmental impact; Offshore Ecology Investigation;

00873

Mason, C. 1981. Hydrolics and stability of five Texas inlets. U.S. Department of the Army, Coastal Engineering Research Center, Fort Belvoir, VA. Rep. No. MR 81-1. 105 p.

ABSTRACT: Existing data on tides and currents of five Texas inlets (Freeport Harbor entrance, San Luis Pass, Galveston Bay entrance, Rollover Pass, and Sabine Pass) are analyzed to determine the hydraulics of the inlet-bay systems. The effects of the hydraulics and other factors on inlet stability are also examined. Variability in mean tidal ranges and water levels occurs on several time scales.
KEYWORDS: Texas; physical; coastal waters; tide; current;

00874

Matheson, R.E. 1981. The distribution of the flagfin mojarra, Eucinostomus melanopterus (Pisces: Gerreidae) with ecological notes on Texas and Florida populations. N.E. Gulf Sci. 5(1):63-66.

ABSTRACT: None
KEYWORDS: Texas; Florida; biology; fish; ecology;

00875

Matis, J.H.; Grant, W.E. 1982. Shrimp population studies. West Hackberry and Big Hill brine disposal sites off southwest Louisiana and upper Texas coasts, 1980-1982. Volume 2. Shrimp catch and effort data analysis. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-83022201. 217 p. NTIS order No. PB83-172262.

ABSTRACT: This report presents an analysis of shrimp catch and effort data in relation to the brine disposal from salt domes at West Hackberry and Big Hill in southwest Louisiana and the upper Texas coasts, respectively.
KEYWORDS: Texas; Louisiana; coastal waters; biology; oil and gas; shrimp; fisheries; environmental impact; brine disposal; Strategic Petroleum Reserve;

00876

Matlock, G.C. 1984. A basis for the development of a management plan for red drum in Texas. Ph.D. dissertation. Texas A&M University, College Station, TX. 318 p. (Diss. Abs. 45/09-B:2755).

ABSTRACT: The life cycle of red drum (Sciaenops ocellatus) is generally well known and consists of spawning in the Gulf of Mexico or Atlantic Ocean in the late summer and fall, utilization of estuarine nurseries, and return to the gulf or ocean at age III to V. However, many details of the life history are unclear or unknown. Estimates of life history parameters except length-weight relationships are generally imprecise, undocumented, or unknown. Long-term trends in size composition and stock abundance are generally unknown, but recent evidence suggests that recent recruitment to the spawning population may have been small, in part possibly associated with the lack of hurricanes during the spawning season. Spawner-recruit relationships have not been examined. Habitat requirements are generally unknown. Red drum harvest has occurred mainly in estuaries throughout the year by commercial and recreational fishermen. The exact harvest is unknown but exceeds 500,000 fish and 500,000 kg. Less than 636 commercial fishermen using nets and trotlines harvest most of these fish. There are at least 500,000 red drum anglers. Total economic impacts (retail level) of commercial fishermen were generally less than $7 million while those of anglers were over $118 million. The commercial fishery supplied at least 66,000 consumers with red drum while the recreational fishery supplied at least 61,000 consumers. Red drum populations do not have a great biological capacity to withstand growth overfishing. Therefore, a conservative approach to management of this species is suggested, especially since the best available data indicate growth overfishing has occurred. This has been the approach of past management, but increasing fishing demands might warrant additional action for conservative management. Possible alternatives are presented, including: harvest restrictions, habitat improvements, stocking, and participant limitations.
KEYWORDS: Texas; estuary; coastal waters; biology; fisheries; fish; drum; fishery management;

00877

Matthews, G.A. 1981. The effects of floods on the zooplankton assemblage of San Antonio Bay, Texas during 1972 and 1973, p. 509-525. In Proceedings, National Symposium on Freshwater Inflow to Estuaries.

ABSTRACT: None
KEYWORDS: Texas; estuary; San Antonio Bay; biology; physical; meteorology; plankton; ecology;

00878

Matthews, G.A. 1982. Abundance and size distributions of Penaeus spp. shrimps in the northern and northwestern Gulf of Mexico during the 1982 closure period. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC109. 64 p. NTIS order No. PB84-215672 NOAA-84070904.

ABSTRACT: Analyses of shrimp populations in shallow coastal waters of the Gulf of Mexico from Alabama to Texas during the Texas Closure (May 26-July 14, 1982) were made based on a collection of 299 trawl samples. Shrimp were more abundant off Texas than in the other areas, and were more abundant between 10 and 20 fathoms than at other depths. Catch per unit effort data from our samples indicated shrimp were 25% more abundant during the 1981 Texas Closure than during the 1982 closure. Populations of brown shrimp were examined through length-frequency analyses. Mean lengths in each 5-fm depth zone showed the typical increases with increasing water depths.
KEYWORDS: Texas; Louisiana; Mississippi; Alabama; coastal waters; biology; fisheries; shrimp; fishery statistics; fishery management;

00879

Matthews, G.A. 1982. Relative abundance and size distributions of commercially important shrimp during the 1981 Texas closure. Mar. Fish. Rev. 44:5-15

ABSTRACT: None
KEYWORDS: Texas; Louisiana; biology; fisheries; shrimp; fishery management;

00880

Matthews, G.A. 1984. Relative abundance and size distributions of Penaeus shrimps based on samples collected during the 1983 Seamap-Texas closure survey in the north and northwestern Gulf of Mexico. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-149. 50 p. NTIS order No. PB85-177368/XAB.

ABSTRACT: During May, June and half of July 1983, 283 sites were sampled for the SEAMAP-Texas Closure survey. Relative abundance of Penaeus spp. was measured by catch per unit effort which was standardized to lbs/40-ft net/30-min drag. CPUEs averaged 7.4 lbs in the Texas region, 1.1 lbs in the Louisiana region, 1.8 lbs in the Mississippi-Alabama region, and 0.3 lbs in the Florida region. Highest CPUEs for each statistical subarea were usually found between 10 and 20 fathoms.
KEYWORDS: Texas; Louisiana; Mississippi; Alabama; Florida; continental shelf; coastal waters; biology; fisheries; shrimp; fishery statistics;

00881

Matthews, G.A.; Koi, D.B.; Benefield, R. 1984. A user's guide to the inshore shrimp and hydrographic data collected by the Texas Parks and Wildlife Department from 1963 through 1980. NOAA Tech. Mem. NMFS-SEFC-140. 74 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; physical; chemistry; shrimp; salinity; temperature;

00882

Matthews, G.A.; Mueller, A.J. 1987. Freshwater inflow requirements of a Texas estuary, p. 852-866. In Proceedings, Coastal Zone '87: The Fifth Symposium on Coastal and Ocean Management.

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; physical; chemistry;

00883
Matthews, J.E.; Bucca, P.J.; Geddes, W.H. 1985. Preliminary environmental assessment of the PROJECT GEMINI site--Corpus Christi, Texas. Preliminary rept. Naval Ocean Research and Development Activity, NSTL Station, MS. Rep. No. NORDA-120. 31 p. NTIS order No. AD-A161 895/8/XAB.

ABSTRACT: This report is a preliminary assessment of the environment along parts of the continental shelf off Corpus Christi, Texas, and predicts acoustic propagation for a specific site within the area. A geoacoustic model is developed, based upon archived high-resolution seismic and sediment core data. Theoretical bottom loss, transmission loss, and mode attenuations are calculated using these environmental models as input. Finally, an environmental acoustic evaluation is presented for guidance in the post-experiment analysis, and a comparison is made between the present evaluation and a previous acoustic experiment conducted at this location.
KEYWORDS: Texas; continental shelf; physical; geology;

00884
Maurer, L.C.; Parker, P.L. 1972. The distribution of dissolved organic matter in the nearshore waters of the Texas coast. Contrib. Mar. Sci. 16:109-124.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; continental shelf; chemistry;

00885
Mazzullo, J.; Bates, C. 1985. Sources of Pleistocene and Holocene sand for northeast Gulf of Mexico shelf and Mississippi Fan. Am. Assoc. Pet. Geol. Bull. 69(9):1427. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; continental slope; Mississippi Fan; geology; sediment;

00886
McAuliffe, C.D.; Smalley, A.E.; Groover, R.D.; Welsh, W.M.; Pickle, W.S.; Jones, G.E. 1975. Chevron main pass block 41 spill: chemical and biological investigations. In Proceedings, 1985 Conference of Prevention and Control of Oil Pollution. Am. Pet. Inst., Washington, D.C.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; oil and gas; oil spill; environmental impact; biology; chemistry; hydrocarbon; benthos;

00887
McCormick, C.L.; Fooladi, M. 1977. Synthesis, characterization, and release mechanisms of polymers containing pendant herbicides. ACS Symposium 53:112-125.

ABSTRACT: Polymeric systems for controlled release of metribuzin have been prepared using biodegradable substrates. Macromolecular substrates were reacted with metribuzin adducts to yield systems with herbicide to polymer bonds susceptible to chemical or enzymatic hydrolysis.
KEYWORDS: Louisiana; Mississippi River Delta; chemistry; pesticide;

00888
McDonald, G. (No date). Water heights associated with various hurricanes. U.S. Army Corps of Engineers, Mobile District, Mobile, AL.

ABSTRACT: Several larger hurricanes occurring in the Gulf of Mexico were investigated and reported on. Water heights associated with each hurricane were included in these reports as well as patterns of movements and dates of occurrence from 1911 to the present time.
KEYWORDS: Gulf of Mexico; physical; meteorology; hurricane; tide; wave;

00889

McEachran, J.D.; Finucane, J.H.; Hall, L.S. 1980. Distribution, seasonality and abundance of king and Spanish mackerel larvae in the northwestern Gulf of Mexico (Pisces: Scombridae). N.E. Gulf Sci. 4(1):1-16.

ABSTRACT: Larvae of king mackerel, Scomberomorus cavalla, and Spanish mackerel, S. maculatus were collected from 1975 through 1977 off the Texas coast. Both species were captured from May through October. S. cavalla was relatively more abundant of the two species and occurred most abundantly over the middle and outer continental shelf (35-183 m). At least 35% of the larvae were captured in September of each year. S. maculatus larvae occurred most abundantly over the inner continental shelf (12 to 50 m). S. cavalla spawned from May through September to early October, with the greatest spawning intensity occurring over the middle and outer continental shelf during September. S. maculatus spawned from May through September to early October over the inner continental shelf, but spawning was less intensive and more irregular than for S. cavalla.
KEYWORDS: Texas; coastal waters; continental shelf; biology; ecology; fish; mackerel;

00890

McEachron, J.W.; Matlock, G.C. 1983. Estimate of harvest by the Texas charter boat fishery. Rep. No. NOAA-83032401-2. 7 p. NTIS order No. PB83-183053.

ABSTRACT: The charter boat fishery from the Florida west coast to Texas received over $20 million in fees alone in 1970 (Bureau of Sport Fisheries and Wildlife, 1972). In 1975, Texas fishermen spent $1.3 million on charter fees (Woods and Ditton, 1979). Although economically important, the Texas charter boat fishery was essentially ignored by fisheries scientists until late 1974. Almost 99 percent of this harvest was spotted seatrout, Cynoscion nebulosus.
KEYWORDS: Texas; coastal waters; continental shelf; fisheries; fishery statistics; recreation; socioeconomics;

00891

McEachron, L.W. 1980. Headboat and charterboat finfish catch statistics for the bays and Gulf waters of Texas, September 1978-August 1979. Texas Parks and Wildlife Dept., Austin. Coastal Fisheries Branch. Report to National Marine Fisheries Service, Washington, DC. Rep. No. TPWD-MDS-10. Also NOAA-80073002. 43 p. NTIS order No. PB80-225477.

ABSTRACT: From September 1978 through August 1979 headboat and charterboat fishermen were surveyed in the Galveston-Freeport, Aransas-Corpus Christi and lower Laguna Madre areas. During this period 104 headboat and 74 charterboat interviews were conducted. All surveys were separated as to Gulf of Mexico fishing or bay fishing. Reef fishes, mainly red snapper (Lutjanus campechanus), dominated the Gulf headboat catches; sand seatrout (Cynoscion arenarius) dominated the bay headboat catches. Spotted seatrout (C. nebulosus) constituted almost all of the bay charterboat catches; king mackerel (Scomberomorus cavalla), Spanish mackerel (S. maculatus) and red snapper dominated the Gulf charterboat catches.
KEYWORDS: Texas; estuary; coastal waters; fisheries; fishery statistics; reef; seatrout; snapper; mackerel; recreation;

00892

McEachron, L.W. 1980. Gulf pier and jetty finfish catch statistics for the Gulf waters of Texas, September 1978-August 1979. Texas Parks and Wildlife Dept., Austin. Coastal Fisheries Branch. Report to National Marine Fisheries Service, Washington, DC. Rep. No. TPWD-MDS-11. Also NOAA-80073001. 27 p. NTIS order No. PB80-225485.

ABSTRACT: From September 1978 through August 1979 Gulf piers and jetties were surveyed in the High Island-Galveston-Freeport, Port Aransas-Corpus Christi and Port Isabel areas. Bottom fishes, mainly sand seatrout (Cynoscion arenarius), Atlantic croaker (Micropogon undulatus) and 'other' fishes were the main fishes retained. Weekday annual mean catch rates (kg/man-h) for all species combined ranged from 0.09 to 0.12 kg/man-h. Weekend catch rates ranged from 0.03 to 0.04 kg/man-h. Weekday catch rates were two to three times higher than those recorded on weekends. It is recommended that a survey of the fall surf run of red drum (Sciaenops ocellata) be included in future surveys. This survey indicates that the fishermen using Gulf piers and jetties are probably not severely affecting fish stocks in the surf zone. It appears that for the number of persons fishing few fish are being caught.
KEYWORDS: Texas; coastal waters; fisheries; recreation; fish; fishery statistics;

00893

McGrail, D.W. 1977. Shelf edge currents and sediment transport in the northwestern Gulf of Mexico. Trans. Am. Geophys. Un. 58:1160 (abstract only).

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; physical; geology; sediment transport; current;

00894

McGrail, D.W. 1982. Anomalous flow on the outer continental shelf in the Gulf of Mexico and its effect on sediment transport. Trans. Am. Geophys. Un. 63(3):65 (abstract only).

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; physical; geology; sediment transport; current;

00895

McGrail, D.W.; Carnes, M. 1983. Shelfedge dynamics and the nepheloid layer in the northwestern Gulf of Mexico, p. 251-264. In D.J. Stanley and G.T. Moore [ed.], Shelf Break: Critical Interface on Continental Margins. Soc. Econ. Paleo. Mineral. Spec. Pub. No. 33.

ABSTRACT: An investigation of shelfedge sedimentary processes in the Gulf of Mexico has been underway for the past five years. It has consisted of in situ bottom boundary layer (BBL) experiments, time series observations using moored instruments, and hundreds of hydrographic stations. A ubiquitous nepheloid layer exists over the outer continental shelf in the BBL. It reaches a maximum thickness of 30 m when offshore flow near bottom stacks detached bottom boundary layers at the shelfedge. The shear stresses which maintain the sediment suspension are contributed by a superposition of many modes of motion. In the northwestern Gulf of Mexico, surface gravity waves, high frequency internal waves and tides do not appear to contribute significantly to the sedimentary processes at the shelfbreak. However, diurnal inertial oscillations do resuspend silt and clay at the shelfedge and transport that sediment to the offshore. Winter storms produce three types of phenomena that influence sediment transport: (1) direct, energetic, cross-shelf wind-driven flow; (2) production of dense cool, saline bottom water that flows offshore under the influence of gravity; and (3) inertial oscillations which propagate to the bottom. The mean shelfedge flow was found to be west to east in the interior, with bottom waters oriented more southeasterly. The latter should contribute to a long term advection of sediment off the shelf. Flow on the bottom of the upper slope has been observed to be oriented to the northeast, suggesting a convergence in the BBL near the shelfbreak.
KEYWORDS: Texas; Louisiana; continental shelf; geology; physical; sediment; nepheloid;

00896

McGrail, D.W.; Rezak, R. 1977. Internal waves and the nepheloid layer on the continental shelf in the Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 27:123-124.

ABSTRACT: The nepheloid layer on the south Texas continental shelf exhibits a distinct relationship with a mixed (isohaline-isothermal) layer at the base of the water column. This mixed layer is a boundary phenomenon produced by turbulence generated in the adjustment of the various modes of motion to the no-slip condition at the shelf-sea interface. The boundary layer is capped by strongly stratified water that inhibits further upward mixing. Sediment, either advected from nearshore regions or resuspended locally, is limited primarily to this mixed layer. There are, however, instances where layers containing suspended sediment maxima occur above and isolated from the mixed layer. These usually occur at some step in the temperature and salinity profiles. A simple flow visualization experiment conducted near Southern and Hospital banks offers both an explanation for the isolated maxima and a mechanism for substantial vertical diffusion of suspended sediment. The experiment consisted of recording the behavior of plumes shed from dye packets deployed within a meter of the bottom on both super-8-mm movie film and video tape from the R/V Diaphus. Analysis of these recordings indicates that unusually high-frequency internal waves (periods <1 min) occurred at both locations. Similar motions were recorded as isolated events on the precision depth recorder. At Hospital Bank, these motions dominated the flow, whereas at Southern Bank, the waves were superimposed on a unidirectional current. Classic theory and laboratory experiments show that, when these waves propagate onto a slope, they may become unstable, break, and inject mixed fluid from the boundary seaward. This could account for the isolated suspended sediment maxima and their occurrence in stepped profiles of temperature and salinity. Both the internal waves and intermittent bursts of turbulence were seen to cause upward diffusion of suspended sediment that would maintain the nepheloid layer.
KEYWORDS: Texas; continental shelf; physical; nepheloid; wave;

00897

McGrail, D.W.; Rezak, R.; Bright, T.J.; et al. 1982. Environmental studies at the Flower Gardens and selected banks: northwestern Gulf of Mexico - 1979-1981. Report by Texas A&M University to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. AA851-CT0-25. 2 vol. NTIS order Nos. PB83-101303 and PB83-101295.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; Flower Garden Banks; continental shelf; reef; biology; chemistry; physical; geology; benthos; hydrocarbon; current;

00898
McHugh, G. 1976. Development of a two-dimensional hydrodynamic numerical model for use in a shallow well-mixed estuary. Louisiana Sea Grant Pub. No. LSU-T-76-008. 167 p.

ABSTRACT: Part 1 shows how a two-dimensional hydrodynamic model was developed. The model is capable of predicting water levels and current velocities within an area of arbitrary size and shape, with either open or closed boundaries. Part 2 discusses the feasibility of computing tidal flow through a small marsh area, using equations and solutions shown in Part 1.
KEYWORDS: Louisiana; estuary; marsh; physical; current; tide; model;

00899
McIntire, W.; Hershman, M. 1975. A rationale for determining Louisiana's coastal zone. Louisiana Sea Grant Pub. No. LSU-T-75-006. 91 p.

ABSTRACT: A compendium of information to aid in the delineation of Louisiana's inland coastal zone boundary. Legal, governmental, and biophysical considerations in establishing this boundary are discussed as reference material for coastal zone planners and administrators.
KEYWORDS: Louisiana; estuary; marsh; biology; geology; ecology; management;

00900
McIntire, W.G. 1958. Prehistoric Indian settlements of the changing Mississippi River Delta. Louisiana State University Press, Coastal Studies Series No. 1.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; archaeology; prehistoric;

00901
McKelvey, P.S. 1981. Louisiana Offshore Oil Port - LOOP for Short. Shipp. World Shipbuild. 176(3979):450-451.

ABSTRACT: None
KEYWORDS: Louisiana; oil and gas; socioeconomics; shipping;

00902
McKinney, L.D.; Harper, D.E., Jr. 1980. Effects of hypoxia on the structure of benthic marine communities in the western Gulf of Mexico. Am. Zool. 20 (4):742. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Texas; coastal waters; continental shelf; biology; benthos; hypoxia; dissolved oxygen;

00903
McKown, M.M.; Montalvo, J.G., Jr. 1976. Trace metal analysis: Quality control for MAFLA IV and South Texas II investigations. Report by Gulf South Research Institute to the Bureau of Land Management, Washington, DC. Contract No. 08550-CT5-49. 173 p.

ABSTRACT: A comprehensive quality control program was conducted by Gulf South Research Institute in support of the MAFLA OCS monitoring and South Texas OCS baseline program. A total of 241 samples, including 10 samples of suspended particulates, 31 zooplankton samples, 19 paint chip samples, 75 sediment samples, and 106 epifaunal samples were subjected to quality control analyses of trace metals.
KEYWORDS: Texas; Florida; Alabama; Mississippi; continental shelf; chemistry; trace metal; sediment; shrimp; fish; oyster; STOCS;

00904
McMillan, C. 1979. Differentiation in response to chilling temperatures among populations of 3 marine spermatophytes: Thalassia testudinum, Syringodium filiforme and Halodule wrightii. Am. J. Bot. 66 (7):810-819.

ABSTRACT: Upon exposure to chilling conditions, the seagrass populations of T. testudinum Banks ex Konig, S. filiforme Kutz., and H. wrightii Aschers. showed various amounts of leaf and plant damage that correlated with their origin in the Gulf of Mexico-Caribbean. Populations of more tropical origin in the southern Gulf and Caribbean showed the most chill damage and those of the northern Gulf showed the least injury from the exposure to low temperatures. Of the 3 seagrasses, Halodule showed greatest chill tolerance, Syringodium showed the least tolerance and Thalassia was intermediate. The uptake of 14C by leaves following exposure to chilling temperatures showed quantitative differences that correlated with the amount of leaf damage in the various populations. No significant changes in the fatty acids in total lipid extracts were noted in the Texas seagrasses after chilling and, therefore, their resistance to low temperature damage did not relate to changes in saturation of fatty acids. Although the growing conditions slightly altered the severity of the chilling effects, the differentiation of response to chilling among the seagrass populations is based on inherited properties.
KEYWORDS: Texas; estuary; biology; seagrass; flora; physiology;

00905
McMillan, C. 1980. Reproductive physiology in the seagrass Syringodium filiforme from the Gulf of Mexico and the Caribbean. Am. J. Bot. 67 (1):104-110.

ABSTRACT: Reproductive physiology in S. filiforme Kuetz. is controlled primarily by temperature under day lengths ranging from 12 h to continuous light. Texas (USA) plants can be induced to flower at temperatures ranging from 20-24.degree. C, but southern Gulf of Mexico and Caribbean plants are most readily induced at 23-24.degree. C. Texas plants proceed to anthesis at temperatures above 22.degree. C, but St. Croix plants require higher temperatures, above 25.degree. C, for emergence of flowers from the bracts. Flowers induced under continuous light proceed to anthesis under day lengths shortened to 11 h, but further total induction is inhibited even under inductive temperatures. In natural seagrass beds, flowering occurs primarily under lengthening day lengths and warming temperatures that follow winter minima, but inflorescences may occur at other times of the year if temperatures permit.
KEYWORDS: Texas; estuary; biology; seagrass; flora; physiology;

00906
McMillan, C. 1985. Staminate flowers and reproductive physiology of Halophila engelmanni. Contrib. Mar. Sci. 28:151-159.

ABSTRACT: Field observations and studies under controlled conditions at intervals from 1972 to 1985 indicate that the reproductive physiology of Halophila engelmanni Aschers., a common seagrass in the Gulf of Mexico, is primarily under temperature control. Staminate flowers that were observed for the first time in Redfish Bay, Texas, in 1972 were observed in late April to mid-June in subsequent years and produced in the laboratory at any time of the year under temperatures between 22 and 27.5 degree C and day lengths longer than 12-h. Pistillate flowers were more consistently produced over an extended period of time. Flowers were produced under the inductive temperatures and continuous light, as is also characteristic of other tropical seagrasses, indicating that temperature plays a major role in the phenological timing of reproductive activity of H. engelmanni.
KEYWORDS: Texas; estuary; biology; seagrass;

00907
McMillan, C. 1986. Fruits and seeds of Halophila engelmannii Hydrocharitaceae in Texas. Contrib. Mar. Sci. 29:1-8.

ABSTRACT: The fruits and seeds of Halophila engelmannii Aschers., a seagrass of the Gulf of Mexico, are reported from Texas and described for the first time. The globose to subglobose fruits, 3.0-5.5 mm in diameter, were commonly produced in May and floated frequently in beach drift in early June. The reticulate testa of the subspherical seeds, 1 mm in diameter, is similar to that reported in the other species, H. baillonis Aschers. ex Dickie, in Section Americanae.
KEYWORDS: Texas; biology; seagrass; flora;

00908

McMillan, C.; Sherrod, C.L. 1986. The chilling tolerance of black mangrove Avicennia germinans from the Gulf of Mexico coast of Texas, Louisiana, and Florida. Contrib. Mar. Sci. 29:9-16.

ABSTRACT: Seedling populations of Avicennia germinans (L.) from the Gulf of Mexico coast of Texas, Louisiana and Florida showed various amounts of physiological dysfunction and injury after exposure to chilling temperatures of 2-3.degree. C. Although all of the plants had greater chill tolerance than has been shown for plants of more tropical origin in the Gulf-Caribbean, those of Texas were more tolerant to extended chilling conditions than those of Louisiana and Florida. Populations from diverse sites in Texas from the northernmost distribution at Galveston Island to the Rio Grande were not strongly differentiated in chilling tolerances. The recurrent pattern of low winter temperature in the northern Gulf of Mexico has selected chilling tolerant populations, but those of the western side show the least physiological dysfunction and injury from chilling temperatures.
KEYWORDS: Texas; Louisiana; Florida; biology; mangrove; flora; physiology;

00909

Medlin, L.K. 1983. Community analysis of epiphytic diatoms from selected species of macroalgae collected along the Texas coast of the Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 165 p. (Diss. Abs. 45/01-B:40).

ABSTRACT: The epiphytic diatom community represents one of the least well known benthic diatom assemblages, especially in terms of species composition and seasonal variation. The present study investigated the epiphytic community structure associated with selected species of macroalgae along the Texas coast of the Gulf of Mexico using community composition statistics, multivariate analyses, and scanning electron microscopy. This study represents the first investigation of epiphytic diatoms from this area, as well as the first seasonal study of epiphytes over a two year period in the western hemisphere. Because it was a baseline study of this flora, questions as to which species were present, how they varied seasonally, and what variations could be correlated with environmental changes or with the host plant itself were addressed. Samples of host plants were collected at two month intervals from granite jetties at Galveston, Port Aransas, and Port Isabel, Texas. A wash, tip, and base preparation from each host plant was processed for statistical analyses. Community composition statistics revealed that the diatom assemblages washing off the host plants were statistically different from those attached to the host plant during the fall and spring. During the winter, the diatom assemblages associated with the host plant were more alike. The variation between the different species of host plants was greater than the variation between replicas of the same host plant, especially at Galveston and Port Aransas. There was a subtle seasonal change with ten taxa comprising 50-60% of the flora in the spring. The community gradually changed so that only three taxa were dominant in the winter. Multivariate analysis demonstrated that there was a continuum in the diatom community down the coast southward from Galveston to Port Isabel that could be weakly correlated with increasing salinity. A distinct change in abundance of epiphytes could be demonstrated among the host plants as branching increased. Abundance and diversity also increased distally from the tip of the host plant. The increased diversity of the wash often help mask the host-related differences in the attached assemblage. The microdistribution of the epiphytes as they relate to both host plant shape and increasing distance from the actively growing meristem was documented with the use of scanning electron microscopy.
KEYWORDS: Texas; coastal waters; biology; flora; ecology;

00910

Medlin, L.K. 1983. Community analysis of epiphytic diatoms from the Texas Gulf Coast. J. Phycol. 19(2)(suppl.):5.

ABSTRACT: The epiphytic diatom community represents one of the least well known benthic diatom assemblages, even on the commercially important Gulf Coast, and epiphytic (attached) diatoms have been collected at regular intervals from 1977 to 1979 from selected species of macroalgal host plants attached to granite jetties at Galveston, Port Aransas, and Port Isabel, TX. Marked zonation of epiphytes on the host plant is shown, along with significant differences between epiphytic and metaphytic (loosely associated) communities. Host specificity is related to growth habit of the macroalgae. Seasonality within the epiphytic community can be correlated with changing abiotic factors. The dominant diatom on this material, formerly called Rhoicosphenia adolfi, has not been recorded previously from the Gulf of Mexico. This community merits more attention because of the close interaction between host plant and epiphyte, and particularly because of renewed interest in fouling of offshore equipment. The epiphytic community forms a productive part of the economically important nearshore ecosystem.
KEYWORDS: Texas; coastal waters; biology; flora; ecology;

00911

Medlin, L.K. 1984. Short note on changes in the abundance and occurrence of six macroalgal species along the Texas coast of the Gulf of Mexico. Contrib. Mar. Sci. 27:85-91.

ABSTRACT: Changes in the abundance and occurrence of six macroalgae collected from the jetties and the bay systems near Galveston, Port Aransas, and Port Isabel, Texas are noted. Both vegetative and reproductive plants of Bryopsis pennata are reported from the Galveston jetty for the first time.
KEYWORDS: Texas; estuary; coastal waters; biology; flora;

00912

Meisburger, E.; Hulmes, L.J.; Hands, E.B.; Williams, S.J.; Everts, D.H.; Prins,D.A.; Hobson, R.D.; Finkelstein, K. 1980. Barrier island sedimentation studies program, p. 810-828. In Proceedings of the Coastal Zone '80 Conference. American Society of Civil Engineers, Hollywood, FL.

ABSTRACT: None
KEYWORDS: United States; barrier island; geology; erosion; physical; sediment transport; sedimentation;

00913

Melendez, C.; Rosas Torres, E.; Orta Nunez, R. 1985. Investigaciones conjuntas de camaron Mexico-EUA en el Golfo de Mexico. Programa de marcado recaptura de camaron en las costas de Tamaulipas Mexico de 1978 a 1981 (Joint Mexico-USA shrimp investigations in the Gulf of Mexico. Tagging programme-recovery of shrimps along the coasts of Tamaulipas, Mexico, from 1978 to 1981.). 4. Sess. of the WECAFC Working Party on Assessment of Marine Fishery Resources Paipa (Colombia) 29 Oct 1984, p. 111-125. In FAO Fish. Rep. 327 (suppl.). Western Central Atlantic Fishery Commission. National reports and selected papers presented at the fourth session of the working party on assessment of marine fishery resources, Paipa department of Boyaca, Colombia, 29 October-2 November 1984.

ABSTRACT: In 1977 an agreement on joint fishery research in the Gulf of Mexico was drawn up between Mexico and the USA. This included the conduct of a marking and recovery programme for shrimp, for the purpose of studying their migratory habits, distribution, growth, mortality, etc. Since 1978, 71,201 shrimps have been tagged along Mexico's coasts, at sea and in lagoons, and of these some 14.4% have been recovered. Along the USA coasts (Texas and Louisiana) 464,925 tagged shrimps have been released at sea and in lagoons and of these about 6% have been recovered. This document gives information on the joint research work carried out by the two countries, giving details of the method used for marking and recovering the shrimp.
KEYWORDS: Texas; Louisiana; Mexico; coastal waters; estuary; biology; fisheries; shrimp;

00914

Mendelssohn, I.A. 1981. Sand dune vegetation and stabilization in Louisiana. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: The sandy barriers that fringe the Louisiana deltaic plain are dynamic and ephemeral coastal features. In terms of development, management, and conservation, these landforms pose many problems unique to the Mississippi River deltaic environment. The abandonment of a major delta by the Mississippi River initiates the development of a Louisiana barrier system. Nearshore marine processes and subsidence become the dominant mechanisms of shoreline evolution. Marine processes erode the abandoned delta and concentrate a restricted quantity of coarse-grained sediments into highly mobile barrier islands, spits, and beaches which overlie unconsolidated delta silts and clays. Subsidence, due to the compaction of these unconsolidated sediments, in concert with a eustatic increase in sea level, generates a rapid apparent sea-level rise, equivalent to 1 m/100 yr. This combination of sea-level rise and limited coastal sand supply has produced the most serious barrier island erosion problem in the United States. The use of hard structures, such as groins, jetties, and seawalls to control or reduce barrier island erosion in Louisiana has met with limited success. The use of vegetation to stabilize substrates offers a sound alternative to the hard structure approach to erosion abatement. This paper introduces Louisiana's barrier dune vegetation and qualitatively describes the use of the vegetation for dune building and stabilization on Timbalier Island, Louisiana.
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; beach; geology; erosion; biology; flora;

00915

Mendelssohn, I.A.; et al. 1978. A potential indicator of the cumulative impact of sublethal stress in coastal plant communities. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: This study provides preliminary information indicating the suitability of adenylate composition and/or E.C. ratio, a measure of energy rich compounds, as a monitor of environmental stress in coastal plant communities. Positive correlations were obtained in some cases but additional testing is required.
KEYWORDS: Louisiana; beach; barrier island; biology; flora; physiology;

00916
Mendelssohn, I.A.; Jordan, J.W.; Talbot, F.; Starkovich, C.J. 1983. Dune building and vegetative stabilization in a sand deficient barrier island environment, p. 601-619. In Proceedings of the Third Symposium on Coastal and Ocean Management, June 1-4, 1983, San Diego, CA. American Society of Civil Engineers.

ABSTRACT: Critical components of Louisiana's coastal zone are the low-lying shore-parallel strips of land called barrier islands and beaches that protect the highly productive and fragile wetlands of the Mississippi River Delta. The combination of a relative sea-level rise, due to rapid local delta plain subsidence, and a limited coastal sand supply has produced in Louisiana the most serious barrier island erosion problem in the United States. Louisiana's barrier shoreline is experiencing erosion rates as high as 50 m/yr and land loss rates in excess of 65 ha/yr. Although offering a sound alternative to the hard structure approach to erosion abatement, the use of vegetation to stabilize barrier sands in Louisiana has received little attention. This paper reports on the first large scale dune building and stabilization project on the Louisiana barrier coast, a sand deficient environment. This dune building and stabilization project was located on an overwash channel at Timbalier Island. Of the three sand fencing designs tested straight sand fencing with perpendicular side spurs accumulated the most sand (4.2 m3/m of beach). Vegetation, without sand fencing, did not accumulate appreciable sand. Transplants of bitter panicum, Panicum amarum, had a survival rate of 73% after 15 months while sea oats, Uniola paniculata, and seashore paspalum, Paspalum vaginatum, survived at rates of 23 and 3% after 8 and 9 months, respectively. These initial results indicate that dune building and stabilization via sand fencing and vegetative plantings are possible in Louisiana's sand deficient coastal setting.
KEYWORDS: Louisiana; barrier island; beach; geology; biology; erosion; flora;

00917
Mendelssohn, I.A.; Penland, S.; Patrick, W.H. 1987. Barrier islands and beaches of the Louisiana delta plain. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; barrier island; beach; geology; erosion; sedimentation;

00918
Menzies, R.J.; Morgan, J.P.; Oppenheimer, C.H.; El-Sayed, S.Z.; Sharp, J.M. 1979. Design of the Offshore Ecology Investigation, p. 19-32. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; chemistry; geology; physical; oil and gas; environmental impact; Offshore Ecology Investigation;

00919
Merrell, W.J., Jr.; Morrison, J.M. 1981. On the circulation of the western Gulf of Mexico with observations from April 1978. J. Geophys. Res. 86(C5):4181-4185

ABSTRACT: In April 1978, the circulation pattern in the western Gulf of Mexico was dominated by a cyclonic circulation feature centered near 25o20'N, 95o20'W and an anticyclonic circulation feature centered near 23o30'N, 95o50'W. The N-S scales of both gyres are approximately 225 km, while the E-W scales are greater than 450 km. An eastward geostrophic transport of 29.7 x 10(6) m(3)/sec was found between the centers of the cyclone and the anticyclone. The authors believe that both the anticyclone and the cyclone migrated to the western gulf from the Loop Current region of the eastern gulf The anticyclone was probably supplemented by a wind-driven circulation as described by Blaha and Sturges, and an eastward extension of the wind- driven current which flows to the south along the lower Texas shelf may have intensified the cyclone and/or anticyclone. This extension of the Texas shelf current may tend to confine the anticyclone to the south and the cyclone to the north of the current's location.
KEYWORDS: Texas; Mexico; physical; current; Loop Current;

00920

Metz, S. 1986. Metal enrichment processes in the marine environment. Ph.D. dissertation. Florida Institute of Technology, Melbourne, FL. 157 p. (Diss. Abs. 47/06-B:2345).

ABSTRACT: This study discusses metal enrichment in oceanic sediments resulting from remobilization, scavenging, pollution and hydrothermal inputs in the Mississippi River-Gulf of Mexico and Mid-Atlantic Ridge at 26oN. Suspended particles collected from the Mississippi River during mean water and suspended-sediment discharge have metal concentrations which vary by <5% for Al, Cd, Cu, Fe, Pb and Zn and 10% for Mn. The massive sediment load carried by the Mississippi River is rapidly deposited on the Mississippi Delta in the Gulf of Mexico. Aluminum and Fe concentrations in Mississippi Delta sediments are similar to those of average Mississippi River suspended matter throughout the delta. In contrast, the Cu/Al ratio in surficial sediments (0-1 cm) decreases from 4.1 x 10(-4) for average suspended matter to 2.7 x 10(-4) about 45 km from the mouth of Southwest Pass. Copper lost from delta sediments can be traced to the deep Gulf of Mexico where concentrations average 50-70 (mu)g/g compared with 33 (mu)g/g for Mississippi River suspended matter. The observed increase in offshore sediments is linked to scavenging of Cu by particles. A similar scenario can be presented for Mn. Metal pollution in Mississippi Delta sediments is recorded for Pb and Cd. The influence of hydrothermal inputs on deep-sea sediments is recorded in a 120-cm core of metalliferous sediment recovered from the Mid-Atlantic Ridge (MAR) at 26oN, approximately 2 km NNE from a field of active black smokers. Sharp changes in carbonate concentrations throughout this sediment core present a sedimentary history of variable pelagic and hydrothermal inputs. For example, the upper 15 cm of the sediment column containing 16 to 63% CaCO(3) and 0.88 to 2.99% Al, is underlain by 30 cm of essentially pure hydrothermally-derived material (<3% CaCO(3), <0.50% Al). Vertical profiles for Cu, Fe and Pb in these MAR sediments show the same trends with highest values occurring in bands dominated by hydrothermally-derived material. A relationship between Cu and Zn indicates that high temperature venting (300-400oC) has predominated in the MAR area. The observed high values for Mn within the upper 5 cm of the core result from low temperature venting (<200oC) prior to sealing of an active vent. Observed V values in the core are most likely controlled by scavenging of V from seawater. On a carbonate-free basis, the Fe content of the MAR sediment core studied is consistent throughout averaging 39.4 (+OR-) 3.7%. Observed variations in the distributions of other metals most likely result from spatial and temporal differences in the composition and transport of vent solids.
KEYWORDS: Gulf of Mexico; Louisiana; continental shelf; continental slope; Mississippi River Delta; chemistry; trace metal; sediment;

00921

Metzbower, H.T.; Curry, S.S.; Godshall, F.A. 1980. Handbook of the marine environment: Bryan Mound. U.S. Department of Commerce, Environmental Data and Information Service. NOAA Report No. S/T 80-14.

ABSTRACT: The climatology and physical oceanographic characteristics of the Bryan Mound offshore study region, available from published sources, were summarized. This report also contained results of waste brine disposal modeling.
KEYWORDS: Gulf of Mexico; physical; continental shelf; Strategic Petroleum Reserve; meteorology;

00922

Meyer, A.W. 1986. Explanatory notes - Deep Sea Drilling Project leg-96, Mississippi Fan, Gulf of Mexico, p. 3-13. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; Deep Sea Drilling Project;

00923

Meyers, C.E.; Wagner, N.K. 1980. Coastal wind power in and near Corpus Christi, Texas, p. 220-226. In Proceedings, Second Conference on Coastal Meteorology, Los Angeles, CA, 30 Jan 1980. Am. Meteor. Soc., Boston, MA.

ABSTRACT: Long-term wind data from several onshore and offshore sites has been supplemented with shorter wind records from an oil platform in the Gulf of Mexico and a gas platform in Corpus Christi Bay. The derived means and variances obtained from a fitted Wiebull distribution characterize the sample means and variances extremely well at all locations. Highest average wind speeds are found during the spring and winter with lowest observed during the summer and fall. Inland stations have maximum speeds during the afternoon, while coastal and offshore locations frequently have a nighttime wind maximum. The wind speed right at the coastline appears to be less than the speed a few miles either side of the coastline during both the daytime and nighttime. Power output characteristics of a 40 Kw, 100 Kw and 1000 Kw wind energy conversion system are utilized to obtain expected energy production. Results indicate that the 100 Kw unit is much more efficient than the other two for an operating hub height of 30 m. Properly sited aerogenerators could provide a significant portion of the power demand in this geographical region.
KEYWORDS: Texas; continental shelf; physical; meteorology; petroleum platform;

00924
Middleditch, B.S. 1980. Environmental assessment of Buccaneer Gas and Oil Field in the northwestern Gulf of Mexico, 1975-1980. Volume V. Hydrocarbons, biocides and sulfur. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-51. 106 p. NTIS order No. PB81-178451.

ABSTRACT: This report describes studies of the hydrocarbons, biocides, sulfur, and related substances discharged from structures in the Buccaneer Gas and Oil Field, their distribution and fates in the surrounding environment, and the assessment of their ecological effects. More than 120 substances have been identified in produced water discharges from the production platforms, however the major pool of contaminants in the region of the Buccaneer Field is in the surficial sediments. They contain concentrations as high as 50 ppm of 'fresh' petroleum alkanes, and concentration gradients are clearly seen.
KEYWORDS: Texas; continental shelf; oil and gas; biology; chemistry; hydrocarbon; sulfur; plankton; benthos; sediment; environmental impact; Buccaneer Field;

00925
Middleditch, B.S. 1981. Biocides, p. 55-57. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; biology; chemistry; environmental impact; Buccaneer Field;

00926
Middleditch, B.S. 1981. Hydrocarbons and sulfur, p. 15-54. In B.S. Middleditch [ed.], Environmental effects of offshore oil production. The Buccaneer Gas and Oil Field Study. Plenum Press, New York.

ABSTRACT: A detailed study of the Buccaneer Gas and Oil Field was preceded by a pilot study conducted by scientists from Texas A&M University. One of the conclusions of the pilot study was that there was sufficient evidence for petroleum hydrocarbons in the environment in the vicinity of the Buccaneer Field to warrant inclusion of a hydrocarbon study in the main project (Giam, 1976). Contracts awarded to the University of Houston enabled it to perform the hydrocarbon study during all four years of the project (1976-1980). All of these findings are described in detail.
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; sulfur; environmental impact; Buccaneer Field;

00927
Middleditch, B.S. [ed.]. 1981. Environmental effects of offshore oil production. The Buccaneer Gas and Oil Field Study. Plenum Press, New York. 446 p.

ABSTRACT: The Buccaneer Gas and Oil Field Study was a comprehensive, interdisciplinary ecological study of an offshore oil field operating under normal conditions. The study focused on the effects of the oil field structures and on low-level chronic exposure of organisms to various discharges from the production platforms. Chapters in the book include the following: Hydrocarbons and sulfur; Biocides; Sedimentology and geochemistry of recent sediments; Surficial sediments and suspended particulate matter; Total organic carbon and carbon isotopes of sediments; Distribution and abundance of macrobenthic and meiobenthic organisms; Observations on the effects of oil field structures on their biotic environment; The effect of structures on migratory and local marine birds; Bacterial community composition and activity; Effects on artificial reef, demersal fish, and macrocrustacean communities; Acute toxicity and aquatic hazard associated with discharged formation water; Environmental synthesis using an ecosystem model; Currents and hydrography of the Buccaneer Field and adjacent waters; Hydrodynamic modeling of discharges; and Transport and dispersion of potential contaminants.
KEYWORDS: Texas; continental shelf; oil and gas; biology; chemistry; geology; physical; environmental impact; hydrocarbon; benthos; Buccaneer Field;

00928
Middleditch, B.S. 1984. Ecological effects of produced water discharges from offshore oil and gas production platforms. Report to American Petroleum Institute, Washington, DC. API Project No. 248. 160 p.

ABSTRACT: The literature pertaining to the composition of produced waters and the fates and effects of these effluents in the marine environment are reviewed. Discussions of lethal and sublethal effects are complemented by considerations of data relating to crude oils, petroleum products, and individual constituents of produced waters.
KEYWORDS: oil and gas; biology; ecology; chemistry; hydrocarbon; trace metal; petroleum platform; environmental impact; water quality;

00929
Middleditch, B.S.; Basile, B. 1978. Alkanes in surficial sediments from the region of the Buccaneer oil field. J. Chromatography 158:449-463.

ABSTRACT: Surficial sediment samples collected from below the production platforms in the Buccaneer oil field contain up to 25 ppm of petroleum alkanes. On one occasion, concentration gradients of fresh oil were observed below both platforms, extending at least 75 ft (23 m) from the platforms. On another occasion, the oil was more weathered and dispersed. There was no clear evidence for similar profiles in the vicinity of a well jacket structure, and alkanes in sediment samples collected at distances of 0.7 to 11.0 km from the platforms were mostly of recent biogenic origin.
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; sediment; environmental impact; Buccaneer Field;

00930
Middleditch, B.S.; Basile, B. 1980. Discharge of elemental sulfur and its distribution in surficial sediments in the region of the Buccaneer oil field. J. Chromatogr. 199:161-169.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; sediment; sulfur; Buccaneer Field;

00931
Middleditch, B.S.; Basile, B.; Chang, E.S. 1977. Environmental effects of offshore oil production: alkanes in the region of the Buccaneer oil field. J. Chromatography 142:777-785.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; environmental impact; Buccaneer Field;

00932
Middleditch, B.S.; Basile, B.; Chang, E.S. 1978. Discharge of alkanes during offshore oil production in the Buccaneer oil field. Bull. Environ. Contam. Toxicol. 20:59-65.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; environmental impact; Buccaneer Field;

00933
Middleditch, B.S.; Basile, B.; Chang, E.S. 1979. Alkanes in seawater in the vicinity of the Buccaneer oil field. Bull. Environ. Contam. Toxicol. 21:413-420.

ABSTRACT: As part of an interdisciplinary study performed under the aegis of the National Marine Fisheries Service, we are investigating the distribution of petroleum hydrocarbons in the vicinity of the Buccaneer oilfield, and isolated oilfield in the northwestern Gulf of Mexico that has experienced only a few minor spills in the 15 years of its existence. The mean rate of discharge of petroleum alkanes from each of two production platforms in the oilfield is less than 200 g/day. We now present data for hydrocarbons in seawater. A total of 76 samples were collected at locations up to 20 km from the center of the oilfield between June 1976 and March 1977. Alkanes were extracted from the water samples by shaking with cyclohexane and were separated from other hydrocarbons by chromatography on silica gel. Quantitation was by gas chromatography (GC), while combined gas chromatography - mass spectrometry (GC-MS) was used to verify the identities of individual components of about 10% of the samples.
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; environmental impact; Buccaneer Field;

00934
Middleditch, B.S.; Chang, E.S.; Basile, B. 1979. Alkanes in barnacles (Balanus tintinnabulum) from the Buccaneer oil field. Bull. Environ. Contam. Toxicol. 24:6-12.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; environmental impact; Buccaneer Field;

00935
Middleditch, B.S.; Chang, E.S.; Basile, B. 1979. Alkanes in plankton from the Buccaneer oilfield. Bull. Environ. Contam. Toxicol. 21:421-427.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; plankton; environmental impact; Buccaneer Field;

00936

Middleditch, B.S.; Chang, E.S.; Basile, B.; Missler, S.R. 1979. Alkanes in fish from the Buccaneer oil field. Bull. Environ. Contam. Toxicol. 22:249-257.

ABSTRACT: Twenty five species of fish were analyzed to determine whether they contained alkanes from production platforms in the Buccaneer oil field. Flesh samples, including subcutaneous fat, were taken from each species, and liver samples from the larger species were also analyzed.
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; fish; environmental impact; Buccaneer Field;

00937

Milan, C.S.; Whelan, T. 1979. Accumulation of petroleum hydrocarbons in a salt marsh ecosystem exposed to steady state oil input. In J.W. Day, Jr., D.D. Culley, Jr., R.E. Turner, and A.J. Mumphrey, Jr. [ed.], Proceedings, Third Coastal Marsh and Estuary Management Symposium. Louisiana State Univ. Div. Contin. Educ., Baton Rouge, LA.

ABSTRACT: Various biological components of a salt marsh ecosystem were examined for petroleum hydrocarbon accumulation. Two control sites from assumed pristine areas were compared to a site that has been exposed to steady state oil input for 45 years. Three components of crude oil were considered: saturated alkanes, cycloalkanes, and aromatics. Cycloalkanes and aromatics were found to be better indicators of oil accumulation than the n-alkanes. Benthic organisms, oysters and mussels, demonstrated the greatest enrichment of petroleum hydrocarbons, while the free-swimming fishes demonstrated the least petroleum enrichment. A scheme for the fate of spilled petroleum in an estuarine environment is proposed. The discharged oil is first adsorbed to subaerial marsh vegetation. Subsequent formation of petroleum containing detritus appears to be the major transport mechanism of petroleum into the ecosystem. A fluorescence technique is also proposed, whereby the analysis of the aromatic content of benthic organisms can be used for baseline data and follow-up studies after spills.
KEYWORDS: Texas; Louisiana; marsh; biology; oil and gas; oil spill; hydrocarbon; environmental impact;

00938

Miller, C.L.; Nichols, J.P. 1985. Economics of harvesting and market potential for the Texas blue crab industry. Texas A&M University, College Station, TX. Dept. of Agricultural Economics. Rep. No. TAMU-SG-86-201. 132 p. NTIS order No. PB86-110962/XAB.

ABSTRACT: Within the Gulf of Mexico region Texas ranks third in blue crab production. The first purpose of this study is to describe the Texas blue crab industry. The second major objective of the study is to identify market development opportunities within Texas and the surrounding region.
KEYWORDS: Texas; fisheries; socioeconomics; blue crab;

00939

Miller, J.M.; Dunn, M.L. 1980. Feeding strategies and patterns of movement in juvenile estuarine fishes, p. 437-448. In V.S. Kennedy [ed.], Estuarine perspectives. Academic Press, New York.

ABSTRACT: Juvenile fishes in estuaries are trophic generalists; there is little evidence of their dependence on specific prey populations. The energetic costs of obtaining food are unknown since food habit data are rarely coupled with prey availability data, but it appears that locating prey may be more important than prey abundance. Cues for locating prey may be either prey abundance or environmental correlates of prey abundance. Juvenile fish may respond to the environmental rigors of the estuary by 1) increased breadth of tolerance limits or 2) inter- or intra-habitat movements. In hopes of encouraging the development of a data base on juvenile estuarine fishes, the authors list critical research needs.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; estuary; biology; coastal waters; ecology; fish;

00940
Milliken, K.L. 1985. Petrology and burial diagenesis of plio-Pleistocene sediments, northern Gulf of Mexico. Ph.D. dissertation. The University of Texas at Austin. 130 p. (Diss. Abs. 46/10-B:3371).

ABSTRACT: Plio-Pleistocene sediments and rocks beneath the Louisiana and adjacent Texas shelves are the youngest of several thick packages of terrigenous sediment which prograded into the Gulf of Mexico during the Cenozoic. Comparison of diagenesis in these young sediments (more than 300 samples from 45 wells on the Louisiana-Texas shelf) to diagenesis of older Cenozoic rocks at similar burial depths elsewhere along the Gulf margin confirms that diagenesis is not strictly analogous among the various Cenozoic units. There has been an evolution of diagenesis during filling of the Gulf of Mexico. Differences in diagenesis cannot be attributed to differences in bulk mineralogy of the sands because Plio-Pleistocene sands are lithic arkoses and feldspathic litharenites with essentially the same QFR proportions as observed in subsurface Eocene and Oligocene sandstones along the Texas coast. Unaltered plagioclase is slightly more calcic (average An 24) than unaltered plagioclase in the older rocks. Burial diagenesis in Plio-Pleistocene sediments has involved essentially the same processes as observed in the older rocks, but overall, diagenesis has advanced to a lesser degree at any given depth. Cementation by quartz and carbonate, dissolution of potassium feldspar and heavy minerals, albitization of plagioclase, and the transformation of smectite to illite have occurred in Plio-Pleistocene sediments, but cements and altered grains are not volumetrically significantly shallower than 4 to 4.5 km. The temperature at which reaction of detrital constituents begins (approximately 90oC) is similar to that observed elsewhere in the Gulf, but the zone of reaction is spread over a greater depth range. The similar temperatures observed for the advent of detrital reactions across the Gulf basin suggest that these processes are more highly dependent upon temperature than upon time and that differences observed among the various units may be attributed, at least in part, to variations in the geothermal gradient. The degree of detrital grain alteration observed in these young sediments shows that significant loss of provenance information occurs quite early in the burial history. Alteration in the deep subsurface is very effective in modifying the primary detrital assemblage.
KEYWORDS: Texas; Louisiana; continental shelf; oil and gas; geology; mineralogy; diagenesis; sediment;

00941
Minello, T.J. 1979. The ecological separation of 2 similar marine calanoid copepods in the coastal waters of the northwestern Gulf of Mexico. Am. Zool. 19 (3):964. (Abstract only).

ABSTRACT: None
KEYWORDS: Texas; biology; ecology; plankton;

00942

Minello, T.J. 1980. The neritic zooplankton of the northwestern Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 259 p. (Diss. Abs. 41/04-B:1227).

ABSTRACT: Copepod species and major groups of zooplankton were identified from 513 samples taken at 20 stations on 5 transects in the coastal waters of the northwestern Gulf of Mexico. Monthly samples, using oblique tows and a GULF V sampler (approximately 200 (mu)m mesh size), were taken over a 3-year period from 1963 to 1965. The bottom depths of the sampling stations ranged from 8 to 73 m. Temporal and spatial distributional patterns were examined in detail for major groups of zooplankton and common species of calanoid and cyclopoid copepods. The relationships between the densities of these groups and various physical and chemical factors were also examined. Total zooplankton densities averaged over the entire sampling area peaked in April and September. The highest mean densities occurred in April (2870 organisms/m(3)) and the lowest densities occurred in February (1124/m(3)). Mean zooplankton densities decreased from 3412 organisms/m(3) at the 8 m stations of 1131/m(3) at the 73 m stations. The greatest mean densities occurred in 1964. The dominant groups of zooplankton, determined by their average densities in the sampling area, were the copepods (61% of total zooplankton), larvaceans (7.7%), bivalve larvae (5.5), ostracods (Euconchoecia) (4.7%), and gastropod larvae (3.6%). All groups had density peaks in the spring although peaks also occurred during other seasons. Densities of al groups except the ostracods appeared to decrease with the bottom depth of the station. In general, the densities of the major groups of zooplankton showed little relationship with surface temperature, surface salinity, or the other physical factors examined. Since the copepods dominated the zooplankton at all depths and times of the year, these organisms were identified to species and examined in greater detail. Overall, adult females were present in similar densities as immature forms (copepodids). The percentage of adult males generally remained around 15 to 20% of the copepods. Calanoid and cyclopoid copepods were abundant and harpacticoids were relatively rare. A total of 134 species of adult female calanoid and cyclopoid copepods were identified. The dominant species, ranked in the order of their abundance based on mean densities over the entire sampling area, were Paracalanus indicus, Acartia tonsa, Paracalanus quasimodo, Paracalanus crassirostris, Clausocalanus furcatus, Oncaea media, Oithona nana, Oithona plumifera, Temora turbinata and Oncaea venusta. These ten species made up over 77% of the adult female copepods. When the temporal and spatial distributions of the abundant species were examined, the effect of bottom depth and month were frequently significant. Changes in density often appeared to be significantly related to surface temperature and surface salinity. Other physical variables, including runoff, were rarely significant in regression models. The mean number of species of adult female copepods increased with the bottom depth of the station reaching a maximum of 51 at the 73 m stations in January. A species by species correlation matrix for 25 abundant species was used as a basis for graphically determining species clusters in the sampling area. This analysis revealed a distinct offshore group with many marginally linked members, an intermediate depth group, and an inshore group. These species groups were similar to groups reported in other studies on copepods from the coastal waters off Texas and the southeastern United States. Since interspecific competition might be important in determining the distributions of closely related species, the temporal and spatial distributional patterns of common congeneric copepods were examined. Most congeners appeared to be distinctly separated by their sizes, distribution with station bottom depth, or by their temporal distributions. Apparent exceptions were seen in two common congeneric herbivorous species (Paracalanus indicus and P. quasimodo) which appeared to be separated vertically in the water column and in two carnivorous genera of cyclopoids. The lack of separation in these cyclopoid genera may be related to their predatory feeding habit.
KEYWORDS: Texas; coastal waters; continental shelf; biology; plankton; ecology;

00943

Minello, T.J.; Matthews, G.A. 1981. Variability of zooplankton tows in a shallow estuary. Contrib. Mar. Sci. 24:81-92.

ABSTRACT: Short-term variability in the zooplankton of a shallow estuary with minimal tidal fluctuations in the northwestern Gulf of Mexico was examined at one station on April 13 through 15, 1976. Densities were estimated from three replicate oblique tows taken every four hours over the 44-hour study period. Counting and subsampling error was not significant compared with replicate tow variability, and replicate tow variability was small compared with the variability among sampling times. Overall densities were large during the night compared to the day and the greatest variability in replicate tows occurred during both sunrise sampling times.
KEYWORDS: Texas; estuary; biology; plankton;

00944

Minerals Management Service. 1983. Draft environmental impact statement, Gulf of Mexico proposed OCS oil and gas lease offerings central Gulf of Mexico (April, 1984), western Gulf of Mexico (July, 1984). Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 357 p.

ABSTRACT: None
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; continental shelf; archaeology; biology; chemistry; geology; physical; socioeconomics; oil and gas; environmental impact;

00945
Minerals Management Service. 1983. Final regional environmental impact statement - Gulf of Mexico, Volume 1. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 527 p.

ABSTRACT: This document discusses the purpose and background of the proposed actions, the alternatives, including the proposed actions, the description of the affected environment, and the environmental impacts of the proposed central Gulf of Mexico Sale 72, Western Gulf of Mexico Sale 74, and Eastern Gulf of Mexico Sale 79.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; continental shelf; archaeology; biology; chemistry; geology; physical; socioeconomics; oil and gas; environmental impact;

00946
Minerals Management Service. 1983. Final regional environmental impact statement - Gulf of Mexico. Volume 2. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; continental shelf; archaeology; biology; chemistry; geology; physical; socioeconomics; oil and gas; environmental impact;

00947
Minerals Management Service. 1983. Mineral revenues: The 1982 report on receipts from federal and Indian leases, with summary data from 1920 to 1982. U.S. Government Printing Office, Washington, DC. 68 p.

ABSTRACT: This document is prepared by the Royalty Management Program of the Minerals Management Service as a summary report presenting data on the mineral leasing revenues generated from Federally owned offshore and onshore lands and Indian tribal lands and allotments. The royalties collected in 1982 totaled $9.3 billion for the entire United States. Offshore Louisiana revenues contributed nearly $3.2 billion.
KEYWORDS: United States; Gulf of Mexico; Louisiana; continental shelf; oil and gas; socioeconomics;

00948
Minerals Management Service. 1983. Quarterly report - January - February - March - 1983. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 69 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; continental shelf;

00949
Minerals Management Service. 1983. Quarterly report - October - November - December - 1983. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 76 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; continental shelf;

00950
Minerals Management Service. 1983. Regional environmental assessment -- Gulf of Mexico pipeline activities. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA.

ABSTRACT: Pipeline construction, operation, and maintenance on the OCS causes minimal impacts to onshore air quality. Water quality may be adversely affected by suspension of sediment during construction or trenching operations; such impacts are localized and of short duration, however. Animal and plant life may be adversely affected by the physical disturbance and turbidity, but the nonburied pipelines furnish a substrate for encrusting organisms and result in increased diversity in the biological community in the vicinity of the pipelines. Impacts on shipping and navigation through collisions are negligible due to the low number of vessels involved in pipeline construction. Some 25 acres per mile of seafloor are involved in pipeline rights-of-way, although only a small portion of that acreage is physically disturbed by pipeline emplacement. At present, pipelines do cause a significant adverse impact on other commercial fisheries. Cultural resources on the OCS could be impacted by physical disturbance caused by anchoring, pipeline construction, or jetting. These potential impacts are mitigated through the requirement of pre-lay surveys. Although most breaks in offshore pipelines have resulted in only minimal amounts of oil spilled, eight pipeline breaks since 1964 have resulted in spills greater than 1,000 bbl. To date, no major spill from OCS pipelines in the Gulf has resulted in catastrophic short-term environmental degradation. Impacts of pipeline emplacement on coastal habitats include destruction of vegetation and sessile and slow-moving animals, habitat alteration, changes in salinity and hydrologic regimes, and increased marsh soil erosion resulting in coastal land loss. Up to 25 acres of seagrass beds, marshes, and swamp and bottomland forests could be destroyed for each mile of pipeline installed. Oil spilled from leaking or ruptured pipelines can cause severe and possibly long-term adverse impacts on coastal flora and fauna. Seagrass beds and coastal marshes are especially susceptible to adverse impacts from spilled oil.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; oil and gas; dredging; environmental impact; oil spill; pipeline;

00951
Minerals Management Service. 1984. Draft environmental impact statement - proposed oil and gas lease sales 94, 98, and 102. Gulf of Mexico region. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 512 p.

ABSTRACT: This document discusses the purpose and background of the proposed actions, the alternatives including the proposed actions, the description of the affected environment, and the environmental impacts of the proposed Central Gulf of Mexico Sale 98 (May 1985), Western Gulf of Mexico Sale 102 (July 1985), and Eastern Gulf of Mexico Sale 94 (November 1985).
KEYWORDS: Gulf of Mexico; biology; chemistry; environmental impact; geology; continental shelf; physical; socioeconomics; oil and gas;

00952
Minerals Management Service. 1984. Environmental assessment for geological and geophysical exploration activities on the outer continental shelf. Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. OCS Rep. MMS 84-0051. 67 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; oil and gas; geology; environmental impact;

00953
Minerals Management Service. 1984. Quarterly report - January - February - March - 1984. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 77 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; continental shelf;

00954
Minerals Management Service. 1984. Recap of bids for OCS sale 81 and related information. Minerals Management Service, Gulf of Mexico Regional Office, Metairie, LA. 95 p.

ABSTRACT: This is a compilation of bids for OCS lease from OCS sale 81 held on April 24, 1984. Information presented includes the amount offered on each tract, the company name and whether the bid was accepted.
KEYWORDS: Gulf of Mexico; continental shelf; socioeconomics; oil and gas;

00955
Minerals Management Service. 1987. Programmatic environmental assessment: structure removal activities, central and western Gulf of Mexico planning areas. Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. OCS EIS/EA MMS 87-0002.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; petroleum platform; environmental impact;

00956

Minnery, G.A. 1984. Distribution, growth rates, and diagenesis of coralline algal structures on the Flower Garden Banks, northwestern Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 193 p. (Diss. Abs. 45/10-B:3142).

ABSTRACT: The East and West Flower Garden Banks are located in the northwestern Gulf of Mexico, approximately 190 km SSE of Galveston, Texas. These bathymetric highs are surface expressions of salt domes, and are two of the many offshore banks that have been extensively examined by Texas A&M University oceanographers during the past ten years. Although the crests of the East and West Flower Gardens are capped by living coral reefs with 18 species of hermatypic corals (20-50 m depths), crustose coralline algae are the primary framework builders and sediment contributors below 50 m. A depth zonation spanning 20-90 meters has been established on the banks and slopes using eleven genera of corallines (Lithothamnium, Mesophyllum, Melobesia, Archaeolithothamnium, Lithophyllum, Tenarea, Hydrolithon, Porolithon, Paraqoniolithon, Lithoporella, and Fosliella), one squamariacean (Peyssonnelia spp.), and an encrusting foraminifer (Gypsina plana). On the upper coral reefs, the most common coralline algae genera are Hydrolithon, Lithoporella, Lithophyllum, Paraqoniolithon, and Porolithon. On the flanks of the East Flower Gardens, coralline algae have stabilized ridges of coral debris at 30-35 m depths. These Madracis-algal ridges also support a lush growth of leafy brown algae owing to the absence of intensive grazing, which is typical of the main coral reefs. Between depths of 50-75 m, vast fields of coralline algal nodules, ranging in size from 1-20 cm, cover 60-90% of the bottom. There is a general increase in nodule size with depth. The algal nodule zone can be roughly divided into upper and lower units on the basis of coralline taxonomic composition and the internal structural morphology of the nodules. Nodules decrease in abundance below 75-80 m, and laterally extensive coralline algal pavements and rigid, 1-2 m high algal reefs become the dominant structures. Lithothamnium, Tenarea, and Peyssonnelia are the primary framework builders between 75-90 m. Although constructional void space in the algal reefs is high, most of these cavities have been occluded by micritic high-Mg calcite, the most common cement in algal reefs and nodules. Aragonite cement is also common, especially as spherulites and botryoidal aggregates in coral-line conceptacle voids. The internal morphology and taxonomic composition distinguishes these deep water algal reefs from shallow water algal ridges and cup reefs described by previous authors. (abstract truncated).
KEYWORDS: Texas; continental shelf; Flower Garden Banks; reef; biology; flora;

00957

Moffett, A.W.; McEachron, L.W.; Key, J.G. 1979. Biology of sand sea trout Cynoscion arenarius in Galveston Bay and Trinity Bay Texas. Contrib. Mar. Sci. 22:163-172.

ABSTRACT: Sand seatrout (C. arenarius) is of commercial and recreational importance to the Gulf states. Spawning behavior, feeding habits, length-weight relationships and standard length-total length relationships were determined for 498 sand seatrout collected between May 1966-March 1968 from Galveston and Trinity Bays, Texas and from the Gulf of Mexico near Galveston Island. Sand seatrout distribution, gonadal development and the time young-of-the-year appeared in estuaries indicated that this species spawns near Gulf-to-bay passes in the Gulf of Mexico between March and Aug. with a spawning peak during spring. Fish and crustaceans dominated the diet of sand seatrout, crustaceans occurred more frequently in fish < 160 mm SL [standard length] and fish predominated in those > 160 mm SL. The length-weight regressions derived from 267 sand seatrout 125-375 mm SL differed between sexes. The standard length-total length relationship was given.
KEYWORDS: Texas; Galveston Bay; Trinity Bay; estuary; biology; fish; fisheries; seatrout;

00958

Molinari, R.L.; Behringer, D.W.; Festa, J.F. 1976. A numerical modelling and observational effort to develop the capability to predict the currents in the Gulf of Mexico for use in pollutant trajectory computation. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. 08550-IA5-26. 145 p. + app.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; current; model; Loop Current;

00959

Monaghan, P.H.; McAuliffe, C.D.; Weiss, F.T. 1980. Environmental aspects of drilling muds and cuttings from oil and gas operations in offshore and coastal waters, p. 413-432. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; oil and gas; chemistry; biology; drilling fluid; cuttings; environmental impact;

00960
Montalvo, J.G., Jr.; Brady, D.V. 1979. Concentrations of Hg, Pb, Zn, Cd and As in Timbalier Bay and the Louisiana oil patch, p. 235-243. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; chemistry; oil and gas; trace metal; sediment; environmental impact; Offshore Ecology Investigation;

00961
Monteferrante, F.J.; Mendelssohn, I.A.; Hester, M.W. 1982. Vegetation investigations for the management of barrier islands and beaches in Louisiana. In Proceedings of the Coastal Society 8.

ABSTRACT: This report discusses the results of a five-part study as follows: 1) Descriptive investigations of barrier island vegetation were performed by establishing ten transect profiles at various points along the coast. These transects, perpendicular to the long axis of the island, traversed the island or beach. The vegetation was described using a modified Braun - Blanquet phytosociological scale. Elevations were surveyed along each transect. 2) A fertilization study was undertaken in a homogeneous swale community by periodic applications of measured amounts of N, P, K contaminations on one meter square plots. 3) An investigation of the ecology and discontinuous distribution of sea oats (Uniola paniculata) was undertaken. This involved a field study of population growth as well as greenhouse experiments to determine the factors important in controlling the distribution of this plant. 4) In addition, the response and adaptations of four dune and swale plant species to water stress were intensely investigated. This included a one year monthly field study, as well as greenhouse drought stress experiments, and an investigation of root distribution in the dune soil profile. 5) A dune building and stabilization project was undertaken on Timbalier Island in conjunction with Texaco Oil Co., and the U.S. Soil Conservation Service. This involved a mixed planting of three species, bitter panicum (Panicum amarum), sea oats (Uniola paniculata), and seaside paspalum (Paspalum vaginatum). Plantings were done in combination with various sand fencing configurations. Rates of sand accretion, as well as percent survival, were measured.
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; beach; geology; erosion; biology; flora;

00962
Montz, G.N. 1976. Vegetational studies conducted in Atchafalaya Bay, Louisiana. U.S. Army Corps of Engineers, New Orleans District, New Orleans, LA. 37 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Atchafalaya Bay; biology; dredging; flora;

00963
Montz, G.N. 1977. A vegetational study conducted along Southwest Pass in the Mississippi River delta, Louisiana. U.S. Army Corps of Engineers, New Orleans District, New Orleans, LA. File Mem. 12 p.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; Southwest Pass; marsh; biology; flora; dredging;

00964
Montz, G.N. 1978. Vegetational characteristics of the Atchafalaya River Delta. Proc. Louisiana. Acad. Sci. 41:71-84.

ABSTRACT: None
KEYWORDS: Louisiana; Atchafalaya River Delta; biology; flora;

00965
Montz, G.N. 1980. Distribution of selected aquatic plant species in Louisiana. Proc. Louisiana. Acad. Sci. 43:119-138.

ABSTRACT: None
KEYWORDS: Louisiana; biology; flora; taxonomy;

00966
Montz, G.N. 1981. Annotated checklist of the plants of the Atchafalaya and Mississippi River deltas. U.S. Army Corps of Engineers, New Orleans District, New Orleans, LA. Final Rep. 1-35.

ABSTRACT: None
KEYWORDS: Louisiana; Atchafalaya River Delta; Mississippi River Delta; biology; flora; taxonomy; ecology;

00967
Montz, G.N. 1981. Annotated checklist of plants on the coastal beaches, islands and barrier islands of Louisiana. U.S. Army Corps of Engineers, New Orleans District, New Orleans, LA. 43 p.

ABSTRACT: None
KEYWORDS: Louisiana; barrier island; beach; biology; flora; taxonomy; ecology;

00968
Moore, D.; Brusher, H.A.; Trent, L. 1970. Relative abundance, seasonal distribution and species composition of demersal fishes off Louisiana and Texas, 1962-1964. Contrib. Mar. Sci. 15:45-70.

ABSTRACT: None
KEYWORDS: Louisiana; Texas; coastal waters; biology; fisheries; fishery statistics;

00969
Moore, G.T. 1970. Role of salt wedge in bar-finger sand and delta development. Am. Assoc. Pet. Geol. Bull. 54:326-333.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; geology; sediment transport; sedimentation;

00970
Moore, G.T. 1973. Submarine current measurements, northwest Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 23:245-255.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; current;

00971
Moore, G.T. 1978. Mississippi Fan, Gulf of Mexico. In American Association of Petroleum Geologists 63rd Annual Meeting/Society of Economic Paleontologists and Mineralogists 52nd Annual Meeting, Oklahoma City, Oklahoma, 9-12 Apr 1978. American Association of Petroleum Geologists; Society of Economic Paleontologists and Mineralogists.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology;

00972
Morgan, J.P. 1963. Louisiana's changing shoreline. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Technical Rep. No. 16, Part D:66-78.

ABSTRACT: An evaluation of the Louisiana shoreline reveals several physical differences from most of the remainder of the continental United States. First, we have a relatively low lunar tidal range of 18 inches or less but the area is subject to wind and storm tides which occasionally attain heights of several feet. The terrain bordering the coast is low and exceptionally flat. This is not unduly affected by normal waves and tides, but storms can cause tidal inundation miles inland from the normal high tide shoreline. In addition, the coastal region is composed of soft, organic silts and clays readily subject to wave attack and erosion by storm tides. In contrast, the coast of New England, for example, has a tidal range of 12 to 18 feet and more common, though not more violent, storms. However, the New England coastline consists predominantly of rocky cliffs against which high tides and storm waves can beat for generations without appreciable modification.
KEYWORDS: Louisiana; barrier island; beach; geology; erosion;

00973
Morgan, J.P. 1976. Louisiana deltaic geology. In Louisiana delta plain and its salt domes: guidebook for AAPG/SEPM annual convention, May 24-26, 1976, New Orleans. New Orleans Geological Society. 17 p.

ABSTRACT: Morgan outlines the chronology of the evolution of the Mississippi River delta. The report presents the aerial extent and time ranges for each of seven deltaic complexes through the 7,000 year history of the delta.
KEYWORDS: Louisiana; Mississippi River Delta; geology; geologic history; diapir;

00974
Morgan, J.P. 1979. Recent geological history of the Timbalier Bay area and adjacent continental shelf, p. 575-589. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; geology; geologic history; Offshore Ecology Investigation;

00975
Morgan, J.P.; Coleman, J.M.; Gagliano, S.M. 1963. Mudlumps at the mouth of South Pass, Mississippi River; sedimentology, paleontology, structure, origin, and relation to deltaic processes. Louisiana State University Press, Coastal Studies Series No. 10.

ABSTRACT: This report is compiled in five parts. The first section is a description of mudlumps and mudlump development derived from observation and from a study of all available maps, charts and literature on South Pass. The second section deals with field work at South Pass, primarily the drilling and core recovery program. The third part of the report covers laboratory work and analysis of the cores taken in the South Pass vicinity. An attempt will be made to maintain a completely factual approach in the three sections of the report and to retain all interpretations of the factual data for the fourth section. The fifth and last section of the report consists of a series of Appendices including tabular listings of source material and other factual data, laboratory test results, and detailed descriptions of some of the testing and sediment analyzing techniques.
KEYWORDS: Louisiana; Mississippi River; South Pass; coastal waters; geology; sediment; sedimentation;

00976
Morton, R.A. 1982. Effects of coastal structures on shoreline stabilization and land loss -- the Texas experience. In D.F. Boesch [ed.], Proceedings of the conference on coastal erosion and wetland modification in Louisiana: causes, consequences, and options. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: None
KEYWORDS: Texas; barrier island; marsh; geology; erosion;

00977
Mosher, K.H. 1937. The shrimp and the shrimp fishery of Texas. Proc. Tex. Acad. Sci. 20:16 (abstract only).

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; fisheries; shrimp;

00978
Muffler, L.J.P. [ed.]. 1979. Assessment of geothermal resources of the United States -- 1978. U.S. Department of the Interior, Washington, DC.

ABSTRACT: None
KEYWORDS: United States; coastal waters; geology; oil and gas;

00979
Multer, R. 1985. A numerical mud discharge plume model for offshore drilling operations. Report by the Hydraulics Laboratory, U.S. Army Engineer Waterways Experiment Station to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. MMS report No. 85-0046. Contract No. 14-12-0001-30012. 28 p.

ABSTRACT: Plume discharge models are often used to predict the fate of discharged materials from offshore oil and gas drilling operations. Most presently used models are complex and require considerable input data and computer time to operate. Therefore, the U.S. Department of the Interior funded the development of a less cumbersome plume discharge model able to run on desktop microcomputers. An existing model of drilling discharge plumes was modified to run on microcomputers. The report details the mathematical derivations of the model and includes a description of the computer programs written to execute the simulations. Certain analytical shortcuts were taken to reduce the complexity and render the computations more amenable to small memory computers.
KEYWORDS: physical; oil and gas; drilling fluid; model; sedimentation;

00980
Mumphrey, A.J.; et al. 1976. The impacts of outer continental shelf development on Lafourche Parish. Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: This study attempts to survey the impacts of OCS mining activity in Lafourche Parish in terms of employment, income, job types, environmental effects, and required supporting facilities and services.
KEYWORDS: Louisiana; oil and gas; socioeconomics; environmental impact; onshore facilities;

00981
Mumphrey, A.J.; et al. 1977. OCS development in coastal Louisiana: A socio-economic impact assessment. Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: This study quantifies the impacts of OCS development activities in terms of economic production, jobs, population, and public service costs. Also discusses the federal coastal energy impact program, the additional costs of urban development in wetlands, local planning capabilities in the coastal zone, and citizen involvement in coastal planning.
KEYWORDS: Louisiana; estuary; marsh; oil and gas; socioeconomics; environmental impact; onshore facilities;

00982
Mumphrey, A.J.; et al. 1978. The value of wetlands in the Barataria Basin. Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: This study discusses the socioeconomic and ecological systems of the Barataria Basin, including population growth and the structure of the Barataria Region's economy. Also discusses several methods for computing the economic value of the Barataria wetlands.
KEYWORDS: Louisiana; marsh; Barataria Bay; biology; socioeconomics; ecology;

00983
Mumphrey, A.J., Jr.; Carlucci, G.D. 1978. Environmental planning for offshore oil and gas. Vol. V. Regional status reports. Part 3: Gulf Coast region. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-77/16.3. 158 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; biology; ecology; environmental impact;

00984
Muncy, R.J.; Wingo, W.M. 1983. Species profiles, life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico). Sea catfish and gafftopsail catfish. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/115. 17 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; ecology; socioeconomics; catfish;

00985
Murdy, E.O. 1983. Saltwater fishes of Texas: a dichotomous key. Texas A&M University, College Station, TX. Sea Grant Rep. No. TAMU-SG-83-607. 224 p. NTIS order No. PB83-256842.

ABSTRACT: Persons attempting to identify estuarine and marine fishes found along the Texas coast face a serious handicap because the pertinent literature is vast and scattered through a variety of books and technical journals. This key is a compilation of that literature into a single volume and includes only those adult fishes known or expected to occur along the Texas coast. The area of coverage extends from Sabine Pass to the mouth of the Rio Grande River, and includes all estuarine waters and that part of the Gulf of Mexico above the continental shelf to a depth of 200 meters (656 feet).
KEYWORDS: Texas; estuary; coastal waters; continental shelf; biology; fish; taxonomy;

00986
Murphy, M.D. 1981. Aspects of the life history of the gulf butterfish, Peprilis burti. Master's thesis. Texas A&M University, College Station, TX. 77 p.

ABSTRACT: None
KEYWORDS: Louisiana; Texas; biology; ecology; fish;

00987

Murray, G.E. 1957. Geologic occurrence of hydrocarbons in Gulf coastal province of the United States. Trans. Gulf Coast Assoc. Geol. Soc. 7:253-299.

ABSTRACT: The Gulf geosyncline, forming the north coastal flank of the Gulf of Mexico basin, possesses about 15,000 meters (approximately 50,000 feet) of predominantly arenaceous-argillaceous, Mesozoic-Cenozoic strata which have been differently deformed by structural movements of principally vertical nature. These strata overlie Precambrian-Paleozoic rock of variable facies and structure. Hydrocarbons have been discovered in the province (1) in sedimentary rocks of every age (Jurassic-Recent) that are an integral part of the element, Gulfian and Neogene strata being the most important producers; (2) in Cambro-Ordovician to Carboniferous strata beneath the element; (3) from depths of a few to about 6,500 meters; (4) from near the Province's inner margin to within a few miles of the continental slope; (5) and from mainly arenaceous, but also from argillaceous and calcareous strata, salt-dome caprock, water-laid volcanics, and altered igneous rocks. Major accumulations are controlled by both structure and stratigraphy; they appear to be most common in areas of 30-50% sand, in areas of structural terracing updip of monoclinal flexing, and in areas of rapidly thickening sedimentary sequences in the downthrow segments of down-to-basin (down to Gulf) regional strike fault systems. Common structural types effecting accumulations are convex traps, faulted or unfaulted; closures associated with varieties of normal faulting; and structural salients of various kinds. Lithologic variations create conditions conductive to accumulations through updip-downdip wedge-outs and association with local and regional structures. Porosity and permeability variations control local occurrences on structure and may account for accumulations in the absence of structure. A single combination structural-stratigraphic trap, the East Texas field, contains about 1/5 of the hydrocarbons discovered to date. All discovered major fields occur associated with, or Gulfward (downdip and basinward) from, inner systems of down-to-coast (down-to-basin) faults. Seventy-seven proven major fields account for about 2/3 of the total discovered hydrocarbons. Twenty-three giant fields possess about 1/2 of this total while 10 of them are responsible for approximately 2/5 of it. Principal producing strata are early Gulfian (Woodbinian) and late Tertiary (Miocene), which respectively account for about 1/3 and 1/4 of the discovered hydrocarbons.
KEYWORDS: Gulf of Mexico; geology; oil and gas; hydrocarbon; stratigraphy;

00988

Murray, G.E. 1960. Geologic framework of Gulf Coastal Province of United States, p. 5-33. In F.P. Shepard, F.B. Phleger, and T.H. Van Andel [ed.], Recent sediments, northwest Gulf of Mexico. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: The Gulf Coastal province of the United States is a segment of the Mesozoic-Cenozoic coastal geosyncline of eastern North America which can be traced continuously from Newfoundland to Guatemala. The geosyncline is roughly lens-shaped in cross section; approximately equal parts exist (1) submerged beneath the waters of the Atlantic Ocean and Gulf of Mexico, and (2) partly emerged adjacent to the shores. The Gulf Coastal portion of the geosyncline has an area of more than 150,000 square miles and contains about 50,000 feet of predominately arenaceous-argillaceous, marginal to shallow marine strata, although calcareous materials predominate in the Florida Peninsula and in the Cretaceous in Texas. The geosynclinal mass overlies Precambrian-Paleozoic rocks of variable facies, structure, and degree of metamorphism; their top surface possesses an overall slope toward the Gulf of Mexico.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; geology; geologic history; stratigraphy;

00989

Murray, H.E.; Neff, G.S.; Hrung, Y.; Giam, C.S. 1980. Determination of benzo(a)pyrene, hexachlorobenzene and pentachlorophenol in oysters from Galveston Bay, Texas. Bull. Environ. Contam. Toxicol. 25:663-667.

ABSTRACT: Intensive development of industrial plants located along the Houston Ship Channel is a major potential source of refractory organic contaminants to the Galveston Bay estuarine system. Petroleum production and shipping also contribute extensively to the pollutant load of the Bay. As bivalves have been suggested as potentially valuable sentinel organisms for indicating levels of pollutants in coastal marine waters, this study was undertaken to analyze oysters from Galveston Bay for selected pollutants. Three compounds, each representing a particular class of organic pollutant, were selected for determination in oysters (Crassostrea virginica) collected near Morgan's Point. These were benzo(a)pyrene (polycyclic aromatic hydrocarbon), hexachlorobenzene (polychloroaromatic hydrocarbon); and pentachlorophenol (chlorinated phenol). These compounds were selected because of their large annual production, patterns of use and disposal which favor their entry into the oceans, high toxicity, and persistence in the environment.
KEYWORDS: Texas; Galveston Bay; estuary; chemistry; oyster; hydrocarbon; environmental impact;

00990

Murray, S.P. 1972. Turbulent diffusion of oil in the ocean. Limnol. Oceanogr. 17:651-660.

ABSTRACT: On-site observations of oil slick geometries and current speeds during the Chevron spill of March 1970 in the Gulf of Mexico have allowed a comparative evaluation of the role of large-scale turbulence (in the form of horizontal eddy diffusivity) and surface tension effects in the spreading of oil from a continuously emitting well into a steady current.
KEYWORDS: Louisiana; coastal waters; oil and gas; oil spill; physical;

00991

Murray, S.P. 1972. Observations on wind, tidal, and density-driven currents in the vicinity of the Mississippi River Delta, p. 127-142. In D.J.P. Swift, D.B. Duane, and O.H. Pilkey [ed.], Shelf sediment transport. Dowden, Hutchinson & Ross, Inc. Stroudsburg, PA.

ABSTRACT: Observations were made on the variation with depth of current and water density at an anchor station in 15 m of water east of the Mississippi River delta for 5 days in March, 1970. After a tidal current with a 15 cm/s maximum value was isolated and removed, the residual current data showed close correlation with wind and density gradient effects. For more than a day onshore storm winds produced a vertical circulation pattern, with onshore flow near the surface and offshore flow near the bottom. Removal of the wind stress combined with density-gradient-driven currents completely reversed this flow pattern. Currents associated with the storm persisted for at least 3 days, producing of the average a relatively stable current.
KEYWORDS: Louisiana; Mississippi River Delta; physical; continental shelf; current; tide; wind;

00992

Murray, S.P. 1975. Wind and current effects on large scale oil slicks, p. 523-533. In Proceedings, 7th Annual Offshore Technology Conference, May 5-8, 1975. Houston, TX.

ABSTRACT: The relative effect of local winds and near-surface currents in determining the movement of oil slicks in coastal and shelf waters was determined from 39 surveys by Raydist-equipped helicopters during the Main Pass 41C spill off the Mississippi Delta in March 1970. Orientation of oil slicks is closely controlled by local wind direction; slicks usually form 10o-40o to the right of the wind. Wind shifts associated with various sectors of migrating high-pressure cells quickly realign new slicks and actively dissipate old ones. Density fronts, both ambient and quasi-stationary, also play important roles in determining slick movement and size. An easily used regression model for slick area and orientation as a function of wind velocity and local conditions is also presented.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; physical; oil and gas; current; meteorology; oil spill; model;

00993

Murray, S.P. 1976. Currents and circulation in the coastal waters of Louisiana. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-T-76-003. 33 p.

ABSTRACT: A review of our knowledge of circulation and currents in the coastal water of Louisiana indicates that, despite notable progress in a few specific areas, we lack a rudimentary knowledge of the mechanics of water motion along most of the coastline. The Mississippi River salt wedge and the mixing of its effluent plume into the open water of the Gulf of Mexico are generally understood, but detailed salt balance and turbulent mixing studies should now be undertaken. The portion of the Louisiana shelf within the area 80 km west of the Mississippi has been studied in detail with regard to tidal currents, long-term drift, hydrography, and local wind drift. Outside of this area, apparent ignorance prevails except for seasonal salinity patterns and the occasional isolated study. Summer current reversals toward the east and high tidal ranges in the vicinity of Calcasieu Lake, for example, remain unexplained. Detailed knowledge of the dynamics of our prolific coastal bays and estuaries is embarrassingly poor. Numerical modeling perhaps offers a shortcut to overcoming this disadvantage, but realistically this technique will only be effective after the controlling forces are better defined and understood by dynamically oriented field studies. Existing numerical models of Barataria Bay and Chandeleur-Breton Sound are cases in point. Tidal passes, minor river mouths, and the circulation within the wetlands proper have been subject to sporadic, short-term measurement programs, but definitive studies of the flux of mass, heat, salt, and other important scalars have yet to be performed. A list of research priorities to eventually allow better use of our coastal waters is presented at the end of this report.
KEYWORDS: Louisiana; coastal waters; continental shelf; physical; current;

00994
Murray, S.P.; Wiseman, W.J. 1976. Current dynamics and sediment distribution in the west Mississippi Delta area. In Conference on Marine and Freshwater Research in Southern Africa, Port Elizabeth, South Africa. July, 1976. 7 p.

ABSTRACT: The dynamical oceanography of the coastal bight west of Southwest Pass, an area extending roughly 50 km offshore and 70 km alongshore, was studied over the hydrologic year 1973-1974. Analysis of current observations from moored current meters and monthly anchor stations isolated clock-rotating tidal currents having amplitudes of 10-30 cm/sec, depending on location and vertical density gradients. Extremely strong tidal currents in the vicinity of Southwest Pass appear to be related to the early arrival of high water locally. Current profiles at the anchor stations often show significant vertical shear in speed and direction which is probably controlled by the density stratification. The spatial pattern of the tidal currents consists predominantly of reversing along shore flow with significant shear in the onshore-offshore direction. Drogue tracks, combined with satellite imagery and surface salinity patterns, frequently show a trapped vortex west of the delta with onshore flows in the western extremity of the study area. Conversely, monthly hydrographic cruises on a dense grid suggest that heavy Gulf water persistently intrudes at depth into the central core of the curved bight. Although subject to strong dispersive processes by the marked spatial variability in the tidal current field, the sediment pattern nevertheless appears to be largely controlled by the mean current field produced by seasonal wind and river discharge effects.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; physical; current; tide;

00995
Nakamura, E.L. 1981. Sciaenid resources in the Gulf of Mexico, p. 29-39. In F.E. Carlton [comp.] and H. Clepper [ed.], Marine Recreational Fisheries 6. Sport Fishing Institute, Washington, D.C.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; drum; recreation;

00996
Nakamura, E.L. 1982. What is the best use of fish resources in the U.S. Gulf of Mexico?, p. 289-292. In John H. Grover [ed.], Allocation of fishery resources. Proceedings of the Technical Consultation on Allocation of Fishery Resources held in Vichy, France, 20-23 April 1980. United Nations FAO.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; fish; fishery management;

00997
Nakamura, E.L.; Rivas, L.R. 1972. Big game fishing in the northeastern Gulf of Mexico during 1971. National Marine Fisheries Center, Southeast Fisheries Center, Panama City, FL. Laboratory report. 20 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; recreation;

00998
Nakamura, E.L.; Taylor, J.R.; Workman, I.K. 1980. The occurrence of life stages of some recreational marine fishes in estuaries of the Gulf of Mexico. NOAA Tech. Mem. NMFS-SEFC-45. 53 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; estuary; biology; fisheries; fish;

00999
National Academy of Sciences. 1975. Petroleum in the marine environment. National Academy Press, Washington, DC.

ABSTRACT: None
KEYWORDS: United States; Gulf of Mexico; oil and gas; chemistry; biology; oil spill; hydrocarbon; environmental impact;

01000
National Climatic Data Center. 1972. Environmental guide for the U.S. Gulf Coast. National Climatic Data Center, Asheville, NC. 177 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; meteorology; physical; temperature; wave;

01001
National Climatic Data Center. 1983. Climatic summaries for NOAA data buoys. National Weather Service, NOAA Data Buoy Center, NSTL Station, MS. 214 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; meteorology; temperature; wave; wind;

01002
National Fish and Wildlife Laboratory. 1980. American alligator. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-80/01.39. 9 p.

ABSTRACT: This paper is one in a series of accounts on threatened and endangered species. The purpose is to provide resource managers and the public with information about federally listed endangered and/or threatened vertebrate species that occur along or within 100 km of the sea coast of the United States. Information on life history, distribution, requirements and conservation of the subject species is included.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; alligator; biology; endangered species; ecology;

01003
National Marine Fisheries Service. 1973. Skylab oceanic gamefish project, interim data report. National Marine Fisheries Service, Southeast Fisheries Center, Fisheries Engineering Laboratory.

ABSTRACT: A joint effort by private, professional fishermen, NASA and NOAA's NMFS took place on August 4 and 5, 1973, in the northern Gulf of Mexico to acquire gamefish data, pigment data, chlorophyll A, B, and C along with carotenoids were measured using color filters.
KEYWORDS: Gulf of Mexico; fisheries; biology; fish; chlorophyll; remote sensing;

01004
National Marine Fisheries Service. 1975. FRV George M. Bowers cruise report. National Marine Fisheries Service, Southeast Fisheries Center.

ABSTRACT: The FRV George M. Bowers was assigned to determine, through tagging, the feasibility of assessing the bull croaker populations associated with offshore platforms in the northern Gulf of Mexico. Initially fishing operations were scheduled around four platforms east of the Mississippi River, however,inclement weather forced operations to the East Bay and West Delta area.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; fisheries; oil and gas; petroleum platform; fish; croaker;

01005
National Marine Fisheries Service. 1980. Marine recreational fishery statistics survey, Atlantic and Gulf Coasts, 1979. Current fishery statistics number 8063. National Marine Fisheries Service, Washington, DC. 137 p.

ABSTRACT: The 1979 survey is the first in a series of planned surveys to obtain estimates of participation, catch and effort by recreational fishermen in marine waters of the United States. This report covers the Atlantic and Gulf Coasts for a one year period from January through December, 1979. The data collection methodology consisted of two complementary surveys, a combination household survey and intercept (creel) survey.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; coastal waters; fisheries; socioeconomics; recreation; fishery statistics;

01006
National Marine Fisheries Service. 1981. Construction, installation, and handling procedure for National Marine Fisheries Service's sea turtle excluder device. National Marine Fisheries Service, Pascagoula, MS. NOAA Tech. Mem. NOAA-TM-NMFS-SEFC-71. 15 p.

ABSTRACT: The Southeast Fisheries Center's Mississippi Laboratories Harvesting Technology Branch, Pascagoula, Mississippi, has been conducting research on techniques to reduce the incidental capture and mortality of sea turtles in shrimp trawls. The research has resulted in the development of the "turtle excluder device" (TED). The TED was tested aboard commercial shrimp vessels on shrimp grounds in the South Atlantic. It reduced turtle captures 89% while maintaining shrimp catches equal to standard shrimp trawls. Similar results are expected on other shrimping grounds off the southeastern United States, and testing on shrimp grounds in the Gulf of Mexico will be conducted during 1981. The TED also has the potential capability to significantly reduce by-catch associated with shrimp trawling. This capability has not been fully developed, but research is planned to test modifications of the TED to optimize by-catch reduction and further improve turtle separation.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; biology; fisheries; turtle; fishing gear;

01007

National Marine Fisheries Service. 1982. Fisheries of the United States, 1981. National Marine Fisheries Service, Washington, DC. Current Fishery Statistics No. 8200. 131 p.

ABSTRACT: None
KEYWORDS: United States; coastal waters; continental shelf; biology; fisheries; fishery management; fishery statistics; socioeconomics;

01008

National Marine Fisheries Service. 1982. Landings - Louisiana - 1979. National Marine Fisheries Service, Southeast Fisheries Center, Statistical Surveys Branch, Miami, FL. (unpaginated).

ABSTRACT: This is an annual compilation of commercial fisheries catch and ex vessel value organized by species for landings in Louisiana.
KEYWORDS: Louisiana; fisheries; fishery statistics; socioeconomics;

01009

National Marine Fisheries Service. 1982. Landings - Louisiana - 1980. National Marine Fisheries Service, Southeast Fisheries Center, Statistical Surveys Branch, Miami, FL. (unpaginated).

ABSTRACT: This is a compilation of commercial fisheries catch and ex vessel value organized by species for landings in Louisiana.
KEYWORDS: Louisiana; fisheries; fishery statistics; socioeconomics;

01010

National Marine Fisheries Service. 1982. Landings - Louisiana - 1981. National Marine Fisheries Service, Southeast Fisheries Center, Statistical Surveys Branch, Miami, FL. (unpaginated).

ABSTRACT: This is an annual compilation of commercial fisheries catch and ex vessel value organized by species for landings in Louisiana.
KEYWORDS: Louisiana; fisheries; fishery statistics; socioeconomics;

01011

National Marine Fisheries Service. 1982. Landings - Louisiana - 1982 (preliminary) January - July. National Marine Fisheries Service, Southeast Fisheries Center, Statistical Surveys Branch, Miami, FL. (unpaginated).

ABSTRACT: This is a partial compilation of the commercial fisheries catch and ex vessel value for Louisiana.
KEYWORDS: Louisiana; fisheries; fishery statistics; socioeconomics;

01012

National Marine Fisheries Service. 1984. End-of-year reports: annual landings by distance caught from shore - southeast region for 1983 (preliminary). National Marine Fisheries Service, Southeast Fisheries Center, Statistical Surveys Branch, Miami, FL. (unpaginated).

ABSTRACT: This is a compilation of annual commercial fisheries catch organized by fish species, ex vessel value, weight, and state, with the distance from shore.
KEYWORDS: Alabama; Louisiana; Mississippi; continental shelf; fisheries; fishery statistics; socioeconomics;

01013

National Marine Fisheries Service. 1984. Gulf coast charter boat listing. National Marine Fisheries Service, Southeast Fisheries Center, St. Petersburg, FL. (unpaginated).

ABSTRACT: This is a continuously revised listing of charter boats along the Gulf coast. Information listed includes the captain's name, the boat's name, the boat's location, and a contact mailing address.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; fisheries; recreation; socioeconomics;

01014

National Marine Fisheries Service. 1984. Oceanic pelagics program summary - 1983. National Marine Fisheries Service, Southeast Fisheries Center, Miami, FL. 67 p.

ABSTRACT: This report presents the results of the 1983 recreational billfish survey, gamefish tagging activity, and research on fish age and growth rates. In conducting the billfish survey 111 tournaments and 20 docks were monitored, and 102,919 hours of effort were recorded.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; recreation; socioeconomics; fisheries; fishery statistics;

01015

National Marine Fisheries Service. (No date). Age and size of Atlantic thread herring. National Marine Fisheries Service, Atlantic Estuarine Fisheries Center, Beaufort, NC.

ABSTRACT: Age and size studies of Atlantic thread herring in Gulf of Mexico.
KEYWORDS: Alabama; Florida; Gulf of Mexico; Louisiana; Mississippi; Texas; fisheries; biology; fish; herring;

01016

National Marine Fisheries Service. (No date). Age and size of Gulf menhaden. National Marine Fisheries Service, Atlantic Estuarine Fisheries Center, Beaufort, NC.

ABSTRACT: Age and size study of Atlantic menhaden throughout the geographical and seasonal range of the Gulf menhaden fishery. Samples from commercial catch.
KEYWORDS: Alabama; Florida; Gulf of Mexico; Louisiana; Mississippi; Texas; fisheries; menhaden; biology; fish;

01017

National Marine Fisheries Service. (No date). Biological samples from the industrial bottom fish surveys. National Marine Fisheries Service, Pascagoula, MS.

ABSTRACT: Samples of catches from the industrial bottom fish fishery in the north central Gulf of Mexico are collected monthly. Data are taken on length, weight, sex, and reproductive stage of the 5 to 7 dominant species.
KEYWORDS: Gulf of Mexico; biology; fisheries; fishery statistics;

01018

National Marine Fisheries Service. (No date). Catch effort (log book) data. National Marine Fisheries Service, Pascagoula MS.

ABSTRACT: Daily catch data from captain's log book have been collected since 1970 in an effort to monitor the industrial bottom fish fishery off the north central Gulf of Mexico coast. Data is also available on vessel characteristic and gear type. Although no specific data is recorded on species composition of the catches, it can be estimated according to the time of year.
KEYWORDS: Gulf of Mexico; fisheries; fishery statistics; biology; fishing gear;

01019

National Marine Fisheries Service. (No date). Catch records of Gulf menhaden. National Marine Fisheries Service, Atlantic Estuarine Fisheries Center, Beaufort, NC.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Gulf of Mexico; Louisiana; Mississippi; Texas; fisheries; menhaden; fishery statistics; fish;

01020

National Marine Fisheries Service. (No date). Groundfish length frequency data. National Marine Fisheries Service, Pascagoula, MS.

ABSTRACT: Data on length, weight, sex and gonadal condition has been collected on the dominant species of the groundfish fishery in the northern Gulf of Mexico. Measurement are usually taken on most of the following species: Micropogon undulatus, Leiostomus xanthurus, Cynoscion arenarius, Cynoscion nothus, Menticirrhus americanus, Stellifer lanceolatus, Stenotomus caprinus, Peprilus burti, Trichiurus lepturus, and Arius felis. The station data collected in conjunction with these fishery data are on punched cards in the total fisheries data file in Pascagoula and are retrievable by station number or species. Station data usually, but not always include air and water temperature (some surface and bottom), depth, barometric pressure, wind direction and speed, sea state, water color, bottom type, ID of other animals caught and catch/effort of station.
KEYWORDS: Gulf of Mexico; fisheries; fishery statistics; biology;

01021

National Marine Fisheries Service. (No date). Shrimp discard file. National Marine Fisheries Service, Pascagoula MS.

ABSTRACT: Data is collected from a number of shrimp trawlers regarding what is discarded from their nets. Some methods vary from shrimp to shrimp as does the completeness and accuracy of discard data. To date, data have been collected from about 700 stations. Descriptive data is also available on gear size and type.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; fisheries; fishing gear; shrimp; fishery statistics;

01022

National Marine Fisheries Service. (No date). Survey of Gulf menhaden. National Marine Fisheries Service, Atlantic Estuarine Fisheries Center, Beaufort, NC.

ABSTRACT: Ten year survey of Gulf menhaden from Florida to Texas.
KEYWORDS: Alabama; Florida; Gulf of Mexico; Louisiana; Mississippi; Texas; commercial fisheries; fisheries; menhaden; fish; biology;

01023

National Marine Fisheries Service. (No date). Tagging and migration studies of adult Gulf menhaden. National Marine Fisheries Service, Atlantic Estuarine Fisheries Center, Beaufort, NC.

ABSTRACT: Tagging and migration studies of adult Gulf menhaden from Florida to Texas. Field notes on fish conditions.
KEYWORDS: Alabama; Florida; Gulf of Mexico; Louisiana; Mississippi; Texas; fisheries; menhaden; biology; fish;

01024

National Marine Fisheries Service. (No date). Tagging juvenile Gulf menhaden. National Marine Fisheries Service, Atlantic Estuarine Fisheries Center, Beaufort, NC.

ABSTRACT: Tagging study of juvenile Gulf menhaden. Field notes on habitat, condition, water quality.
KEYWORDS: Alabama; Florida; Gulf of Mexico; Louisiana; Mississippi; Texas; fisheries; menhaden; biology; fish;

01025

National Ocean Survey. (No date). Yearly summaries of control tidal stations. National Ocean Survey, Rockville, MD.

ABSTRACT: Summaries of data taken at control tide stations are included in this file. Parameters described are monthly means and extremes, highest tides, lowest tides, high water interval (Greenwich), low water interval (greenwich), high water, low water, range, tide level, sea level, difference between tide level and sea level, and highest daily sea level. The data is presented in tabular form with each page containing one parameter measured over a number of years.
KEYWORDS: Gulf of Mexico; physical; tide;

01026

National Oceanic and Atmospheric Administration, National Ocean Survey. 1969. Surface water temperature and density, Atlantic Coast, North and South America (1968). U.S. Government Printing Office, Washington, DC.

ABSTRACT: Monthly and yearly means together with the yearly maximum and minimum of sea water temperature and density are given at tide stations operated by the National Ocean Survey and at stations maintained cooperatively in this and other countries.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; continental shelf; deep sea; temperature; salinity;

01027
National Park Service. 1983. Northern Gulf of Mexico Estuaries and Barrier Islands Research Conference, Program and Abstracts, June 13-14, 1983, Biloxi, MS. Gulf Coast Research Laboratory, J.L. Scott Marine Education Center, Biloxi, MS. National Park Service, Coastal Field Research Laboratory, Ocean Springs, MS. 62 p.

ABSTRACT: Abstracts are presented from some 44 papers presented at this conference. Subjects include benthic communities, fishes, pelecypods, ground fish surveys, hydrodynamic modeling, geology, and oil exploration impacts.
KEYWORDS: Alabama; Louisiana; Mississippi; barrier island; estuary; biology; geology; physical; chemistry; fisheries; oil and gas; ecology; environmental impact;

01028
National Research Council. 1983. Drilling discharges in the marine environment. National Academy Press, Washington, DC. 180 p.

ABSTRACT: This review was conducted to improve the technical basis for making decisions about discharging drilling fluids and cuttings in the marine environment. Topics discussed include the nature of the drilling process and drilling discharges; fates of drilling discharges; biological effects of drilling discharges; considerations in using the available information; and an evaluation of alternative operating practices.
KEYWORDS: United States; coastal waters; continental shelf; continental slope; oil and gas; biology; chemistry; physical; hydrocarbon; trace metal; drilling fluid; cuttings; environmental impact;

01029
National Research Council. 1985. Oil in the sea. Inputs, fates, and effects. National Academy Press, Washington, DC. 601 p.

ABSTRACT: This book is an update of the 1975 National Research Council report, 'Petroleum in the Marine Environment.' Topics include: Chemical composition of petroleum hydrocarbon sources; inputs; chemical and biological methods; fates; effects; and impact of some major spills (spill case histories).
KEYWORDS: United States; oil and gas; biology; chemistry; physical; oil spill; hydrocarbon; environmental impact;

01030
National Research Council. 1985. Disposal of offshore platforms. National Academy Press, Washington, DC. 76 p.

ABSTRACT: The purpose of this study is to document and assess alternatives for removing, disposing, or reusing fixed, offshore platforms that are past their useful service life, and to make recommendations concerning government policy on their disposition. The report discusses the engineering aspects and costs of platform removal; legal issues; environmental considerations; safety issues and hazards to navigation; and alternative policies for disposing of offshore platforms.
KEYWORDS: Gulf of Mexico; oil and gas; petroleum platform; reef; explosion; environmental impact; ocean dumping;

01031
National Sea Grant College Program/National Marine Fisheries Service. 1985. Estuarine management practices symposium 1985. Louisiana Sea Grant Pub. No. LSU-W-85-003. 147 p.

ABSTRACT: Twelve papers cover such estuarine management concerns as ethical priorities, physical alterations, water quality, ecosystem rehabilitation, mitigation and restoration, and citizen involvement.
KEYWORDS: Gulf of Mexico; estuary; marsh; biology; chemistry; physical; geology; ecology; environmental impact;

01032
Neal, R.A. 1975. The Gulf of Mexico research and fishery on penaeid prawns. Proc. Natl. Prawn Seminar 1:2-8.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; shrimp; ecology;

01033

Neal, R.A.; Brusher, H.A.; Sullivan, L.F. 1983. Survey of brown shrimp resources in the north-western Gulf of Mexico 1961-1965. National Marine Fisheries Service, Galveston, TX. NOAA Tech. Mem. NOAA-TM-NMFS-SEFC-114. 35 p. NTIS order No. PB84-215839 NOAA-84070903.

ABSTRACT: A sampling program was conducted during 1961-65 to measure the general distribution and abundance of shrimp resources off the Texas and Louisiana coasts. Samples were taken monthly with standard commercial shrimping gear along 10 transects at depths ranging from 14 to 110 m. Due to limitations of sampling, analysis of brown shrimp abundance data detected no significant difference between years, although 1961, 1962 and 1964 were historically low abundance years for brown shrimp. Brown shrimp were more abundant off the Texas coast than off the Louisiana coast.
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; fisheries; fishery statistics; shrimp;

01034

Neff, J.M. 1982. Fate and biological effects of oil well drilling fluids in the marine environment: a literature review. U.S. Environmental Protection Agency, Environmental Research Laboratory, Gulf Breeze, FL. EPA-600/53-82-064.

ABSTRACT: None
KEYWORDS: oil and gas; chemistry; biology; drilling fluid; environmental impact;

01035

Neff, J.M.; McCulloch, W.L.; Carr, R.S.; Retzer, K.A. 1980. Comparative toxicity of four used offshore drilling muds to several species of marine animals from the Gulf of Mexico, p. 866-881. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: oil and gas; biology; drilling fluid; environmental impact; shrimp; benthos; physiology;

01036

Nelsen, T.A.; Trefry, J.H. 1986. Pollutant-particle relationship in the marine environment: a study of particulates and their fate in a major river-delta-shelf system. Rapp. P.-v. Reun. Cons. int. Explor. Mer. 186:115-127.

ABSTRACT: The Pollutant-Particle Relationships in the Marine Environment (P-PRIME) program was designed to look at the association between particles (lithogenic and biogenic) and selected heavy-metal pollutants for their source-pathway-dispersal patterns and behavior from a major United States river (Mississippi River) to the adjacent continental shelf. Data from four cruises indicate the following: a) the river's SPM concentration varied on an hourly to seasonal scale; b) suspended particulate matter in the study was composed of three distinct suites: a dominant lithogenic suite and two subordinate, but distinct and seasonally variable biogenic (phytoplankton) suites; c) in order of abundance, the offshore concentration of particulate matter is in the bottom nepheloid layer, the surface turbid layer, and the midwater region: d) in the nearshore and midshelf zone, rapid removal of river-derived (lithogenic) particles from the water column to the underlying sediments may be "driven" by biopackaging; e) 210-Pb sediment accumulation-rate data support the rapid removal and accumulation of river-derived sediments very near the river mouth; f) data for sediment pollutant Pb support the concept of rapid sediment burial in the nearshore zone and also indicate no losses of Pb from these particles. These findings indicate that modelling and sediment transport of river-shelf systems such as the one described above must consider variability on the hourly to seasonal scale to provide an accurate reflection of the natural system. Because of close coupling of pollutants such as Pb with particles, even after burial, future studies of the pathways and sinks of many pollutants can be, to a first approximation, that of the river-derived particles.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; chemistry; sediment; trace metal;

01037

Nelson, H.F.; Bray, E.E. 1970. Stratigraphy and history of the Holocene sediments in the Sabine-High Island area, Gulf of Mexico, p. 48-77. In J.P. Morgan [ed.], Deltaic sedimentation, modern and ancient. Soc. Econ. Paleon. Mineral. Spec. Publ. No. 15.

ABSTRACT: Data developed in this study trace the Holocene history of the Sabine-High Island area from 10,200 years BP to the present. The three most important factors controlling the distribution of sediments are considered to be topography, variations in the rate of sea-level rise, and currents.
KEYWORDS: Texas; estuary; coastal waters; geology; sediment; stratigraphy;

01038

Nelson, R.S.; Manooch, C.S., III. 1982. Growth and mortality of red snappers, Lutjanus campechanus in the west central Atlantic ocean and northern Gulf of Mexico. Trans. Am. Fish. Soc. 111 (4):465-475.

ABSTRACT: Age, growth rates, mortality, and length-weight relationships were determined for red snappers L. campechanus from 2 areas in the west central Atlantic Ocean and 2 in the northern Gulf of Mexico. Growth rates varied only slightly among areas. The von Bertalanffy growth equation was Lt = 975(1 - e-0.16(t-0.0)) for fish from the Atlantic and Lt = 941(1 - e-0.17(t+0.1)) for fish from the Gulf of Mexico, where Lt is length at age t in years. The length-weight equation differed among areas, but no difference was evident between sexes. This equation for fish from all areas pooled was W = 2.04 .times. 10-5 TL2.953, where W is weight in grams and TL is total length in mm. Significant differences were found in total instantaneous mortality rates. The rate ranged from 0.39 for fish off the coast of North Carolina and South Carolina [USA] to 0.78 for fish off the coast of Louisiana. Age of full recruitment to the fishery ranged from 2 yr off Louisiana to 6 yr off the Carolinas. Fishing mortality appears to be the major cause of differences in total mortality among areas.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; coastal waters; continental shelf; biology; fish; fisheries; snapper;

01039

Neumann, C.J.; Cry, G.W.; Caso, E.L.; Jarvinen, B.R. 1981. Tropical cyclones of the North Atlantic Ocean. Prepared by National Climatic Center, Asheville, NC, in cooperation with the National Hurricane Center and National Hurricane Research Laboratory, Coral Gables, FL.

ABSTRACT: This paper presents North Atlantic tropical cyclone tracks and certain basic statistical summaries.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; meteorology; hurricane;

01040

New England Coastal Engineers. 1981. Proceedings of the Gulf circulation studies workshop, May 14-15, New Orleans, LA. Bureau of Land Management, Gulf of Mexico OCS Regional Office, New Orleans, LA. 96 p. (Also NTISP-881-248254.)

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; current; Loop Current;

01041

Nichelson, R. 1982. Proceedings of the 7th Annual Tropical and Subtropical Fisheries Technological Conference of the Americas. Texas A&M University, College Station, TX. TAMU-SG-82-110. 399 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; continental shelf;

01042

Nichols, S. 1983. Impacts of the 1981 and 1982 Texas closure on brown shrimp yields. National Marine Fisheries Service, Miami, FL. Southeast Fisheries Center. Rep. No. NOAA-TM-NMFS-SEFC-110. 48 p. NTIS order No. PB84-119874.

ABSTRACT: Between May 22 and July 15, 1981, and again between May 26 and July 14, 1982, trawl fishing was prohibited in the 200 mile Fishery Conservation Zone (FCZ) off the Texas coast. The main purpose of the regulation was to improve yields by allowing newly recruited brown shrimp (Penaeus aztecus) to grow larger before beginning harvesting. This paper examines the effects of the Texas FCZ closure on yields of brown shrimp in the Texas FCZ area, and on yields from the Gulf-wide brown shrimp stock.
KEYWORDS: Texas; continental shelf; coastal waters; fisheries; shrimp;

01043

Nissan, E.; Williams, D.C. 1981. A decision model for the trade-off between the benefits of economic growth, and its environmental cost, p. 88-98 In J.R. Kelly [ed.], Symposium on Mississippi Sound. Mississippi-Alabama Sea Grant Consortium, Ocean Springs, MS. MASGP-81-007.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; socioeconomics; biology; ecology; model;

01044

Nissan, E.; Williams, D.C.; Caveny, R. 1981. A linear programming model of economic growth and the environment. Mississippi-Alabama Sea Grant Consortium, Ocean Springs, MS. MASGP-79-030.

ABSTRACT: None
KEYWORDS: Mississippi; socioeconomics; environmental impact; ecology;

01045

Northam, M.A. 1981. The organic geochemistry of lipids extracted from Orca Basin sediment. Ph.D. dissertation. The University of Texas at Austin. 129 p. (Diss. Abs. 42/07-B:2743).

ABSTRACT: Orca Basin is an anoxic, highly reducing basin of the continental slope of the northwestern Gulf of Mexico. Stable isotope ratios and total organic carbon percentages were determined for subsamples taken from two cores from within the basin and one control core from the perimeter. Results show that the organic carbon content of the basin is consistently 2 to 3 times that of the control core. The Pleistocene-Holocene boundary, indicated by a break in the (delta)(13)C vs. depth profiles, occurs at a greater sediment depth and extends over a greater range in the basin cores than in the control core. A close core subsampling interval has made it possible to detect a fine structure in the (delta)(13)C profiles which may be a record of the effects of a small climatic changes of geologically short duration. The total lipid was extracted from subsamples from the control core and one basin core. Results of the compositional analyses show that there are no unusual sources of organic material to this sediment. Lipid concentration, relative to total organic carbon, is 3 to 5 times greater in the surface sediment of the basin than in the control core, indicating increased preservation of this material in the anoxic environment of the basin. The range of stable carbon isotope ratios (isotopic identity) for the total organic carbon, total lipid extract, and lipid fractions was determined for both cores and for representative biogenic source material. Results of these analyses show that the lipid at the surface of the basin core has a greater retention of isotopic identity than at the surface of the control core. This difference is interpreted to show that the lipid material deposited under anoxic conditions is preserved to a greater degree in the sediment than that deposited under normal aerobic conditions. Sediments from two shallower environments, the continental shelf of the Gulf of Mexico and Baffin Bay, Texas, were also analyzed to determine the effects of water column length on degradation of lipid carbon. Results show that a substantial amount of the isotopic identity of lipid carbon, present in the source material, is lost in the upper water column.
KEYWORDS: Louisiana; continental slope; geology; chemistry; sediment; organic carbon; stable isotope;

01046

Nowlin, W.D., Jr.; Parker, C.A. 1974. Effects of a cold-air outbreak on shelf waters of the Gulf of Mexico. J. Phys. Oceanogr. 4(3):467-486.

ABSTRACT: Two surveys of the waters over an area of continental shelf in the northwestern Gulf were made during January 1966. The first observation period was just before a major outbreak of cold, dry air; the second was about 15 days later, with the region still under the influence of the outbreak. Waters were well mixed to 100 m, or the bottom in shallower depths. During the 15-day period, temperatures decreased nearly 5 degrees C and salinity increased about 1 ppt near shore. A study of the change in T-S relationships before and after the outbreak indicates the strong possibility that subsurface water types generally found beneath the Subtropical Underwater core in the Gulf were formed locally over the shelf by evaporation and sensible heat exchange to the atmosphere.
KEYWORDS: Gulf of Mexico; continental shelf; physical; temperature;

01047

Nummedal, D. 1982. Future sea level changes along the Louisiana coast, p. 164-176. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences, and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: The relative elevation of sea and land has been changing throughout time in response to two fundamentally different groups of factors. Global factors include changes in the volume of the ocean basins due to tectonic processes and changes in the total amount of ocean water due to glaciation. Local factors include subsidence of continental margins and the compaction of recent sediments. During this century, global sea level (eustatic) appears to have been rising at a rate of 1.2 mm/yr. Along the south central Louisiana coast the land surface appears to be sinking at a rate of about 8 mm/yr. Recent global climatic modeling strongly suggests that we are about to enter a period of rapid warming due to increased amounts of carbon dioxide (CO2) in the atmosphere. As a consequence, eustatic sea-level rise is predicted to accelerate both because of steric expansion of the ocean water and continued melting of polar ice caps. For the next 40 years the eustatic sea-level rise may average 10 mm/yr. The local relative sea level in coastal Louisiana would therefore rise at about twice its present rate over this time period. At this rate local sea level will, in the year 2020, stand some 70 to 75 cm higher than now.
KEYWORDS: Louisiana; marsh; coastal waters; geology; physical; meteorology; sea level; erosion;

01048

Nummedal, D. 1983. Rates and frequencies of sea-level changes: a review with an application to predict future sea-levels in Louisiana. Trans. Gulf Coast Assoc. Geol. Soc. 33:361-366.

ABSTRACT: The relative elevation of sea and land has been changing throughout time in response to two fundamentally different groups of factors operating globally and locally. (1) Global factors include changes in the volume of the ocean basins due to variable sea floor spreading rates, oceanic sedimentation, continental accretion, and the opening and closing of marginal seas. Furthermore, the mass of oceanic water has changed in response to glaciations, and the specific volume of the water is temperature dependent. (2) Local factors influencing relative sea level at any measurement station include subsidence of continental margins, fault displacements, compaction due to dewatering of sediments, and a range of atmospheric factors. This review has identified nine groups of factors which control relative sea level. These factors operate at distinctly different time scales ranging from 10**(8) years (sea floor spreading) to hours (storms). These same groups of factors also have characteristic rates of sea-level change, ranging from 5 x 10**(-4) cm/year for sea floor spreading to 30 cm/year for seasonal effects due to continental run-off and steric expansion of seawater. As one application of the data in this review an attempt has been made to predict the trend of relative sea level along the coast of Louisiana for the coming decades. Currently, the global (eustatic) sea level appears to be rising at a rate of 1.2 mm per year. The local rate of land surface sinking along the central Louisiana coast appears to be about 9 mm per year. Based on linear extrapolation of current trends one would predict that local sea level on the Louisiana coast in the year 2020 would stand about 40 cm higher than the present. A linear extrapolation of current trends is probably too conservative. Climatic modeling strongly suggests accelerated global warming due to the greenhouse effect of increasing atmospheric carbon dioxide. As a consequence, the global (eustatic) rate of sea-level rise is expected to increase due to steric expansion of the seawater and continued melting of land-based polar ice caps. For the next 40 years eustatic sea level on the Louisiana coast in the year 2020 would stand about 72 cm higher than the present. Such a rise would result in catastrophic inundation of coastal lowlands. Global warming also would increase tropical storm frequencies and the extent of coastal storm tide inundation. The economic impact on south Louisiana due to local sea-level rise is already severe and it is likely to increase in magnitude. It is imperative that plans for coastal development and protection consider these long-term trends.
KEYWORDS: Louisiana; estuary; coastal waters; geology; sea level; geologic history;

01049

O'Connell, S.B. 1986. Anatomy of modern submarine depositional and distributary systems. Ph.D. dissertation. Columbia University, New York. 313 p. (Diss. Abs. 48/02-B:374).

ABSTRACT: Five submarine depositional and distributary systems in the Gulf of Mexico and in the western Mediterranean were studied using bathymetry, side-looking sonar, reflection seismics and Deep Sea Drilling Project (DSDP) cores. Specific study areas were located in; (a) the distal Mississippi Fan, which includes DSDP Sites 614 and 615, located near the termination of a fan channel; (b) a complex, elongate, distributary system extending from the Ebro Slope and Fan, through the Valencia Valley and out onto the Valencia Fan; and (c) and a segment of the upper Rhone Fan Valley where a channel bifurcation has occurred. The studies were undertaken to learn about the construction of these sedimentary systems, emphasizing the relationship between morphologic expression and depositional processes. Submarine depositional and distributary systems have three basic components; unchanneled deposits, entrenched channels and leveed channels. These components control the overall shape of the system and the system's ability to transport sediment. Unchanneled deposits form at the base of the continental slope and beyond the mouths of slope canyons and distributary channels. These deposits are commonly succeeded by channeled systems. Two major forms of distributary channels are recognized, leveed and entrenched. They may occur in close proximity to one another even within the same channel. The two forms develop in response to changes in: (1) the seafloor and channel gradient, (2) the rate, volume, composition and duration of sediment supply, (3) the activity of any tributaries and (4) the time elapsed since the formation of the channel. With the exception of major instantaneous sediment inputs, the dominant influence on sediment distribution and morphology is the location of the channel. Hence, changes in the channel path affect the location of sedimentation. At least five mechanisms can potentially deflect the channel path: (1) blockage by a deposit from outside of the channel, (2) filling through deposition from intrachannel flows, (3) destruction of the channel wall by intrachannel flows (e.g. crevasse splays), (4) cutting of the levees by cross-channel flows, and (5) slumping of the channel margin. Leveed-channel walls, being perched, are vulnerable to degradation. Thus they are more easily redirected to a new course than entrenched channels. The new course, down the former confining levee takes advantage of a gradient that is commonly steeper than that of the original channel. In this manner the locus of sedimentation changes and sediments are distributed to and deposited on new areas of the seafloor.
KEYWORDS: Louisiana; continental slope; Mississippi Fan; geology; Deep Sea Drilling Project;

01050
Oetking, P.; Back, R.; Watson, R.; Merks, C. 1979. Physical studies of the near-shore continental shelf of south central Louisiana: currents and hydrography, p. 119-143. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; physical; current; wind; salinity; temperature; turbidity; Offshore Ecology Investigation;

01051
Oetking, P.; Back, R.; Watson, R.; Merks, C. 1979. Surface and shallow subsurface sediment of the near-shore continental shelf of south central Louisiana, p. 181-200. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; geology; oil and gas; sediment; sediment texture; cuttings; environmental impact; Offshore Ecology Investigation;

01052
Offshore Operators Committee. 1975. Environmental aspects of produced waters from oil and gas extraction operations in coastal waters. Offshore Operators Committee, Sheen Technical Subcommittee, New Orleans, LA. 32 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; produced water; environmental impact;

01053
Offshore Operators Committee. 1976. Environmental aspects of drilling muds and cuttings from oil and gas extraction operations in offshore and coastal waters. Offshore Operators Committee, Sheen Technical Subcommittee, New Orleans, LA. 50 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; drilling mud; cuttings; environmental impact;

01054
Oppenheimer, C.H. 1977. The offshore ecology investigation, 1972-1974, p. 147. In A.D. McIntyre and K.J. Whittle [ed.], Petroleum Hydrocarbons in the Marine Environment. Rapp. P.-v. Reun. Cons. int. Explor. Mer. 171.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; coastal waters; Timbalier Bay; oil and gas; biology; geology; chemistry; physical; environmental impact;

01055
Oppenheimer, C.H.; Miget, R.; Kator, H. 1979. Ecological relationships between marine microorganisms and hydrocarbons in the OEI study area, Louisiana, p. 287-324. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; chemistry; oil and gas; bacteria; hydrocarbon; environmental impact; biochemical oxygen demand; Offshore Ecology Investigation;

01056

Orton, R.B. 1964. The climate of Texas and the adjacent Gulf waters. U.S. Department of Commerce, National Weather Bureau, Washington, DC.

ABSTRACT: The report presents an analysis of data pertaining to sky cover, ceiling height, visibility, and wind; and to the local physiography, and the synoptic weather systems that influence or control these factors. The part about Adjacent Gulf Waters--that area between the 25th and 30th parallels, and extending eastward from the Texas-Mexico coast to the 85th meridian--is rather brief, mainly because most of the information available from this region has already been published in excellent form in Climatological and Oceanographic Atlas for Mariners, Vol. I, North Atlantic Ocean, U.S. Weather Bureau and U.S. Navy Hydrographic Office, Washington, D.C., August 1959. This Atlas contains data on surface winds, storm tracks, visibility, cloud cover, temperature, pressure, surface currents, waves, wave period and height, and other miscellaneous meteorological and oceanographical data.
KEYWORDS: Texas; physical; meteorology; continental shelf; coastal waters; wind; hurricane;

01057

Osburn, H.R.; Ferguson, M.O. 1987. Trends in finfish landings by sport-boat fishermen in Texas marine waters, May 1974-May 1986. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Management Data Series No. 119.

ABSTRACT: Since May 1974, private-boat fishermen have been routinely interviewed at boat-access sites. Party and headboat fishermen have been routinely monitored since May 1983 by on-site and on-board surveys. The total estimated sport-boat (bay and pass private-, party- and headboats and Texas Territorial Sea and Fishery Conservation Zone private- and party-boats) fishing pressure and landings of finfish in 1985-86 was 6,393,300 man-h and 2,189,700 fish, respectively. From 1983-1984 to 1985-86, pressure decreased 6% and landings decreased 28%. Sport-boat fishing in bays and passes accounted for 92% of the pressure and 94% of the landings in 1985-86. In the same year, private-boat fishermen exerted 93% of the pressure and landed 84% of the fish. The high-use season (15 May-20 November 1985) accounted for 63% of the pressure and 73% of the landings. Thirty-five percent of the 7-year mean annual coastwide private-boat bay and pass fishing pressure and 43% of the landings occurred in the Galveston Bay system. Spotted seatrout (Cynoscion nebulosus) comprised 38% of the 7-year mean annual coastwide private-boat bay and pass landings. Catch rates for spotted seatrout caught by private-boat fishermen declined 60% from 1983-84 to 1984-85 but increased 25% in 1985-86. The routine sport-boat fishery monitoring program detected a reduction in most finfish landings following the coastwide fish kill in December 1983 and January 1984. A resurgence of some landings occurred during 1985-86.
KEYWORDS: Texas; estuary; coastal waters; fisheries; socioeconomics; fishery statistics;

01058

Osburn, H.R.; Saul, G.E.; Hamilton, C.L. 1986. Trends in Texas commercial fishery landings, 1977-1985. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Management Data Series No. 107.

ABSTRACT: The Texas Parks and Wildlife Department in cooperation with the National Marine Fisheries Service collects data on commercially landed finfish and shellfish from Texas Bays and from the Gulf of Mexico off Texas. Shrimp continue to be the most important commercial seafood product in Texas. They comprised 82% of the weight and 92% of the ex-vessel value of total seafood landings, while Eastern oyster, blue crab, and finfish accounted for 18% of the total weight landed and 8% of the ex-vessel value in 1985. Total reported landings in 1985 were 100,299,900 lb with an ex-vessel value of $176,031,900. This is the fourth highest poundage and value recorded since 1977. Since 1977, the mean price/lb paid to commercial fishermen increased for all species except for "other" shrimp and "other" finfish. With the exception of shrimp, prices of finfish and shellfish increased from 1984 to 1985.
KEYWORDS: Texas; estuary; coastal waters; fisheries; socioeconomics; fishery statistics;

01059

Ostrom, C.L. 1979. The distribution of recent Foraminifera in Timbalier Bay, Louisiana, p. 447-471. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; biology; oil and gas; foraminifera; environmental impact; Offshore Ecology Investigation;

01060

Otvos, E.G. 1970. Development and migration of barrier islands, northern Gulf of Mexico. Geol. Soc. Am. Bull. 81:241-246.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; barrier island; geology; geologic history;

01061
Otvos, E.G. 1981. Barrier island formation through nearshore aggradation-stratigraphic and field evidence. Mar. Geol. 43:195-243.

ABSTRACT: None
KEYWORDS: geology; barrier island; stratigraphy;

01062
Otvos, E.G. 1981. Photogeological survey of barrier islands. In 1979 Annual Report, Mississippi-Alabama Sea Grant Consortium. Ocean Springs, MS.

ABSTRACT: None
KEYWORDS: geology; barrier island; remote sensing;

01063
Otvos, E.G. 1982. Coastal geology of Mississippi, Alabama and adjacent Louisiana areas. Guidebook. New Orleans Geological Society, New Orleans, LA. 66 p.

ABSTRACT: Otvos presents a geographical survey of surface geologic features from eastern New Orleans to Baldwin County, Alabama. The geologic units range from the Miocene to the recent; while emphasis is placed on the late Pleistocene to recent formation of the offshore barrier islands and Mississippi Sound.
KEYWORDS: Alabama; Louisiana; Mississippi; barrier island; estuary; marsh; coastal waters; geology; stratigraphy; geologic history;

01064
Ouellette, D.J. 1969. Sediment and water characteristics, South Pass, Mississippi River. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Bull. No. 3:29-53.

ABSTRACT: The purpose of the study was to attempt to ascertain what happens to the sediment in suspension after it leaves the river mouth. What effects do the various stages of the river have on suspended material? To what extent do salinity and temperature aid in settling the sediment? Do incoming tides have any effect in checking the advance of fine-grained materials in suspension? How far out to sea does the sediment travel? All of these questions must be answered before processes of sedimentation at river mouths can be thoroughly understood.
KEYWORDS: Louisiana; Mississippi River; South Pass; geology; sediment transport; sedimentation; temperature; salinity;

01065
Overstreet, R.M. (No date). An underexploited Gulf coast fishery: soft shell crabbing. Gulf Coast Research Laboratory, Ocean Springs, MS.

ABSTRACT: The potential use of soft shell crabs as a major food source was analyzed. Parasites which inhabit soft shell crabs were reported on as well as methods for food preparation.
KEYWORDS: Gulf of Mexico; benthos; biology; fisheries; blue crab;

01066
Overton, E.B.; Byrne, C.J.; McFall, J.A.; Antoine, S.R.; Laseter, J.L. 1983. Results from the chemical analysis of oily residue samples taken from stranded juvenile sea turtles collected from Padre and Mustang Islands, Texas. Report to Minerals Management Service, Metairie, LA. Gulf of Mexico OCS Regional Office. Rep. No. MMS/GM/PT-84/001. 32 p. NTIS order No. PB86-246253/XAB.

ABSTRACT: Juvenile Kemp's Ridley sea turtles were released June 7, 1983 off the Texas coast by the National Marine Fisheries Service, as part of an U.S. - Mexico cooperative effort to augment the natural breeding stock of the endangered species. Between one and six days later many dead or distressed Kemp's Ridleys were found stranded on Padre and Mustang Islands with oily residues in the mouth and esophagus. Six samples were analyzed for Ni/V content API gravity, stable C, H, and S isotopes, and hydrocarbon composition with high resolution gas chromatography and HRGC-mass spectrometry. Results were: (1) oils came from multiple sources, (2) composition was predominantly in the n-C20 to n-C32 range (waxy paraffins), (3) residues were most probably from discarded tanker cleaning operations.
KEYWORDS: Texas; Padre Island; Mustang Island; barrier island; chemistry; biology; hydrocarbon; trace metal; oil spill; environmental impact; endangered species; turtle;

01067

Owens, D.; Crowell, D.; Dienberg, G.; Grassman, M.; McCain, S. 1983. Proceedings of western Gulf of Mexico sea turtle workshop held at College Station, Texas on January 13-14, 1983. Texas A&M University, College Station, TX. Sea Grant Rep. No. TAMU-SG-84-105. 81 p. NTIS order No. PB84-121177.

ABSTRACT: Contents include priorities for research and conservation; Current status of the Kemp's ridley population; Historical background of the International Conservation Program for Kemp's ridley; Padre Island hatchery research; Headstarting Kemp's ridleys, 1982; Experimental marking of sea turtles by tissue modification; Random notes on sea turtles in the Western Gulf of Mexico; Sea turtle stranding and salvage research; Turtle excluder device; Oil and gas impacts on marine turtles in the Gulf of Mexico.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; turtle; environmental impact; oil and gas; endangered species;

01068

Palmer, C.R.; Kelly, P.L. 1983. America's five year offshore leasing plan - its importance in increasing domestic petroleum reserves. In 23rd Annual Institute on Petroleum Exploration and Economics, Dallas, TX. March 10, 1983. 28 p.

ABSTRACT: None
KEYWORDS: United States; oil and gas; socioeconomics;

01069

Palumbo, A.V.; Ferguson, R.L.; Rublee, P.A. 1984. Size of suspended bacterial cells and association of heterotrophic activity with size fractions of particles in estuarine and coastal waters. Appl. Environ. Microbiol. 48(1):157-164.

ABSTRACT: The size of bacteria and the size distribution of heterotrophic activity were examined in estuarine, neritic and coastal waters. The data indicated the small size of suspended marine bacteria and the predominance of free-living cells in numerical abundance and in the incorporation of dissolved amino acids. The average per-cell volume of suspended marine bacteria in all environments was < 0.1 .mu.m3. Cell volume ranged from 0.072-0.096 .mu.m3 at salinities of 0-34.3.permill. in the Newport River estuary, North Carolina, USA, and from 0.078-0.096 .mu.m3 in diverse areas of the Gulf of Mexico. Thus, the free-living bacteria were too small to be susceptible to predation by copepods. In the Newport River estuary, 93 .apprx. 99% of the total number of cells and 75-97% of incorporated 3H (from 3H-labeled mixed amino acids) retained by a 0.2 .mu.m pore-size filter passed through a 3.0 .mu.m pore-size filter. Although the amino acid turnover rate per cell was higher for the bacteria in the > 3.0-.mu.m size fraction than in the < 3.0-.mu.m size fraction, the small number of bacteria associated with the > 3.0-.mu.m size particles resulted in the low relative contribution of attached bacteria to total heterotrophic activity in the estuary. For coastal and neritic samples, collected off the coast of Georgia and northeast Florida and in the plume of the Mississippi River, 56-98% of incorporated label passed through a 3.0 .mu.m pore-size filter. The greatest activity in the > 3.0-.mu.m fraction in the Georgia Bight was at nearshore stations and in the bottom samples. These data are consistent with resuspension of bottom material being an important factor in influencing the proportion of heterotrophic activity attributable to particle-associated bacteria.
KEYWORDS: Louisiana; Florida; Mississippi River; coastal waters; biology; bacteria;

01070

Park, E.T. 1979. Environmental studies of the south Texas outer continental shelf, 1976-1977. Historical zooplankton. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract Nos. AA550-IA7-03 and AA550-IA7-21. 492 p. NTIS order No. PB296-646.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; plankton; ecology; STOCS;

01071

Parker, F.R., Jr.; Bailey, C.M. 1979. Massive aggregations of elasmobranchs near Mustang and Padre Islands (Texas, USA). Tex. J. Sci. 31 (3):255-266.

ABSTRACT: From June 1-4, 1977, large aggregations of elasmobranchs [Aetobatus narinari, Odontaspis taurus, Galeocerdo cuvieri, Negaprion brevirostris, Aprionodon isodon, Rhizoprionodon terraenovae, Carcharhinus porosus, C. leucus, C. limbatus, Sphyrna tiburo, S. lewini, S. tudes, S. mokarran, Rhinoptera bonasus, Manta birostris, Dasyatis sabina and D. americana] were observed along Gulf of Mexico beaches in the vicinity of Padre and Mustang Islands. Estimates indicate as many as 2000 sharks were concentrated in a 24 km stretch of the Gulf surf zone. Twelve species of sharks (1 odontaspid, 7 carcharhinids and 4 sphyrnids), 2 dasyatid rays, 2 myliobatid rays and 1 mobulid ray were identified. Climatological conditions produced unusually transparent water allowing the observation of the aggregation. Resulting hydrological conditions favored concentration of prey species in the shallow surf zone. Feeding was observed, evidence of recent birth recorded and mating behavior indicated in several species of elasmobranch. All species identified have been previously reported to occur in the Gulf of Mexico.
KEYWORDS: Texas; Mustang Island; Padre Island; coastal waters; biology; fish; shark;

01072

Parker, J.C. 1965. An annotated checklist of the fishes of the Galveston Bay System, Texas. Publ. Inst. Mar. Sci. 10:201-220.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; biology; fish;

01073

Parker, J.C. 1971. The biology of the spot, Leiostomus xanthurus Lacepede; and Atlantic croaker, Micropogon undulatus (Linnaeus), in two Gulf of Mexico nursery areas. Texas Agricultural Extension Service, College Station, TX. TAMU-SG-71-210. 194 p.

ABSTRACT: The distribution of spot and Atlantic croaker in the vicinity of Lake Borgne, Louisiana and Galveston Bay, Texas was determined in relation to temperature, salinity, and certain hydrographic features. Geographic variations in spawning, growth rates, distribution and food habits were evaluated. Length-weight relationships were compared between the two areas, and in Galveston Bay, condition of fish was studied in relation to size of fish, habitat, season, temperature, and salinity.
KEYWORDS: Louisiana; Texas; estuary; biology; ecology; fish; fisheries; salinity; temperature; spot; croaker;

01074

Parker, P.L. [ed.]. 1976. Environmental studies, south Texas outer continental shelf, 1975, biology and chemistry. Report to the Bureau of Land Management, Gulf of Mexico OCS Office, New Orleans, LA. Contract No. 14-12-0001-29124. 4 vol. NTIS order Nos. PB81-137689 and PB81-127706.

ABSTRACT: In 1974, the U.S. Department of the Interior began a multi-year study, of the South Texas Outer Continental Shelf (STOCS) which commenced with a three-year benchmark investigation. This report presents the results from the first study year. Objectives were (1) to characterize the water mass of the STOCS region; (2) to assess its primary, secondary, and benthic productivity; (3) to determine baseline hydrocarbon levels in biota, water, and sediment; and (4) to determine trace metals levels in biota. The STOCS area was found to be generally pristine with respect to hydrocarbon and trace metal occurrences in the water column, sediments, and organisms. There was no evidence of petroleum hydrocarbon contamination in benthic fauna. However, neuston and macronekton (fish) exhibited definite hydrocarbon contamination, probably related to floating micro-tarballs. Infaunal and epifaunal invertebrates were distributed in relation to sediment grain size and water depth, respectively. These inferred patterns may have been related to sampling bias.
KEYWORDS: Texas; continental shelf; biology; chemistry; plankton; benthos; ecology; trace metal; hydrocarbon; STOCS;

01075

Parker, R.H. 1956. Macroinvertebrate assemblages as indicators of sedimentary environments in east Mississippi Delta region. Am. Assoc. Pet. Geol. Bull. 40(2):295-376.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; biology; geology; sediment; benthos;

01076

Parker, R.H. 1960. Ecology and distributional patterns of marine macroinvertebrates, northern Gulf of Mexico, p. 302-337. In F.P. Shephard [ed.], Recent sediments, northwest Gulf of Mexico. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: As a result of a study based on three years of biological sampling in the east Mississippi Delta region, eight macro-invertebrate assemblages are recognized, each characteristic of a specific sedimentary environment ranging from the Mississippi Delta marshes to the edge of the continental shelf northeast of the Delta proper. The eight assemblages and their corresponding environments are: (1) the delta marshes, (2) delta front and lower distributaries, (3) lower Breton Sound and lower pro-delta clayey slopes, (4) upper Breton Sound, (5) inlets, or areas of strong currents, (6) the shallow continental shelf of the Gulf of Mexico from 0 to 12 fathoms, (7) the deeper part of the continental shelf from approximately 13 fathoms to 60 fathoms, and (8) the living oyster reefs of the shallow protected bays of the Delta region. The boundaries of these environments were established by plotting the distributions of both living and dead representatives of species of invertebrates furnishing hard parts plus the distributions of living soft-bodied animals which were so abundant as to characterize regions where animals with hard parts were scarce though present. Comparison of the distribution of the hydrographic factors with the physiography of the landmasses in this area with the macro-organism distributions made it possible to formulate criteria for the interpretation of ancient environments as far back as the Miocene on the Gulf and Atlantic coasts. Paleontologic literature shows that most of the present-day delta species have been found in the Pliocene, and most of the diagnostic forms have existed since the lower Miocene. The primary factors influencing distributions of these organisms are bottom type, salinity and temperature (especially the degree of variability), turbidity of the water, and currents. It was also found that comparative rates of deposition could be estimated by the ratio of the number of living to the number of dead, in equal-size samples. A series of marine bottom communities based on the community concept of European marine ecologists is recognized on the basis of the most abundant and widespread animals.
KEYWORDS: Louisiana; coastal waters; continental shelf; continental slope; biology; geology; ecology; benthos; sediment;

01077

Parker, R.H.; Curray, J.R. 1956. Fauna and bathymetry of banks on continental shelf, northwest Gulf of Mexico. Am. Assoc. Petrol. Geol. 40(10):2428.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; geology; reef;

01078

Parra, C.G.; Forsythe, R.G.; Parsons, C.L. 1981. Gulf of Mexico satellite radar altimetry. NASA Tech. Mem. 73295. 230 p. NTIS order No. N81-33760/2.

ABSTRACT: The GEOS-3 satellite, the first dedicated radar altimeter used to obtain oceanographic data, was previously employed in an altimetry study of the South Atlantic Bight. Principal data products were ocean dynamic heights, significant wave heights, and surface wind speeds. In the present study, GEOS-3 in conjunction with another satellite, SEASAT, gathered similar information for the Gulf of Mexico. The objectives were (1) to provide satellite altimetry information for the Gulf of Mexico, and (2) to compare results (sea surface elevation, significant wave heights, surface wave heights) from two satellites over the same area. Data from passes of each satellite over the Gulf of Mexico from Spring 1975 to Fall 1978 for GEOS-3 and from Spring to Fall 1978 for SEASAT were recorded and analyzed.
KEYWORDS: Gulf of Mexico; physical; remote sensing; wave; wind;

01079

Patriquin, D.G.; Knowles, R. 1972. Nitrogen fixation in the rhizosphere of marine angiosperms. Mar. Biol. 16:49-58.

ABSTRACT: High rates of acetylene reduction were observed in systems containing excised rhizomes of the Caribbean marine angiosperms Thalassia testudinum, Syringodium filiforme and Diplanthera wrightii, and the temperate marine angiosperm Zostera marina. For 4 plant and plant-sediment systems the ratio of acetylene reduced/N2 fixed varied from 2.6 to 4.6. For T. testudinum the estimated rates of nitrogen fixation are in agreement with estimated requirements of the plant for nitrogen. For typical T. testudinum stand, N2 fixation is estimated to be 100 to 500 kg N/hectare per year. Numbers of N2-fixing bacteria in the rhizosphere sediments were roughly 50 to 300 times more abundant than those in the non-rhizosphere sediments, and in both types of sediments were of the same orders as the estimated numbers of heterotrophic aerobes.
KEYWORDS: chemistry; biology; seagrass; nutrient; nitrogen;

01080

Patton, S.J.; Rigler, M.W.; Boehm, P.D.; Fiest, D.L. 1981. Ixtoc 1 oil spill: flaking of surface mousse in the Gulf of Mexico. Nature 290(5803):235-238.

ABSTRACT: The blowout at the Ixtoc 1 offshore oil rig in the Gulf of Mexico (19 24'N, 92 12'W) produced an estimated 140 million gallons of oil before the well was finally capped. The well released oil for 9 months into the open ocean where winds and currents dispersed the floating mousse (a light brown and orange water-in-oil emulsion) which had formed at the wellhead. Two and a half months after the blowout the western boundary current in the Gulf of Mexico had brought mousse to the American shore. An ultra-thin sheen also formed from the oil and was visible as a smoothness of sea-surface texture relative to the slightly rougher unpolluted waters. The authors report here that at a distance of 750-1000 km from the well, Ixtoc 1 mousse occurred on sheen-covered sea surface primarily as gramme-sized pancakes and milligramme-sized flakes. Relative to pancakes, flakes were more dense, depleted in aliphatic compounds and enriched in polar compounds. Both particles were covered with a brittle 5-10 m skin. Pancakes, skin, flakes and surface sheen seem to represent the four macroscopic component part of a pelagic weathering cycle of Ixtoc 1 mousse.
KEYWORDS: Texas; Mexico; continental shelf; oil and gas; oil spill; chemistry; hydrocarbon; Ixtoc;

01081

Pavela, J.S.; Ross, J.L.; Chittenden, M.E., Jr. 1983. Sharp reductions in abundance of fishes and benthic macroinvertebrates in the Gulf of Mexico off Texas associated with hypoxia. N.E. Gulf Sci. 6(2):167-173.

ABSTRACT: The reduced abundance and elimination of both fish and shrimp, coincident with hypoxia off Texas, is documented, presenting also general observations on decreases in common benthic macroinvertebrates.
KEYWORDS: Texas; coastal waters; continental shelf; biology; fish; benthos; hypoxia; dissolved oxygen;

01082

Pawlyk, P.; Roberts, K. 1986. Interrelationships between public and private oyster grounds in Louisiana: Economic perspectives. Louisiana Sea Grant Pub. No. LSU-T-86-005. 12 p.

ABSTRACT: None.
KEYWORDS: Louisiana; fisheries; socioeconomics; fishery management; oyster;

01083

Pearson, J.C. 1929. Natural history and conservation of redfish and other commercial sciaenids on the Texas coast. Bull. U.S. Bur. Fish. 44:129-214.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; biology; fisheries; fish; drum;

01084

Pechmann, K.B.; Ellis, J.O.; Everdale, F.G.; Green, S.Z.; Sheifer, I.C.; Stern, M.K. 1986. Marine environmental assessment. Gulf of Mexico 1985 annual summary. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Environmental Satellite Data and Information Service. Washington, DC. 114 p.

ABSTRACT: The Gulf of Mexico 1985 annual assessment presents a synoptic view of several economic sectors and their direct and indirect relations to the physical and biological aspects of the marine and atmospheric environments. The report brings into focus the numerous commercial, social, and scientific activities in the Gulf relative to environmental conditions, particularly weather and oceanographic events or trends.
KEYWORDS: Gulf of Mexico; biology; physical; oil and gas; socioeconomics; fisheries; recreation; meteorology; shipping; dredging; oil spill; wildlife; transportation;

01085

Pecora, R.A. 1980. Observations on the genus Vaucheria xanthophyceae vaucheriales from the Gulf of Mexico. Gulf Res. Rep. 6 (4):387-392.

ABSTRACT: Investigations of algal mats from several locations along the Gulf of Mexico from Cameron Parish, Louisiana, to Manatee County, Florida [USA], were conducted from Feb. 1979-Feb. 1980. Habitat preference, distribution and morphology are reported for 9 spp. and 1 variety of Vaucheria de Candolle. Five taxa, i.e., V. arcassionensis, V. aversa, V. coronata, V. prolifera var. reticulospora, and V. pseudogeminata are 1st reports for the Gulf of Mexico coastal region. V. velutina (= V. thuretii), the most abundant taxon identified in the region, is common in diverse habitats. V. prolifera var. reticulospora is reported for the 1st time in North America from coastal Mississippi. [The other species reported are: V. adela, V. erythrospora, V. nasuta, V. synardra and V. velutina.]
KEYWORDS: Louisiana; Mississippi; Alabama; Florida; biology; flora; taxonomy;

01086
Penland, S.; Boyd, R. 1981. Shoreline changes on the Louisiana barrier coast. Oceans 1981:209-219.

ABSTRACT: None
KEYWORDS: Louisiana; barrier island; geology; erosion; sedimentation;

01087
Penland, S.; Boyd, R. 1982. Assessment of geological and human factors responsible for Louisiana coastal barrier erosion, p. 14-38. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences, and Options, October 5-7, 1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: Louisiana's coastal barrier systems are experiencing severe shoreline erosion and land loss. Between 1880 and 1980, total coastal barrier area decreased from 98.6 km*2* to 57.8 km**2, an overall loss of 41%. Coastal barrier land loss results from the natural processes of deltaic transgression and marine erosion, combined with the impact of human development. A three-stage model for the evolution of abandoned Mississippi deltas describes deltaic transgression. Sand bodies deposited during delta building are successfully transformed after abandonment into an erosional headland and flanking barriers (Stage 1), a transgressive barrier island arc (Stage 2), and a subaqueous inner-shelf shoal (Stage 3). Barrier erosion trends closely correspond to the pattern of sediment dispersal identified for each barrier evolutionary stage. Barrier islands in the erosional headland and flanking barrier stage are essentially in a state of dynamic equilibrium, due to the presence of a deltaic headland sand source. Transgressive barrier island arcs do not contain such a sediment source, and hence suffer net erosion. The principal mechanisms of transgression are subsidence combined with repeated erosion by extra-tropical and tropical cyclones. Coastal barrier sediment loss, hence land loss, can be attributed to the following mechanisms: (1) longshore loss into spits and tidal deltas, (2) landward loss through overwash into a subsiding lagoon, (3) offshore loss due to an inequality in offshore/onshore transport capacity, and (4) subsidence of the deltaic sand sources. Human impacts that result in accelerated coastal barrier deterioration include coastal structures, pipeline canals, and navigation channels. These man-made structures disrupt sediment transport pathways and create additional sediment sinks.
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; marsh; coastal waters; geology; erosion; sedimentation; dredging; pipeline; environmental impact;

01088
Penland, S.; Boyd, R. [ed.]. 1985. Transgressive depositional environments of the Mississippi River Delta plain: A guide to the barrier islands, beaches, and shoals in Louisiana. Louisiana Geological Survey, Baton Rouge, LA. Guidebook Series No. 3.

ABSTRACT: None
KEYWORDS: Louisiana; barrier island; beach; geology; erosion; sedimentation;

01089
Penland, S.; Boyd, R.; Nummedal, D.; Roberts, H.H. 1981. Deltaic barrier development on the Louisiana Coast. Trans. Gulf Coast Assoc. Geol. Soc. 31:368. (Abstract).

ABSTRACT: An evolutionary sequence of modern deltaic sandy barriers is recognizable on the Louisiana coast. Each barrier island system has developed during the destructional phase of one of the major Holocene Mississippi River deltas. Three distinct evolutionary stages are identified within the destructive phase of the deltaic cycle. Major distributary abandonment transforms a delta complex into Stage 1, an erosional headland with flanking barrier islands. With increasing age, subsidence, marine reworking, and further subaerial delta deterioration, the barrier system evolves into Stage 2, a transgressive barrier island arc and eventually culminates in its final form, Stage 3, an inner shelf shoal. This three stage model provides a conceptual framework for examining the temporal as well as spatial evolution of a Mississippi River deltaic barrier system. It further provides a means of evaluating the relevance of existing concepts for barrier island genesis.
KEYWORDS: Louisiana; Mississippi River Delta; barrier island; geology; sediment; erosion; geologic history;

01090
Penland, S.; Suter, J.; Nakashima, L. 1986. Protecting our barrier islands. Louisiana Conservationist 38(1):22-25.

ABSTRACT: None
KEYWORDS: Louisiana; barrier island; beach; geology; erosion; sedimentation;

01091

Penland, S.; Suter, J.R. 1984. Process response models for Gulf Coast barrier island breaching. Trans. Gulf Coast Assoc. Geol. Soc. 36:397-400.

ABSTRACT: The analysis of 17 tropical cyclone impacts along the U.S. Gulf Coast leads to the following conclusions regarding barrier island breaching: 1) tropical cyclones are the mechanisms of barrier island breaching, 2) landward and seaward overwash flow can breach barrier islands, 3) storm track orientation controls the direction of barrier island breaching, 4) shore-normal and right-oblique hurricane impacts breach barrier islands by landward overwash flow, and 5) left-oblique hurricane impacts breach barrier island by seaward overwash flow.
KEYWORDS: Gulf of Mexico; barrier island; coastal waters; geology; physical; hurricane; model; erosion;

01092

Pequegnat, L.H. 1979. Pelagic tar concentrations in the Gulf of Mexico over the south Texas continental shelf. Contrib. Mar. Sci. 22:31-40.

ABSTRACT: Dry weight of tar from 189 neuston samples over the South Texas continental shelf ranged from 0-31.86 mg/m2 suring a 2-yr (1976-1977) monthly monitoring study with an overall average of 1.66 mg/m2. This average is not inconsistent with previously reported averages for the Gulf of Mexico, which are considerably lower than tar values reported for the Mediterranean and Sargasso Seas. Inshore stations and offshore stations averaged slightly lower tar concentrations (1.24 and 1.43 mg/m2) than the intermediate positioned stations (2.30 mg/m2) on all transects. Monthly average tar concentrations varied, but highest values occurred in the spring (March-April, 6.7 and 5.8 mg/m2) and Dec. (3.3 mg/m2). Two northern transects, one off the Port Aransas-Corpus Christi area and the other off the Port Lavaca-Port O'Connor area, averaged considerably higher tar values (1.47 and 2.32 mg/m2) than the 2 more southerly transects (0.54 and 0.27 mg/m2).
KEYWORDS: Texas; continental shelf; chemistry; oil and gas; hydrocarbon;

01093

Pequegnat, W.E. 1983. The ecological communities of the continental slope and adjacent regimes of the northern Gulf of Mexico. Report by TerEco Corporation to the Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. Contract No. AA851-CT1-12. 2 vol. NTIS order Nos. PB84-113406 and PB84-113398.

ABSTRACT: This report deals in part with the macrofaunal assemblages that exist in that part of the shelf of the Gulf of Mexico that lies north of the 25th parallel and west of the eastern wall of DeSoto Canyon. The study was based on 264 oceanographic stations occupied by R/V ALAMINOS in depths ranging from 150 to 3850 m. Statistical analyses support subdividing the principal megabenthic components (echinoderms, crustaceans, and demersal fishes) of the assemblages into five well-defined faunal zones, four of which (Shelf-Slope Transition, Archibenthal, Upper Abyssal, and Mesoabyssal) are on the continental slope, and the fifth, the Lower Abyssal, occupies the continental rise and abyssal plain. The faunal assemblages comprising the zones are described in considerable detail and the numerically dominant species among important systematic groups are designated within each zone and its subdivisions. The geological, physicochemical, and biological bases for existence of zones and zonal subsets are discussed in detail, including an attempt to account for faunal differences between the eastern and western parts of the Gulf. Taking the area of the study as the deep Gulf ecosystem, the report also deals with the energy relationships among the biotic components of the system. Tentative explanations of the sources of energy that can balance the energy budget on the abyssal plain are advanced and discussed. The report contains three substantial appendices. Appendix A is an atlas of bottom photographs selected to depict some of the biological constituents, physiography and surficial sediments of the five faunal zones. Appendix B contains a list of the species taken at the oceanographic stations and relates them to the related Lease Block. Appendix C presents an annotated bibliography of publications dealing with the oceanography of the Gulf of Mexico.
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; continental shelf; continental slope; deep sea; biology; geology; benthos; sediment;

01094

Pequegnat, W.E.; Darnell, R.M.; James, B.M.; Kennedy, E.A., Jr.; Pequegnat, L.H.; Turner, J.T. 1976. Ecological aspects of the upper continental slope of the Gulf of Mexico. Report to Bureau of Land Management, New Orleans, LA. Contract No. 08550-CT4-12. 360 p.

ABSTRACT: This report addresses the benthic ecology of the upper continental slope in the northern Gulf of Mexico. The physiography of the Gulf is summarized, as are various physico-chemical aspects of the pelagic realm. Discussions of the pelagic biota are presented, though the major thrust of the report is toward synthesizing the benthic ecology.
KEYWORDS: Gulf of Mexico; continental slope; biology; geology; physical; chemistry; ecology;

01095
Pequegnat, W.E.; Smith, D.D.; Darnell, R.M.; Presley, B.J.; Reid, R.O. 1978. An assessment of the potential impact of dredged material disposal in the open ocean. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. 645 p.

ABSTRACT: None
KEYWORDS: United States; coastal waters; continental shelf; biology; chemistry; fisheries; geology; meteorology; benthos; dredging; environmental impact; ocean dumping;

01096
Pequegnat, W.E.; Venn, C. 1980. Meiofauna project. Chapter 12. In R.W. Flint and N.N. Rabalais [ed.], Environmental studies, south Texas outer continental shelf, 1975-1977. Vol. III, Study area final reports. Report to the Bureau of Land Management, New Orleans, LA. Contract No. AA551-CT8-51.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; biology; benthos; ecology; STOCS;

01097
Perez-Farfante, I. 1969. Western Atlantic shrimps of the genus Penaeus. Fish. Bull. 67(3):461-591.

ABSTRACT: Four subgenera of the genus Penaeus are described. Eight species and sub- species are recognized as occurring in the Western Atlantic. Synonomies are given. Diagnosis, descriptions and illustrations are presented for each species and subspecies. Geographic and bathymetric distributions are given. A brief appraisal of the commercial importance of each form is also given.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; biology; ecology; shrimp; fisheries; taxonomy;

01098
Perlmutter, M.A. 1985. Deep water clastic reservoirs in the Gulf of Mexico: A depositional model. Geo-Mar. Lett. 5(2):105-112.

ABSTRACT: A conceptional model has been developed relating the deposition of thick sand sequences in deep water regions of the Gulf of Mexico to episodes of high volume Mississippi River discharge. In accordance with the model, coarse sand units are deposited by turbidity currents as submarine fans on the lower slope and in the deep basin during periods of rapid glacial melting. These sands are predicted to be more extensive and cleaner than those deposited under glacial and interglacial conditions.
KEYWORDS: Gulf of Mexico; continental slope; geology; geologic history; model; sedimentation; glaciation;

01099
Perret, W.S. 1971. Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase IV, biology, p. 31-175. In Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase I, area description and phase IV, biology. Louisiana Wildlife and Fisheries Commission, New Orleans, LA.

ABSTRACT: The Cooperative Gulf of Mexico Estuarine Inventory and Study was initiated and designed to study the physical and biological characteristics of the estuarine areas of the northern Gulf Coast. Phase IV, Biology is a survey of marine species related to commercial fishery and data on historical commercial fisheries. Biological sampling was conducted in six estuarine study areas of Louisiana. A total of 82 trawl, 12 seine and 28 plankton stations were sampled weekly, biweekly or monthly, from April, 1968 through March, 1969. A total of 100 species of fishes and 19 species of invertebrates were collected. Areal and seasonal distribution of those species are discussed. Zooplankton results indicated a spring and fall maximum in all six study areas. Total counts ranged from a minimum of 116 per 100 cubic meters to a maximum of 377,393 per 100 cubic meters. The relationship between zooplankton abundance and commercial fishing is suggested. The author also suggests further research to correlate physical, chemical and biological parameters to seasonal zooplankton abundance.
KEYWORDS: Louisiana; estuary; biology; fisheries; ecology; plankton;

01100

Perret, W.S.; Barrett, B.B.; Latapie, W.R.; Pollard, J.F.; Mock, W.R.; Adkins, G.B.; Gaider, W.J.; White, C.J. 1971. Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase I, area description, p. 3-27. In Cooperative Gulf of Mexico estuarine inventory and study, Louisiana. Phase I, area description and phase IV, biology. Louisiana Wildlife and Fisheries Commission, New Orleans, LA.

ABSTRACT: The Cooperative Gulf of Mexico Estuarine Inventory and Study was initiated and designed to study the physical and biological characteristics of the estuarine areas of the northern Gulf Coast. It also attempted to document the importance of these areas to commercial fisheries and establish a base line from which the effects of estuarine alterations could be evaluated. The basic data of the Area Description Phase involved the following: (1) vegetation type mapping; (2) calculation of surface water acreages and water volumes; (3) freshwater discharge into the estuarine zone; (4) public, private and artificial reefs which would indicate the distribution and abundance of the system resources; (5) population statistics; (6) sources of pollution; and (7) an economic appraisal of the importance of the commercial fishery. The information is useful in the management of estuarine resources by presenting data comparisons between past years' data and recent information.
KEYWORDS: Louisiana; estuary; marsh; barrier island; coastal waters; socioeconomics; biology; physical; fisheries; ecology;

01101

Perret, W.S., Caillouet, C.W. 1974. Abundance and size of fishes taken by trawling in Vermilion Bay, Louisiana. Bull. Mar. Sci. 24:52-75.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Vermilion Bay; biology; fisheries; fish; fishing gear;

01102

Perry, A. 1979. Fish of Timbalier Bay and offshore Louisiana environments collected by trawling, p. 537-545. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; oil and gas; fish; environmental impact; Offshore Ecology Investigation;

01103

Perry, H.M.; Malone, R.F. 1985. National symposium on the soft-shelled blue crab fishery, held at Biloxi, Mississippi on February 12-13, 1985. Conference Proceedings, Mississippi-Alabama Sea Grant Consortium, Ocean Springs, MS. Rep. No. MASGP-86-017. 125 p. Also Louisiana Sea Grant Coll. Program, Baton Rouge, Rept. No. LSU-W-85-002. NTIS order No. PB87-137659/XAB.

ABSTRACT: Topics include physiology of the blue crab (Callinectes sapidus Rathbun) during a molt; blue crab viruses and the diseases they cause; involvement of Vibrio spp. in soft crab mortality; the crustacean molt cycle and hormonal regulation: its importance in soft shell blue crab production; post-molt calcification in the blue crab; the fishery for soft crabs: rules and regulations, management implications; chemical addition for accelerated nitrification of biological filters in closed blue crab shedding systems; elimination of oxygen deficiencies associated with submerged rock filters used in closed recirculating aquaculture systems; design considerations in marine aquaculture systems; profitability components of closed blue crab shedding systems in the Gulf of Mexico; the development of an export market for soft crabs: Japan; microbial and nutritional attributes of soft crabs.
KEYWORDS: Gulf of Mexico; fisheries; biology; socioeconomics; blue crab;

01104

Perry, H.M.; McIlwain, T.D. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates, Gulf of Mexico. Blue crab. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.55). 21 p.

ABSTRACT: None
KEYWORDS: estuary; coastal waters; biology; benthos; ecology; physiology; blue crab;

01105
Petrazzuolo, G. 1983. Environmental assessment: drilling fluids and cuttings released onto the OCS. Draft final technical support document, U.S. Environmental Protection Agency, Washington, DC. 184 p.

ABSTRACT: This review includes a discussion of environmental fate of drilling discharges, a review of environmental effects studies (both field and laboratory), and a hazard assessment section integrating fate and effects information.
KEYWORDS: United States; continental shelf; oil and gas; biology; chemistry; physical; trace metal; hydrocarbon; drilling fluid; cuttings; environmental impact;

01106
Phares, P.L. 1980. Estimates of natural and fishing mortality for white shrimp in the Gulf of Mexico. National Marine Fisheries Service, Southeast Fisheries Center, Miami, FL. NOAA-TM-NMFS-SEFC-58. 25 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; fisheries; fishery statistics; shrimp;

01107
Phares, P.L. 1980. Tail length to tail weight relationships for Louisiana white shrimp in 1977. NOAA Tech. Mem. NMFS-SEFC-57.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; coastal waters; biology; fisheries; shrimp;

01108
Phares, P.L. 1980. Temperature associated growth of white shrimp in Louisiana. NOAA Tech. Mem. NMFS-SEFC-56. 19 p.

ABSTRACT: None
KEYWORDS: Louisiana; biology; fisheries; shrimp; physiology;

01109
Phleger, F.B. 1967. Some problems in marine geology, Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 17:173-178.

ABSTRACT: The geologic history, or paleoceanography, of a marine basin such as the Gulf of Mexico is interpreted primarily from the sedimentary record. Many basic research problems in sedimentology can be profitably studied in the Gulf because much descriptive work already has been done, and it is a relatively small marine basin which is easily accessible. Some problems in transport of detrital sediment are 1) possible by-passing of coastal lagoons and 2) the lack of modern cycle detrital sediment on much of the outer continental shelf. Is the modern sediment which reaches the open ocean being trapped in many places on the inner continental shelf? If so, how can the post-glacial deposits in the Sigsbee Deep be explained? Is this deep basin sediment by-passing the outer shelf, and if so, what is the mechanism of transport? The rate of supply of organic debris to the Gulf sediments depends on the rate of organic production. High organic production near river effluents and in hypersaline lagoons deserves further investigation. The rate of supply of organogenic calcium carbonate from planktonic organisms and the rate of solution of calcium carbonate are of special interest. An understanding of shelf-edge calcareous reefs may have far-reaching implications. An understanding of marine processes which affect the characteristics and distribution of sediments will require observations and analyses by new techniques.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; geologic history; sediment; stratigraphy;

01110
Phoel, W.C. 1983. In situ quantification on oil entering an estuary under protective booms, p. 431-433. In OCEANS '83 Conference Record. Effective use of the sea: an update. San Francisco, August 29 - September 1, 1983. Volume 1: technical papers, ocean science, ocean engineering.

ABSTRACT: After an exploratory oil well (IXTOC I) blew out in the Gulf of Mexico in June 1979, three million gallons of oil were estimated to impact the Texas coast, primarily along Padre Island. Booms, either complete or staggered, were placed across the inlets to prevent oil from entering the environmentally sensitive estuaries, including the Laguna Madre. These estuaries are important nesting areas for birds and nursery areas for fish and other marine life. There was concern that subsurface oil of substantial quantities was entering the estuaries under the booms during flood tides. Diving investigations at the booms to observe and quantify the amount of subsurface oil entering the estuaries indicated that between zero and 100 kg of weathered oil was entering the Laguna Madre per day.
KEYWORDS: Texas; estuary; Laguna Madre; oil and gas; oil spill; environmental impact; Ixtoc;

01111
Pierce, E.L. 1964. Chaetognatha from the Texas coast. Publ. Inst. Mar. Sci. Univ. Tex. 8:147-152.

ABSTRACT: Three genera and 11 species of chaetognaths were identified from collections in the bays and along the Texas coast. No marked difference was noted between the faunas of the west coast of Florida and the Texas coast. Other studies show the same species of chaetognaths are present along the coast from Cape Hatteras around the Gulf and extending into Central American waters.
KEYWORDS: Texas; estuary; coastal waters; biology;

01112
Pierce, R.H.; Anne, D.C.; Saksa, F.I.; Weichert, B.A. 1985. Fate of organic compounds from spent drilling fluid discharged into sea, p. 223-241. In I.W. Duedall, D.R. Kester, P.K. Park, and B.H. Ketchum, [ed.], Environ. Sci. Technol. Wastes in the Ocean. Volume 4. Energy wastes in the ocean.

ABSTRACT: A 27,000-liter surface discharge of drilling fluid in the vicinity of the Texas Flower Garden Banks was monitored from an operating oil rig approximately 80 km to the northeast of the reefs in the Gulf of Mexico during June 1980. Sediment, suspended particles, and water samples were collected near the rig during and after the discharge to track the discharge drilling fluid. The organic constituents found to be the most useful as tracers for the dispersion of spent drilling fluid were ferrochrome lignosulfonate and petroleum hydrocarbons. Ferrochrome lignosulfonate dissolved readily when dispersed in seawater whereas the petroleum was primarily associated with the particulate fraction. Field samples showed a uniform distribution of biologically derived hydrocarbons (0.2-0.8 micrograms/liter) associated with suspended matter at the pycnocline. Surficial sediment throughout the study area contained similar hydrocarbon content (7-15 micrograms/gram) (dry wt) indicative of weathered crude oil. The drilling fluid discharge was collected and analyzed for particulate and dissolved petroleum and ferrochrome lignosulfonate. No significant difference from the background samples was observed, due probably to rapid dispersion of the drilling fluid, which was discharge as a spray above the sea surface.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; oil and gas; physical; chemistry; drilling fluid;

01113
Pilger, R.H. 1981. The opening of the Gulf of Mexico: Implications for the tectonic evolution of the Northern Gulf Coast. Trans. Gulf Coast Assoc. Geol. Soc. 31:377-381.

ABSTRACT: Several lines of evidence suggest that the Gulf of Mexico opened synchronously with and in the same, northwest-southeast, direction as the central North Atlantic, from about 180 to 130 Ma. The Atlantic and Gulf spreading centers were linked by left-lateral transform faults across the Florida-Bahamas platform. To the west, spreading was accommodated by left- lateral transform faults (megashears) across Mexico. The basin and uplift structure of the northern Gulf Coast can be interpreted in terms of northwest-southeast rifting before Gulf and Atlantic opening began. Alternatively, early rifting could have been a result of north-south motion between North America and Africa-South America. The latter inference is suggested by correlations between pre-Mesozoic Florida and Africa basement terrains as well as the crustal fabric of the northern Gulf Coast. Basin formation in the northern Gulf Coast probably involved shallow, close-spaced graben-horst formation combined with larger scale ductile thinning of the lower crust during rifting. Following the end of rifting the sedimentary record indicates that the basin subsided in and exponential manner, as would be predicted from thermal models of sedimentary basin formation.
KEYWORDS: Gulf of Mexico; geology; geologic history;

01114
Poag, C.W. 1973. Late Quaternary sea levels in the Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 23:394-400.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; geology; glaciation; sea level; geologic history;

01115
Poag, C.W. 1984. Distribution and ecology of deep-water benthic foraminifera in the Gulf of Mexico. Palaeogeogr. Palaeoclimatol. Palaeoecol. 48 (1):25-37.

ABSTRACT: Bathyal and abyssal foraminifera in the Gulf of Mexico are distributed among thirteen generic predominance facies. Five predominance facies nearly encircle the Gulf basin along the slope and rise a sixth predominance facies blankets the Sigsbee Plain, and a seventh is restricted to the Mississippi Fan. The remaining eight predominance facies have more restricted distributions. The areal patterns of these predominance facies can be related chiefly to water mass and substrate characteristics modifications are brought about by calcite dissolution, upwelling and sill depth. Analysis of ancient generic predominance facies is useful in predicting relative paleobathymetry and other paleoenvironmental properties.
KEYWORDS: Gulf of Mexico; continental slope; geology; biology; foraminifera;

01116

Poag, C.W.; Tressler, R.C. 1981. Living foraminifers of West Flower Garden Bank, northernmost coral reef in the Gulf of Mexico. Micropaleontology 27 (1):31-70.

ABSTRACT: Living benthic foraminifers representing 73 genera and 104 spp. were collected from sediments and hard substrates sampled on the submerged coral reef and biostrome at West Flower Garden Bank, on the outer Texas-Louisiana Continental Shelf. Three habitat associations are recognized: association of abundant sediment-dwelling species; association of abundant species dwelling on hard substrates; and association dwelling in abundance both in the sediments and on hard substrates. Only 16 (15%) of the West Flower Garden Bank species are endemic to the Gulf of Mexico; 85 (82%) occur elsewhere in the Caribbean and 54 (52%) also occur in the tropical Indo-Pacific. Species (31, 29%) are reported herein for the 1st time from the Gulf of Mexico, and 12 additional species (12%) are reported for the 1st time from the northwestern Gulf. Fifteen other species (14%) appear to be undescribed in previous literature. Many of the newly reported species are abundant at West Flower Garden Bank, and several other species known only sparsely from other Gulf and Caribbean reefs are important constituents of the West Flower Garden Bank foraminiferal community. These results emphasize the value of direct sampling techniques that recover hard reef substrates. [Morphology of some species is discussed.]
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; foraminifera; reef; taxonomy;

01117

Poffenberger, J. 1982. Estimated impacts of Texas closure regulation on ex-vessel prices and value, 1981 and 1982. National Marine Fisheries Service, Charleston, SC. Rep. No. NOAA-TM-NMFS-SEFC-111. 37 p. NTIS order No. PB83-247189.

ABSTRACT: The area seaward of the Territorial Sea off the Coast of Texas was closed to shrimp fishing concurrently with the closure by Texas of their Territorial Sea from May 25 through July 14, 1982. The NMFS also monitored various aspects of the closure regulation's effects during and immediately following the 1982 period and the purpose of this report is to present the analytical findings regarding the closure's effects on ex-vessel prices and value. The report also provides the estimated effects of the 1981 closure regulation for the twelve-month period beginning in May and ending in April 1982. The theoretical rationale supporting this analysis is a straightforward result of shrimp being a 'normal' good in which the demand for a product is inversely related to its prices.
KEYWORDS: Texas; coastal waters; continental shelf; biology; fisheries; socioeconomics; shrimp;

01118

Pokryfki, L.; Randall, R.E. 1987. Nearshore hypoxia in the bottom water of the northwestern Gulf of Mexico from 1981 to 1984. Mar. Environ. Res. 22 (1):75-90.

ABSTRACT: Hypoxia, and occasionally anoxia, occur annually in the northern Gulf of Mexico. Important physical properties preceding and partially causing hypoxia and the spatial extent of hypoxia are determined. Temporal trends of salinity, temperature, sigma-t, bottom dissolved oxygen, and river discharge offshore Cameron, Louisiana, are described and statistically analyzed using four years (1981-1984) of monthly data. A cruise was conducted in July 1984 to measure the spatial extent of hypoxia in coastal waters from Galveston, Texas, to 74 km east of Cameron, Louisiana. A 'best-fit' linear model estimating bottom dissolved oxygen concentrations contained the salinity and temperature variables. Time series analysis of the data revealed time lags between low bottom dissolved oxygen and peak river discharge (2 month lag), and low salinity (1 month lag). The time series model using the river discharge and density gradient variables more accurately predicted bottom dissolved oxygen concentrations during hypoxic events.
KEYWORDS: Louisiana; Texas; coastal waters; chemistry; hypoxia; dissolved oxygen; salinity; temperature;

01119

Pollard, J.F. 1973. Experiments to reestablish historical oyster seed grounds and to control the southern oyster drill. Louisiana Wildlife and Fisheries Commission, Division of Oysters, New Orleans, LA. Technical Bulletin No. 6. 89 p.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; biology; fisheries; oyster; reef;

01120
Portnoy, J.W. 1977. Nesting colonies of seabirds and wading birds--coastal Louisiana, Mississippi and Alabama. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-77/07. 126 p.

ABSTRACT: From February to August 1976, personnel of the Louisiana Cooperative Wildlife Research Unit surveyed the gull, tern, skimmer, pelican, cormorant, anhinga, heron, egret, and ibis colonies along the Louisiana-Mississippi- Alabama coast. One hundred sixty-eight colonies, including over 847,000 breeding birds of 26 species, were found in coastal habitats ranging from swamp forests to coastal marshes and barrier islands. Colonies were mapped on 1:250,000 scale USGS maps and cataloged by latitude and longitude coordinates. Abundance was tabulated by species, salinity, and habitat type. Nesting chronology of the common breeders was outlined. Heronries were active from February through July; seabird colonies, from April through August. Aerial and ground-based inventory techniques were used. Reliability of the various census and sampling methods for the 26 species in diverse nesting situations was evaluated. Aerial photography produced accurate censuses of incubating great egrets (Casmerodius albous), sandwich terns (Thalasseus sandvicensis), and royal terns (Thalasseus maximus). Randomly placed 2-m-wide belt transects yielded representative samples of active heron, egret, and ibis nests in large shrub colonies. Only 18 of the 168 colonies were protected by posting or by restricting human access.
KEYWORDS: Alabama; Louisiana; Mississippi; marsh; barrier island; biology; ecology; bird; endangered species;

01121
Potts, D.L. 1979. Phragmatopoma-lapidosa (Polychaeta:Sabellariidae) recorded from the western Gulf of Mexico. Tex. J. Sci. 31 (4):370.

ABSTRACT: None
KEYWORDS: Texas; biology; reef; benthos; taxonomy;

01122
Powell, E.N.; Bright, T.J. 1981. A thiobios does exist--Gnathostomulid domination of the canyon community at the East Flower Garden brine seep. Int. Rev. ges. Hydrobiol. 66(5):675-683.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; reef; biology; benthos; sulfur; seep;

01123
Powell, E.N.; Bright, T.J.; Brooks, J.M. 1986. The effect of sulfide and an increased food supply on the meiofauna and macrofauna at the East Flower Garden brine seep. Helgolander Meeresunters. 40:57-82.

ABSTRACT: A sulfurous brine seep at the East Flower Garden Bank, northwest Gulf of Mexico, produces conditions conducive to the growth of a luxuriant prokaryotic biota. Hydrodynamic cropping continually harvests this biota and distributes it to sandy bottom and hard-bank benthic communities downstream of the seep. Consequently, both macro- and meiofaunal abundances are dramatically increased above the regional norm in parts of the seep system. When sulfide is present, the lower Bilaterian groups belonging to the meiofauna dominate the community; without sulfide, macrofaunal groups, particularly crustaceans, dominate the community. Outside the influence of the seep, meiofaunal copepods predominate. Changes in taxonomic composition and abundance indicate that the sandy bottom benthos at 70-80 m depth at the East Flower Garden bank is food limited and that, under these conditions, meiofauna, particularly the higher Bilaterian groups, dominate the community numerically. Perhaps, under food-limiting conditions, meiofauna compete favorably with macrofauna for food.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; chemistry; sulfur; seep; reef;

01124
Powell, E.N.; Bright, T.J.; Gittings, S.R. 1983. Meiofauna and the thiobios in the East Flower Garden brine seep. Mar. Biol. 73:269-283.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; reef; biology; benthos; sulfur; seep;

01125

Powell, E.N.; Connor, S.J.; Kendall, J.J., Jr.; Zastrow, C.E.; Bright, T.J. 1984. Recovery by the coral Acropora cervicornis after drilling mud exposure. The free amino acid pool. Arch. Environ. Contam. Toxicol. 13:243-258.

ABSTRACT: Corals were exposed to drilling mud for 24 hr and then allowed to recover for 48 hr in clean seawater. Depending on the concentration and the mud used, exposure produced either an increase or decrease in the free amino acid (FAA) pool size. Aspartate was affected to a greater degree than the other amino acids. No clear instance of recovery could be ascertained after 48 hr in clean seawater. In several cases, corals apparently unaffected by a 24-hr exposure nevertheless suffered significant changes in the FAA pool during the 48-hr recovery period. Thus, the degree of toxicity of the drilling mud could not be accurately predicted from the 24-hr exposure data. In many cases, the choice of a normalizing parameter determined whether two sets of data were significantly different or not. Accurate effects assessment depends on a comparison of several methods of normalization to confirm statistical results.
KEYWORDS: biology; oil and gas; drilling fluid; environmental impact; benthos; physiology;

01126

Powell, E.N.; Kendall, J.J., Jr.; Connor, S.J.; Zastrow, C.E.; Bright, T.J. 1984. Effect of eight outer continental shelf drilling muds on the calcification rate and free amino acid pool of the coral Acropora cervicornis. Bull. Environ. Contam. Toxicol. 33:362-372.

ABSTRACT: None
KEYWORDS: biology; oil and gas; drilling fluid; environmental impact; benthos; physiology;

01127

Powell, J.A.; Rathbun, G.B. 1984. Distribution and abundance of manatees along the northern coast of the Gulf of Mexico. N.E. Gulf Sci. 7(1):1-28.

ABSTRACT: A review of historical and recent records of manatee (Trichechus manatus) sightings along the coast of the northern Gulf of Mexico indicates that their numbers have declined in Texas, but increased in Louisiana and Mississippi. This is due to their extirpation in Mexico and dramatic increase along the southern Big Bend coast of Northwestern peninsular Florida. The distribution of manatees along the southern Big Bend coast is related to their need for warm water and the distribution of fresh water and submerged aquatic and marine food plants. The spring-fed headwaters of Crystal and Homosassa rivers are important warm water winter refuges; nearly 90 percent of the same individuals return each winter. The estuaries and grass beds associated with these two rivers and the Suwannee, Withlacoochee, and Chasshowitzka rivers are the principal summer habitats. The Suwannee and Crystal rivers are "high-use" rivers, whereas the other three are "low-user" rivers. Low human-caused mortality, high fecundity, some immigration, and high site fidelity are responsible for the increasing numbers of manatees using the southern Big Bend coast. Since this region of Florida has experienced relatively little development compared with the rest of the state, the best long-term future for this endangered marine mammal in the United States lies along the southern Big Bend coast.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; biology; ecology; marine mammal; endangered species;

01128

Presley, B.J.; Stearns, S. 1986. Interstitial water chemistry, Deep Sea Drilling Project, Leg 96, p. 697-709. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; chemistry; geology; sediment; Deep Sea Drilling Project;

01129

Presley, B.J.; Trefry, J.H.; Shokes, R.F. 1980. Heavy metal inputs to Mississippi delta sediments. A historical view. Water Air Soil Poll. 13:481-494.

ABSTRACT: Heavy metal concentrations were determined in suspended particulates, filtered water, and sediment collected in the Mississippi River and from its marine delta. More than 90% of the metal load of the river is associated with particulate matter, which is relatively constant in chemical composition with time and place. The Mississippi River suspended material is similar to average crystal rocks in Fe, Al, V, Cr, Cu, Co, Mn, and Ni concentration but is generally enriched in Zn, Cd, and Pb. Sediment cores dated by the Pb-210 method show that the Cd and Pb enrichments are recent phenomenon and are most likely due to the activities of man. About 6000 tonne of Pb and 300 tonne of Cd are being added to the delta sediments by man each year, more than 30 times the amount added to the Southern California Bight. River particulate matter is essentially identical to deltaic sediments in Al, Fe, Cr, V, Cd, and Pb concentration, but the sediments are depleted in Co, Cu, Mn, Ni, and Zn by 20 to 40%. Chemical leaching of the solids show the metal losses to be primarily from the oxide phase, suggesting diagenetic reduction and mobilization as a mechanism. Trace metal concentrations in filtered Mississippi river water were below the limits for safe drinking water and were similar to world average river values. The abundant river suspended matter and high pH combine to keep dissolved trace metal concentrations low.
KEYWORDS: Louisiana; coastal waters; Mississippi River Delta; chemistry; sediment; trace metal; water quality;

01130

Price, K.C. 1979. Onshore hydrography of Timbalier Bay, Louisiana, p. 145-157. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; physical; temperature; salinity; turbidity; dissolved oxygen; Offshore Ecology Investigation;

01131

Price, W.W.; McAllister, A.P.; Towsley, R.M.; Delre, M. 1986. Mysidacea from continental shelf waters of the northwestern Gulf of Mexico. Contrib. Mar. Sci. 29:45-58.

ABSTRACT: Eight species of Mysidaceae were collected from continental shelf waters off Texas and Louisiana. Siriella thompsonii, Anchialina typica, Amathimysis brattegardi, Pseudomma heardi and Mysidopsis furca are recorded from the western Gulf of Mexico for the first time. Species accounts include morphological and ecological information and distribution records. A preliminary zoogeographical comparison of the mysids of the northwestern and northeastern Gulf of Mexico indicates a richer fauna in the latter area. This richer fauna appears to be due to the presence of tropical species in the offshore waters resulting from the intrusion of the Gulf Loop current and an abundance of hard bottom communities in this part of the Gulf.
KEYWORDS: Texas; Louisiana; continental shelf; biology; shrimp; taxonomy; ecology; biogeography;

01132

Prior, D.B.; Coleman, J.M. 1977. Disintegrating retrogressive landslides on very low-angle subaqueous slopes, Mississippi Delta. Mar. Geotechnol. 3(1):37-60.

ABSTRACT: Side-scan sonar records from the interdistributary bay areas of the Mississippi Delta (East Bay, Garden Island Bay, and shallow water areas adjacent to Pass a Loutre) have shown widespread subaqueous disturbance of the bottom sediments. These occur in shallow water and on slopes with very low inclinations (0.01 deg. - 0.45 deg.). The morphology of the features is indicative of mass movement processes involving subsidence and downslope translatory movements. The precise conditions under which failure occurs have not been fully documented, but a conceptual model of potential factor interaction can be formulated.
KEYWORDS: Louisiana; Mississippi River Delta; estuary; coastal waters; geology; submarine landslide; hazard; model;

01133

Prior, D.B.; Coleman, J.M. 1978. Submarine landslides on the Mississippi River Delta--front slope. Geoscience and Man 19:41-53.

ABSTRACT: Systematic side-scan sonar surveys, together with seismic and fathometer data, have revealed the presence of various types of submarine landslides in the Mississippi River Delta region on slopes of 0.2o to 1.5o, in water depths of 5 to 100 m. These include collapse depressions, bottleneck slides, elongate slides, slumps, mudflow gullies, and overlapping mudflow lobes. The features are presently active and transport large quantities of sediment from the upper delta-front slopes into deeper water. Movement rates of 1.5 km/year have been recorded. The landslides are capable of causing damage to offshore petroleum facilities and pipelines. These submarine landslides result from complex temporal and spatial combinations of a number of factors, including wave-induced stresses, loading, and generation of high pore water and methane gas pressures within the sediments.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; geology; sediment transport; submarine landslide; hazard;

01134

Prior, D.B.; Coleman, J.M. 1980. Sonograph mosaics of submarine slope instabilities, Mississippi River Delta. Mar. Geol. 36:227-239.

ABSTRACT: Sonograph mosaics of submarine slope instabilities have been compiled from new sonographs that were acquired from an area of the Mississippi delta-front slope in water depths of 10-50 m. The sonographs are free from scale distortions, and tonal and textural patterns indicate considerable topographic variety, including subparallel scarps, blocky areas enclosed by scarps, elongate sinuous channels, depositional lobes, and collapse depressions. These are interpreted as the results of various types of subaqueous mass movement. Adjacent scale-true survey lines have been combined, using accurate navigational, yielding the first-ever composite sonograph mosaics of submarine slope instabilities. The mosaic represent both internal feature detail and spatial associations.
KEYWORDS: Louisiana; Mississippi River Delta; South Pass; continental shelf; geology; sediment transport; submarine landslide; hazard;

01135

Prior, D.B.; Coleman, J.M. 1982. Active slides and flows in underconsolidated marine sediments on the slopes of the Mississippi Delta, p. 21-49. In S. Saxov and J. K. Nieuwerhuis [ed.], Marine slides and other mass movements. Plenum Press, New York, NY.

ABSTRACT: On the continental shelves off large deltas, rapid progradation and deposition result in highly underconsolidated marine sediments. These deposits, which are often also rich in interstitial methane gas, can be subject to sidespread and active mass movement downslope. For example, the submarine slopes of the Mississippi River delta are affected by a variety of sediment instability processes. Geologic and geophysical surveys using side-scan sonar, subbottom profilers, and precision depth recorders have been completed for the entire subaqueous delta. Survey lines were spaced at 240-m intervals, and water depths ranged from 5 m to 20 m. Bottom morphology, including sediment deformations indicative of instability, has been mapped at a scale of 1:12,000, and large-area, scale-corrected sonar mosaics have been constructed. The features identified include collapse depressions, bottleneck slides, shallow rotational slides, mudflow gullies, overlapping mudflow lobes, and a wide variety of faults. The slides and mudflows are extremely active, and movement rates of several hundred meters per year have been recorded. Damage to offshore oil and gas pipelines and platforms has occurred. Also, the concept of slow, continuous deltaic progradation must be modified to include the effects of these processes. For example, on the shelf, normal setting of suspended clays averages only a few millimeters per year, whereas at the front of the delta slope more than 30 m of sediment has been deposited by mudflows and slides since 1875.
KEYWORDS: Louisiana; Mississippi River Delta; continental shelf; continental slope; geology; sediment transport; submarine landslide; hazard;

01136

Prior, D.B.; Coleman, J.M.; Garrison, L.E. 1981. Geologic mapping for offshore engineering, Mississippi Delta, p. 35-42. In Proceedings, 13th Annual Offshore Technology Conference, Houston, TX, 4-7 May 1981. Paper No. 4119.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; continental shelf; Mississippi River Delta; geology; sediment;

01137

Prior, D.B.; Suhayda, J.N. 1979. Application of infinite slope analysis to subaqueous sediment instability, Mississippi Delta. Eng. Geol. 14:1-10.

ABSTRACT: Submarine landslides are described on very low angle slopes (0.5 deg. - 1.7 deg.) in the Mississippi prodelta area and are evaluated using infinite slope analysis. For instability to occur, pore water pressure rations in excess of hydrostatic (u/ywz) and approaching geostatic (u/y'z) are needed. These calculated values, based on three sets of effective strength parameters and for two sediment depths to failure, are in close agreement with measured pore water pressure data from in situ piezometers. Rations of u/y'z as large as 0.986 have been monitored. Mud vents are also indicative of large internal pressures within the sediments, generated by rapid sedimentation,wave perturbation, and biogenic methane. The analysis suggests that the reduction in effective stress may be sufficient to cause failure by gravitational stresses alone.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; geology; submarine landslide; hazard;

01138

Prior, D.B.; Suhayda, J.N. 1979. Submarine mudslide morphology and development mechanisms, Mississippi Delta, p. 1005-1061. In Proceedings, Eleventh Annual Offshore Technology Conference, April 30-May 3, 1979, Houston, TX. Paper No. OTC-3482.

ABSTRACT: Continued data acquisition from the Mississippi delta-front slope has allowed more detailed evaluation of mudslide morphology. Subsidence source bowl geometry appears consistent with a retrogression model, suggesting that they enlarge and develop upslope by a process of strain remolding following initial failure. Transport chutes have characteristics that suggest plug flow, and this is evaluated using a model developed for subaerial debris flows. Undrained loading in the downslope depositional zones provides a mechanism to explain lobe progradation. A development sequence for mudslide evolution and elongation is outlined, consisting of three major stages: initial failure, retrogression and progradation, and loading and downslope progradation. The main implications for offshore engineering are that design criteria should acknowledge the site-specific characteristics of mudslides.
KEYWORDS: Louisiana; Mississippi River Delta; continental shelf; continental slope; geology; submarine landslide; hazard;

01139

Pristas, P.J. 1977. Big game fishing in the northern Gulf of Mexico during 1976, with a brief summarization for the years 1971-1976. National Marine Fisheries Service, Southeast Fisheries Center, Panama City, FL. 7 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; fisheries; fishery statistics; recreation; socioeconomics;

01140

Pristas, P.J. 1980. Big game fishing in the northern Gulf of Mexico during 1979. NOAA Tech. Mem. No. NMFS-SEFC-23. 6 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; recreation; fishery statistics;

01141

Pristas, P.J. 1981. Big game fishing in the northern Gulf of Mexico during 1980. NOAA Tech. Mem. No. NMFS-SEFC-77. 34 p.

ABSTRACT: In 1970, the Panama City Laboratory of the National Marine Fisheries Service (NMFS) began a study on big game fishes (blue marlin, Makaira nigricans; white marlin, Tetrapterus albidus; and sailfish, Istiophorus platypterus) in the northern Gulf of Mexico. This study subsequently became part of the Southern Fisheries Center's Oceanic Pelagics Program, the statistics for which are collected by the Fishery Survey Task of the Office of Technical and Information Management Services. Data have been collected through the cooperation of recreational fishermen who wished to learn more about big game fishes. This annual report, the tenth, is furnished to: (1) answer general questions such as: where was the best fishing? what was the best bait? how was the fishing season? etc.; and (2) provide scientific data about the distribution, abundance, and biology of marlins and sailfish in the Gulf of Mexico.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; fisheries; fishery statistics; socioeconomics; recreation;

01142

Pristas, P.J. 1982. Big game fishing in the northern Gulf of Mexico during 1981. NOAA Tech. Mem. No. NMFS-SEFC-90. 34 p.

ABSTRACT: Big game fishing for oceanic pelagic fishes (i.e., marlins, sailfish, swordfish, tunas, etc.) was a relatively infrequent event in the northern Gulf of Mexico prior to the mid-1950s. Research by the federal government contributed to the increase in popularity of this activity. The U.S. Fish and Wildlife Service conducted exploratory longline fishing off the Louisiana coast in the mid-1950s to determine the abundance of tuna stocks. The longline catches included impressive numbers of blue marlin, Makaira nigricans, and white marlin, Tetrapterus albidus, which intensified the interest in recreational big game fishing. This new recreational fishery continued to expand throughout the northern Gulf Coast area in the 1960s and 1970s. In the late 1960s, the Federal government began preliminary investigations from their Panama City, Florida laboratory to gather information about this oceanic pelagic fishery resource in the northern Gulf. In 1970-71, the National Marine Fisheries Service (NMFS) began a study of the distribution, abundance, biology, and ecology of billfishes (i.e., marlins and sailfish, Istiophorus platypterus). In 1972, responsibility for this study was transferred to the Miami Laboratory, Southeast Fisheries Center (SEFC). In 1977, responsibility for data collection was assigned to the Fishery Surveys Task of the SEFC's Office of Technical and Information Management Services. The best (i.e., cost per data unit) means of data collection was determined to be a public-contract survey. Since 1970, port samplers have interviewed big game fishing participants to obtain data concerning catch and effort (i.e., hours fished); weather conditions; types of bait; fishing area (latitude and longitude); fish weight, length, and sex. In return for the cooperation given by charter boat captains, members of big game fishing clubs, and individual sport fishermen, the investigators promised to analyze the data and present the results in a report to them. Analyses in this report are to answer some of the most frequently asked questions.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; fisheries; fishery statistics; socioeconomics; recreation;

01143

Pristas, P.J.; Fable, D.C. 1985. Recreational billfish surveys Gulf of Mexico, p. 14-30. In NOAA Southeast Fisheries Center, Oceanic Pelagics Program 1984, Rep. No. NOAA-TM-NMFS-SEFC 163.

ABSTRACT: The recreational fishery survey of oceanic big game fishes in the Gulf of Mexico completed its 14th consecutive year in 1984. The survey was conducted by port samplers working out of six locations throughout the northern Gulf: Port Aransas, Texas; Grand Isle and South Pass, Louisiana; Mobile, Alabama; Pensacola, Florida; Destin and Panama City, Florida. The 30,575 hr of recorded big game fishing effort was the third highest amount of effort recorded from the six ports since the study began in 1971. The maximum effort recorded from these ports was 31,343 hr in 1978 3% more than this season. The amount of effort recorded in 1984 was 45% greater than the average amount (21,073 hr) collected during the previous 13 yr.
KEYWORDS: Alabama; Florida; Louisiana; Texas; fisheries; recreation; fishery statistics;

01144

Prytherch, H.F. 1983. Descriptive survey of the bottom longline fishery in the Gulf of Mexico. National Marine Fisheries Service, Miami, FL. Southeast Fisheries Center. Rep. No. NOAA-TM-NMFS-SEFC-122. 39 p. NTIS order No. PB84-125491.

ABSTRACT: Contents include survey methodology; Description of the fishery; Description of longline fishing operations; Dockside interviews; Observer trips; Price structure by species; Marketing the catch; The influence of fish size on price.
KEYWORDS: Gulf of Mexico; fisheries; fishery statistics; fishing gear;

01145

Pullen, E.J.; Trent, L. 1969. Hydrological observations from the Galveston Bay system, Texas, 1958-67. U.S. Fish and Wildlife Service, Data Rep. No. 31. 151 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; physical;

01146

Pullen, E.J.; Trent, L. 1974. Hydrographic observations from a natural marsh and a marsh altered by dredging, bulkheading, and filling in West Bay, Texas. National Marine Fisheries Service, Data Rep. 97. 15 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; marsh; physical; dredging; environmental impact;

01147

Pullen, E.J.; Trent, W.L. 1970. Carapace width-total weight relation of blue crabs from Galveston Bay, Texas. Trans. Amer. Fish. Soc. 99:795-798.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; biology; fisheries; blue crab;

01148

Pullen, E.J.; Trent, W.L.; Adams, G.B. 1971. A hydrographic survey of the Galveston Bay System, Texas, 1963-66. NOAA Tech. Rep. NMFS-SSRF-639. 13 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; physical; chemistry; temperature; salinity;

01149

Pulley, T.E. 1952. A zoogeographic study based on the bivalves of the Gulf of Mexico. Ph.D. dissertation. Harvard University, Cambridge, MA.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; benthos; ecology; biogeography;

01150

Putt, R.E. 1982. A quantitative study of fish populations associated with a platform within Buccaneer Oil Field, northwestern Gulf of Mexico. M.S. thesis. Texas A&M University, College Station, TX. 116 p.

ABSTRACT: In situ quantitative fish population observations were recorded simultaneously at six locations beneath a platform in the Buccaneer Field, located 50 km SSE of Galveston, TX. Daylight observations were recorded using time-lapse, super-8 photography at approximately 6.5-min intervals during 10 cruises in July, August, and September 1976. The filmed observations were analyzed for fish concentrations vs. depth, station, platform side, diel period, day, month, and presence of divers. Fish populations beneath the platform showed significant vertical and temporal differences. Structural design of the platform and the position of a nepheloid layer appeared to influence spatial variability. SCUBA divers had no significant impact on the most abundant species near the platform.
KEYWORDS: Texas; continental shelf; biology; oil and gas; petroleum platform; fish; Buccaneer Field;

01151

Putt, R.E.; Gettleson, D.A.; Phillips, N.W. 1986. Fish assemblages and benthic biota associated with natural hard-bottom areas in the northwestern Gulf of Mexico. N.E. Gulf Sci. 8(1):51-64.

ABSTRACT: We report new observations of fish and benthic invertebrate assemblages at shallow-water (< 35 m depth), hard-bottom sites in the northwestern Gulf of Mexico. The biota of these previously unstudied areas and to three high-relief features in deeper water was observed during May 1980 using a combination of diver reconnaissance, videotape surveys, still-camera photography, and collection of invertebrates for identification. The six hard bottom sites in shallow water typically comprised, small, often patchy, rock outcrops, and the associated sessile invertebrates included hydroids, bryozoans, sponges, octocorals, and ahermatypic stony corals. Sea urchins and arrow crabs were the most common motile epifauna. Fish assemblages were typified by red snapper, Atlantic spadefish, blue runner, gray triggerfish, sheepshead, and tomtate. Three deeper stations had many of the same fish and invertebrate species, but also possessed a more tropical assemblage including fire corals, antipatharians, spiny lobsters, and a variety of tropical fish species. Hermatypic corals characteristic of some large, offshore banks were not abundant at any of the sites. Differences in the composition of fish assemblages between nearshore and deeper stations parallel those previously observed at petroleum platforms in the area. Shallow-water stations presumably experience a greater seasonal temperature range and lower absolute temperatures in winter and may be exposed to stresses such as lowered salinity and depleted oxygen levels due to their relative proximity to Mississippi River discharge. The fauna of these shallow hard-bottom sites has predominantly warm-temperate rather than tropical affinities.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; reef; benthos; fish;

01152

Pye, K.; Krinsley, D.H.; Burton, J.H. 1986. Diagenesis of US Gulf Coast shales. Nature 324:557-558.

ABSTRACT: The burial diagenesis of mudstones is of major interest in petroleum geology. The authors reconsider here the nature and timing of diagenesis in Gulf Coast Tertiary mudstones using data obtained by backscattered electron microscopy (BSEM) and energy-dispersive X-ray analysis (EDS) of cuttings from two Texas wells. Observations confirm the mineralogical trends with depth reported by Hower et al. and suggest new evidence concerning the timing and causes of the changes. The most important mineralogical changes occurred in the zone of organic matter decarboxylation (zone IV(8)). The authors show that the sequence of burial diagenetic events can be established quickly and reliably by BSEM examination of shale cuttings, and demonstrate the use of foram tests and their authigenic mineral infillings as indicators of diagenesis in soft, fine-grained shales.
KEYWORDS: Texas; oil and gas; geology; diagenesis; mineralogy; cuttings;

01153

Pyle, C.A. 1977. Late Quaternary geologic history of the south Texas outer continental shelf. M.S. thesis. Texas A&M University, College Station, TX. 72 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; geology; geologic history; STOCS;

01154

Quayle, R.G.; Fulbright, D.C. 1977. Wind and wave statistics for the North American Atlantic and Gulf Coasts. Mariners Log 21(1)13-16.

ABSTRACT: Tables of monthly and annual scalar mean windspeed and prevailing direction and annual percent frequencies for various wave height categories have been prepared.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; wind; wave;

01155

Rabalais, N.N. 1979. Ctenocheles leviceps: new species (Crustacea Decapoda Thalassinidea) from the northwestern Gulf of Mexico. Proc. Biol. Soc. Wash. 92 (2):294-306.

ABSTRACT: During an extensive U.S. Bureau of Land Management sponsored survey of the south Texas outer continental shelf in the northwestern Gulf of Mexico, 5 specimens of C. leviceps sp. nov. were collected. It is described and illustrated with a brief discussion of its ecology and occurrence.
KEYWORDS: Texas; continental shelf; biology; benthos; taxonomy; STOCS;

01156

Rabalais, N.N.; Boesch, D.F. 1986-1987. Extensive depletion of oxygen in bottom waters of the Louisiana shelf during 1986. Coast. Ocean Pollut. Assess. News 3(4):1-3.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; continental shelf; physical; chemistry; dissolved oxygen; hypoxia;

01157

Rabalais, N.N.; Dagg, M.J.; Boesch, D.F. 1985. Nationwide review of oxygen depletion and eutrophication in estuarine and coastal waters: Gulf of Mexico (Alabama, Mississippi, Louisiana and Texas). Report by Louisiana Universities Marine Consortium to NOAA, Ocean Assessments Division, Rockville, MD. 59 p.

ABSTRACT: None
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; estuary; coastal waters; chemistry; physical; dissolved oxygen; hypoxia; nutrient;

01158

Rabalais, N.N.; Holt, S.A.; Flint, R.W. 1981. Mud shrimps (Crustacea, Decapoda, Thalassinidea) of the northwestern Gulf of Mexico. Bull. Mar. Sci. 31(1):96-115.

ABSTRACT: Nine species of thalassinids representing three families (Upogebiidae, Axiidae, and Callianassidae) were collected on the south Texas continental shelf. Six were previously unrecorded from the northwestern Gulf of Mexico. Species accounts include taxonomic information, variations in adults, characteristics of juveniles, distribution records, and interspecific affinities. A multivariate discriminant analysis of habitat variables accompanying thalassinid collections on the south Texes continental shelf provides information distinguishing the habitats of the species from one another. The 9 species collected include the following: Callianassa acanthochirus, C. biformis, C. latispina, C. atlantica, C. marginata, Callianassa sp., Ctenocheles leviceps, Upogebia affinis, and Axiopsis oxypleura. Sediment substrate preferences are also discussed. C. marginata was taken from deep stations (65 to 85 m) but only in coarse sediments similar to those associated with the shallow water group. Ctenocheles leviceps was collected at mid-depth (30 to 50 m) in silty sediments.
KEYWORDS: Texas; continental shelf; biology; ecology; benthos; taxonomy; STOCS;

01159

Rabalais, S.C.; Arnold, C.R.; Wohlschlag, N.S. 1981. The effects of Ixtoc I oil on the eggs and larvae of red drum (Sciaenops ocellata). Tex. J. Sci. 33(1):33-38.

ABSTRACT: None
KEYWORDS: oil and gas; biology; fisheries; fish; oil spill; environmental impact; drum; physiology; Ixtoc;

01160

Rabalais, S.C.; Rabalais, N.N. 1980. The occurrence of sea turtles on the South Texas coast. Contrib. Mar. Sci. 23:123-129.

ABSTRACT: The results of a three-year survey of sea turtles on south Texas beaches indicates that they are stranded most frequently in April-May and November and most often on Mustang Island and the northern half of Padre Island. The number of strandings has increased from 1976 to 1979. Loggerheads (Caretta caretta) are the most common sea turtle as indicated by the number of turtles washed ashore on beaches and by those seen around hard bottom features nearshore. The majority are subadults. Information on the strandings, occurrence, and life history of four other species in south Texas coastal waters is detailed.
KEYWORDS: Texas; biology; turtle; endangered species;

01161

Ragan, J.G.; Harris, A.H.; Green, J.H. 1978. Temperature, salinity and oxygen measurements of surface and bottom waters on the continental shelf off Louisiana during portions of 1975 and 1976. Professional Papers Series (Biology), No. 3. Nicholls State University, Thibodeaux, LA.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; chemistry; physical; dissolved oxygen; salinity; temperature;

01162

Rainwater, E.H. 1967. Resume of Jurassic to Recent sedimentation history of the Gulf of Mexico Basin. Trans. Gulf Coast Assoc. Geol. Soc. 17:179-210.

ABSTRACT: The Gulf of Mexico Basin extends about 1,100 miles east-west and 1,300 miles north-south. The oldest sediments which are part of the basin fill are probably of Triassic age. They are confined to narrow grabens which are present along the basin margin and also farther into the basin. These sediments lie on Precambrian and Paleozoic igneous and metamorphic rocks, and also on Paleozoic sedimentary rocks. It was during the Upper Jurassic that thick and extensive salt deposits were precipitated in the grabens which had limited connection to the sea. General subsidence brought a shallow sea over much of the basin shortly after the salt was formed, and Upper Jurassic limestone was deposited in all margins of the basin. Before the end of Jurassic, sediments from rising land masses reached the northern and western edge of the basin. The sea expanded even more during Lower Cretaceous time, and deposition of carbonates took place to and beyond the borders of the Gulf basin on the west and east. Much land-derived sediment was also deposited along the northern margin of the basin. The sea was restricted on the west but was expanded up the Mississippi Embayment and also across the western plains to connect with the Arctic Ocean during the Upper Cretaceous Period. Limestone, chalk and marl accumulated in this shallow epicontinental sea, and terrigenous clastics were, at times, deposited in coastal plain and shallow,near-shore environments along the northern and western margins of the basin. The ancient Gulf began to be restricted to the north and west at the end of the Cretaceous. The Laramide orogeny elevated much of the North American continent, and sediments from these land areas were brought to the Gulf Basin throughout the Tertiary and Quaternary. There were may pulses of uplift of the hinterland; the basin was continuously subsiding. The shoreline position in this clastic province fluctuated greatly so that there was greater than subsidence, with the result that each formation was deposited farther seaward than the preceding ones. The eustatic rise of sea level at the end of the Pleistocene Period brought the northern Gulf over the continental shelf. In the shallow marine platforms of the southeastern Gulf, there was continuous deposition of limestone. Sedimentation is taking place today in many environments in the Gulf of Mexico Basin. Study of these Recent sediments and the associated faunas and floras has provided criteria for determining the depositional history of the Gulf Basin and many other basins. The outcrop, thickness, generalized lithology and depositional environments are shown by maps and columnar sections for the Lower Cretaceous, Upper Cretaceous, Paleocene, Lower Eocene, Middle Eocene, Upper Eocene, Oligocene, and Miocene. The Upper Jurassic, Pliocene, Pleistocene and Recent sediments are illustrated with representative columnar sections.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; deep sea; geology; geologic history; sedimentation; stratigraphy;

01163

Rainwater, E.H. 1968. Geological history and oil and gas potential of the central Gulf Coast. Trans. Gulf Coast Assoc. Geol. Soc. 18:124-163.

ABSTRACT: The area described embraces the coastal plain and continental shelf between Texas and peninsular Florida, and includes the Mississippi Embayment. The stratigraphic section includes sediments of all ages from Triassic to Holocene; its maximum composite thickness probably exceeds 80,000 feet, but only about 50,000 feet of Mesozoic-Cenozoic sediments are present at any locality, in the deepest part of the Gulf Coast Geosyncline. Oil and gas are currently produced in numerous fields in this area from both silicated clastics and carbonate rocks of Jurassic, Cretaceous, Tertiary, and Quaternary ages. The sedimentation history clearly indicates that the potential for future discoveries is great. The structure and stratigraphy of this richly petroliferous basin are described and the possibility of discovering more oil and gas than has been found is pointed out. Thickness, lithology, and depositional environments of each major division of the Mesozoic and Cenozoic are shown on maps and sections.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; continental shelf; continental slope; geology; oil and gas; stratigraphy; geologic history;

01164

Ramsey, R.C. 1971. Marine resources spectrometer experiment. TRW Systems Group, Redondo Beach, CA. 85 p.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; biology; fisheries; remote sensing;

01165

Randall, J.M.; Day, J.W., Jr.; Teague, K.G. 1985. Spatial and temporal variability of aquatic primary productivity in a highly turbid Louisiana estuary. Estuaries 8(2B):22A.

ABSTRACT: Aquatic primary productivity was measured in Four League Bay, a shallow (2 m) bay adjacent to the Atchafalaya River delta. The upper bay site is dominated by very turbid, nutrient rich river water (0 ppt. salinity) while waters at the lower bay site, 4 km from the Gulf of Mexico, vary between 0 and 20 ppt., depending on river flow, winds and tides. Light gradients at both stations are generally very steep and secchi depths average 25 cm (range: 5 to 80 cm). Because high variability in rates of vertical mixing are expected due to variable winds and currents, comparisons of several rates of vertical motion were made. These comparisons enabled the authors to ascertain the effects of vertical mixing through the light gradient on net primary production and to make more realistic production estimates where mixing effects were significant.
KEYWORDS: Louisiana; Atchafalaya River Delta; estuary; biology; primary production;

01166

Randall, R.E.; Hann, R.W., Jr. 1981. Environmental impact of offshore brine disposal associated with petroleum storage activities, p. 461-472. In Proceedings, 13th Annual Offshore Technology Conference, Houston, TX, 4 May 1981, vol. 2. Paper No. OTC-4059.

ABSTRACT: In Sep. 1977 Texas A&M University began a study to assess the environmental impact of the eventual discharge of a brine effluent from the Bryan Mound site of the Department of Energy's Strategic Petroleum Reserve Program. This site is the first of several storage sites planned for the coast of the Gulf of Mexico. The brine effluent of up to 680,000 barrels per day at 90% saturation is the result of leaching storage caverns in the underground salt dome at Bryan Mound near Freeport, Texas, or the result of filling already leached caverns with petroleum. The organization and management philosophy for an interdisciplinary team of principal investigators is discussed. The primary project study areas are physical oceanography, analysis of the discharge plume, water and sediment quality, nekton, benthos, phytoplankton, zooplankton, and these areas are supported by management, field and data management components. This paper summarizes the results from the predisposal and intensive postdisposal periods. During these periods, the project has generated a unique collection of baseline data.
KEYWORDS: Texas; continental shelf; biology; chemistry; geology; physical; environmental impact; brine disposal; water quality; Strategic Petroleum Reserve;

01167

Rankin, J.G. 1974. Chemical and physical characteristics of dissolved organic matter isolated from the Mississippi River delta and Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 125 p.

ABSTRACT: Samples of dissolved organic matter were collected from 2 sites in the Mississippi River delta between February and October, 1971 during cruises 71-A-3 and 71-A-12 of the R/V Alaminos. Data collected concern silicate, carbohydrate, protein, fatty acid, methanol and acetone levels. Observations were made on depth, salinity, dissolved oxygen and temperature. Methods of isolation and extraction and references to previous worldwide investigations into chemical analyses between 1969 and 1973 are included.
KEYWORDS: Louisiana; Mississippi River Delta; dissolved oxygen; hydrocarbon; salinity; temperature; chemistry; organic carbon; nutrient;

01168

Ray, L.E.; Murray, H.E.; Giam, C.S. 1983. Analysis of water and sediment from the Nueces Estuary/Corpus Christi Bay (Texas) for selected organic pollutants. Chemosphere 12(7/8):1039-1045.

ABSTRACT: The concentrations of various organic pollutants (PCBs, phthalate esters (PAEs), hexachlorobenzene (HCB), pentachlorophenol (PCP), polycyclic aromatic hydrocarbons (PAHs), and chlorinated hydrocarbon pesticides (CHPs) were determined in samples of water and sediment from various sites in the Nueces Estuary, Texas. In sediment, the relative concentrations were ΣPAEs > PCB > ΣCHPs > PCP > HCB; the relative concentrations in water were ΣPAEs > PCP > PCB > ΣCHPs > HCB. One site in the estuary was highest in regard to most of the pollutants. The results of this study are compared to values reported for other sites. This study is part of a larger effort to evaluate and characterize environmental pollution and to assess the biological effects of marine pollutants. It will also serve as a basis for intercomparison with other areas and for future monitoring.
KEYWORDS: Texas; Corpus Christi Bay; estuary; chemistry; sediment; water quality; hydrocarbon; pesticide; PCB;

01169

Rayburn, R.; Vehrs, K.L. 1984. Shrimp in the western Gulf of Mexico--A transboundary stock, p. 400-403. In OCEANS '84 Conference record: industry, government, education. Vol. 1. Designs for the future. Marine Technology Society, Washington, DC.

ABSTRACT: Through the mid-1970's, much of the Gulf of Mexico shrimp harvesting industry was established and capitalized on the ability to shrimp in domestic waters of the U.S. and the waters off the Mexican coast. In 1976, the Mexican government declared a 200 mile exclusive economic zone and negotiated a bilateral treaty with the U.S. to phase out all U.S. shrimping in their zone by January 1, 1980. The shrimp stocks in the Western Gulf of Mexico are a resource shared by both Mexico and the United States. In recent years, some of the South Texas fleet have shrimped in waters off the Mexican coast. The Mexicans operate almost entirely inshore and, therefore, the offshore resource is not being fully utilized. Until December, 1982, the Mexicans were not even enforcing their zone. This condition has now developed into conflict between the U.S. and Mexico.
KEYWORDS: Texas; Mexico; fisheries; shrimp; socioeconomics;

01170

Reagan, R.E. 1985. Species profiles. Life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico) -- Red Drum. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.36). 27 p.

ABSTRACT: Species profiles are literature summaries of the taxonomy, morphology, distribution, life history, and environmental requirements of coastal aquatic species. These are prepared to assist in environmental impact assessment. The red drum (Sciaenops ocellatus) is an estuarine dependent species. It spends its entire life in estuaries or nearshore coastal waters of the Gulf of Mexico. Red drum spawn from mid-August to nearshore coastal waters of the Gulf of Mexico. Red drum spawn from mid-August to November; peak spawning is from mid-September through October. Larvae and juveniles remain in estuaries and adults live along the coast and in passes. Commercial landings remain in estuaries and adults live along the coast and in passes. Commercial landings remain in estuaries and adults live along the coast and in passes. Commercial landings remain in estuaries and adults live along the coast and in passes. Commercial landings in Louisiana (1971-81) ranged from 723,700 to 2,212,500 lb. Texas closed commercial fishing in 1979. In most Gulf States, the sport catch usually exceeds commercial landings. There are few data on population dynamics of the species. Larval and juvenile red drum eat primarily invertebrates; adults feed on fish, shrimp, and crabs. Red drum tolerate a wide range of temperatures (2 to 37.5 C) and salinities (0.14 to 50 ppt).
KEYWORDS: Gulf of Mexico; estuary; coastal waters; biology; fisheries; fish; drum;

01171

Red River Basin Coordinating Committee. 1987. Hurricanes, 1985: JUAN, DANNY, ELENA. Red River Basin Coordinating Committee, New Orleans, LA. 84 p. NTIS order No. AD-A182 469/7/XAB.

ABSTRACT: The coastline of Louisiana is highly susceptible to hurricane strength storms which enter the area from the Gulf of Mexico. During a normal hurricane season (1 Jun-30 Nov) the Louisiana coast will experience an average about one hurricane per year. However, during the 1985 hurricane season, Louisiana was struck by three hurricanes: DANNY in August, ELENA in September, and JUAN in October. While DANNY was not intense, ELENA and JUAN were stronger and, more importantly, erratic and dilatory in making landfall. Ocean waves generated by JUAN battered the Louisiana coast for at least 3 days. It is difficult to relate the severity of these events to a design storm, but it appears reasonable to conclude that the combined impact of the season's storms well exceeded that which would be associated with the passage of a design hurricane, which would occur once in 100 years.
KEYWORDS: Louisiana; physical; hurricane; wave;

01172

Reece, A.M. 1982. Test of wave hindcast model results against measurements during four different meteorological systems. In Proceedings, 1982 Offshore Technology Conference, Houston, TX. Paper No. OTC 4323.

ABSTRACT: Establishment of the probability of occurrence of extreme wave events is a necessary step in the process of design of offshore facilities. The wave data base for which these statistics can be derived are commonly synthesized from meteorological data by applying a wave hindcasting technique. Hindcasting is carried out by developing representative windfields from the meteorological data for use as input in a wave prediction model. The discussion illustrates some of the recent hindcast work done by the oil industry, brings together hindcast experience accumulated for three basins and for four distinct storm types for a model that was originally optimized for tropical storm conditions, and summarizes the spectral peak period information that is available, but usually not discussed.
KEYWORDS: Gulf of Mexico; physical; continental shelf; meteorology; model; hurricane; wave;

01173

Reed, J.C.; Sweet, W.E.; Leyendecker, C.L.; Khan, A.S. 1985. Correlation of Cenozoic sediments on Gulf of Mexico outer continental-shelf - Galveston area offshore Texas to Vermilion area offshore Louisiana .1. Am. Assoc. Pet. Geol. Bull. 69(9):1429. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Texas; continental shelf; geology; sediment;

01174

Reeves, R.R.; Leatherwood, S. 1983. Autumn sightings of marine turtles (Cheloniidae) off South Texas. Southwest. Nat. 28:281-288.

ABSTRACT: Based on sightings during low-altitude aerial surveys, 21-30 September 1979, the total number of marine turtles off South Texas-Aransas to Brownsville, inland coast to 18 m contour - was estimated conservatively as 19.0±.6. Turtles seen were probably loggerheads or Kemp's ridleys. One large turtle was seen in Laguna Madre adjacent to Mansfield Cut. All other sightings occurred along the Gulf coast of Padre Island. Usefulness of such aerial surveys in estimating density of marine turtles is discussed.
KEYWORDS: Texas; biology; turtle; endangered species;

01175

Reggio, V.C., Jr. 1987. Rigs to reefs. The use of obsolete petroleum structures as artificial reefs. Minerals Management Service, New Orleans, LA. OCS Study MMS 87-0015. 17 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; petroleum platform; reef; biology;

01176

Reid, R.O. 1977. Experiments in storm surge simulation, p. 145-168. In E.D. Goldberg [ed.], Sea: ideas and observations on progress in the study of the seas. John Wiley & Sons, New York.

ABSTRACT: A series of equations is presented for an integrated numerical model simulating storm surges in the Gulf of Mexico (or elsewhere), including the effect of the Earth's rotation (Coriolis parameter), local acceleration of gravity, water depth, sea surface elevation above mean sea level, hydrostatic elevation of the sea surface as a result of the atmospheric pressure anomaly, volume transport, kinematic wind stress, bottom resistance stress, and various wave parameters (air density, water density, drag coefficient, etc.). Wind stress is related to wind speed at an elevation of 10 m above the water surface and is computed for distances from the hurricane center and the ingress angle and with consideration of the deformation of the wind field near the shore (or land). Actual comparative contours and water levels are presented for Hurricane ''Carla,'' which crossed the Texas Coast on Sept. 11, 1961, near Galveston, TX., and resulting hydrographs at Galveston and Mud Bayou (Sabine Pass) show differences between predicted and observed conditions at these places. One-dimensional boundary models for shelf surge computations and simulation of subgrid-scale obstacles such as are found in bays and estuaries (flooded marshes, other vegetative canopies, and buildings) provide promising challenges to modelling, as shown in many illustrations.
KEYWORDS: Texas; continental shelf; coastal waters; estuary; physical; meteorology; wind; hurricane;

01177

Reid, R.O.; Vastano, A.C.; Reid, T.J. 1977. Development of SURGE II program with application to the Sabine-Calcasieu area for Hurricane Carla and design hurricanes. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, VA. Report No. TP 77-13. 218 p.

ABSTRACT: SURGE II is a program for calculation of storm surges and tides in a bay or estuary of the type where frictional resistance dominates over Coriolis force. It includes the provision for subgrid scale barriers and channels as well as allowing for overtopping of barriers and flooding of and recession from normally dry regions adjoining the bay or estuary. The theory and numerical algorithm is discussed in detail. A user's guide for the program is also provided. Application of the program, in respect to astronomical tides and Hurricane surges, is made for the Sabine-Calcasieu region which straddles the Texas and Louisiana boundary.
KEYWORDS: Texas; Louisiana; physical; coastal waters; meteorology; hurricane; model; tide; wave;

01178

Reid, R.O.; Whitaker, R.E. 1981. Numerical model for astronomical tides in the Gulf of Mexico. Report by Department of Oceanography, Texas A&M Univ., for the U.S. Army Engineer Waterways Experiment Station. Contract No. DACW39-79-C-0074.

ABSTRACT: A finite difference, time-marching, implicit numerical model for the depth-integrated tidal equations has been developed, tested and applied to the Gulf of Mexico tides. The model is fully linear. A grid resolution of 15'x15' in latitude and longitude is employed. The tides are forced by direct tide potential and by a volume transport (or flux) potential at the ports, via a generalized admittance condition. The kinematic boundary condition of no flow through coastal boundaries is employed, and hence water level is predicted rather than being prescribed at the coast. Overall, the model predictions for the 20 sample stations explain about 94.5% of the observed variance of the combined tide response at these stations.
KEYWORDS: Gulf of Mexico; physical; coastal waters; model; tide;

01179

Reitsema, L.A. 1980. Biological/chemical survey of Texoma and Capline sector salt dome brine disposal sites off Louisiana, 1978-1979. Volume II. Determine seasonal abundance, distribution and composition of zooplankton. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-26. 163 p. NTIS order No. PB81-175838.

ABSTRACT: Five stations were sampled for zooplankton at each of two sites offshore Louisiana during four collection periods during 1978 and 1979. The purpose of the study was to characterize the sites in terms of the seasonal and spatial zooplankton and ichthyoplankton communities. The two sites were similar in terms of dominant taxa and the density of planktonic organisms. The diversity, richness and evenness indices were higher for the samples collected at the Weeks Island site than for those from the West Hackberry site, indicating the presence of a greater number of species with a more equal distribution of individuals among taxa.
KEYWORDS: Louisiana; coastal waters; biology; plankton; fish; brine disposal; water quality; environmental impact; Strategic Petroleum Reserve;

01180

Renaud, M.L. 1986. Hypoxia in Louisiana coastal waters during 1983: implications for fisheries. Fish. Bull. 84(1):19-26.

ABSTRACT: Hypoxic bottom water (<2.00 ppm dissolved oxygen) was present in shallow (9-15 m) waters south of central Louisiana in June and July 1983. It was patchy in distribution from south of Barataria Pass to south and west of Marsh Island. Data suggested that bottom water hypoxia did affect the abundance and distribution of shrimp and bottomfish. Offshore bottom water dissolved oxygen was significantly correlated with (1) combined catches of brown and white shrimp ($r=0.56$, $P<0.002$), (2) fish biomass ($r=0.56$, $P<0.001$), and (3) vertical density gradient ($r=-0.73$, $P<0.001$). Several hypoxic stations were in regions designated as potentially hypoxic through a posteriori analysis of satellite data. Micropogonius undulatus was the dominant fish species nearshore and offshore. Penaeus aztecus and P. setiferus were sparsely distributed throughout the study area.
KEYWORDS: Louisiana; coastal waters; biology; fisheries; hypoxia; fish; shrimp; dissolved oxygen;

01181

Renfro, W.C. 1960. Salinity relations of some fishes in the Aransas River, Texas. Tulane Stud. Zool. 8:83-91.

ABSTRACT: None
KEYWORDS: Texas; estuary; biology; fish; salinity; ecology;

01182

Renfro, W.C. 1963. Gas-bubble mortality of fishes in Galveston Bay, Texas. Trans. Amer. Fish. Soc. 92:320-322.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; biology; fish; physiology;

01183

Renfro, W.C.; Brusher, H.A. 1982. Seasonal abundance, size distribution, and spawning of three shrimps (Penaeus aztecus, P. setiferus, and P. duorarum) in the northwestern Gulf of Mexico, 1961-1962. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-94. 51 p. NTIS order No. PB84-155761.

ABSTRACT: A study of offshore commercial shrimp populations in Texas and Louisiana waters was conducted during 1961 and 1962. Seasonal abundance, distribution, and size composition are described for brown (Penaeus aztecus), white (P. setiferus), and pink shrimp (P. duorarum). Spawning seasons and areas, determined from histological examination of 9,424 ovarian slides, are delineated. Of particular interest was the observation that brown shrimp apparently spawn throughout the year at depths of 64 m to 110 m.
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; biology; fisheries; shrimp;

01184

Renner, J.R. 1976. The coastal zone: An overview of economic, recreational, and demographic patterns. Louisiana State Planning Office, Baton Rouge, LA.

ABSTRACT: A general perspective on the uses, categorized as economic, demographic, and recreational, of the physical resources of the coastal zone, both renewable and non-renewable.
KEYWORDS: Louisiana; estuary; beach; marsh; barrier island; socioeconomics; recreation;

01185

Restrepo, C.E.; Lamphear, F.C.; Gunn, C.A.; Ditton, R.B.; Nichols, J.P.; Restrepo, L.S. 1982. IXTOC I oil spill economic impact study. Report by Restrepo & Associates to the Bureau of Land Management, Washington, DC. 2 vol., 282 p. NTIS order Nos. PB82-217852 and PB82-217860.

ABSTRACT: This is an assessment of the economic impacts of the 1979 IXTOC I oil spill to the south Texas coastal economy. Economic impacts include those related to tourism, recreation, commercial fishing, and cleanup costs. Over $6 million were lost by the tourism and recreation industries, while no significant impact was documented to commercial fisheries.
KEYWORDS: Texas; oil and gas; oil spill; socioeconomics; recreation; fisheries; Ixtoc;

01186

Rezak, R.; Bright, T.J. 1981. Northern Gulf of Mexico Topographic Features Study. Report by Texas A&M University to Bureau of Land Management, New Orleans, LA. (Also Texas A&M University Tech. Rep. No. 81-2-T.) 6 vol. Contract No. AA550-CT8-35. NTIS order No. PB81-248635.

ABSTRACT: The main purpose of the study was to gather data from selected areas and topographic features in the Gulf of Mexico, and then reduce, map, analyze, synthesize, integrate, and report findings and conclusions. Geological, chemical, physical, geophysical, and biological oceanographic data were collected from the Florida Middle Ground (off the west Florida coast) and from twelve topographic features off the Louisiana-Texas coast. This report presents the findings of the work performed during the period August 1978 to November 1980 and extends the efforts begun in 1961 by researchers from TAMU on a cruise to the West Flower Garden Bank conducted by R. Rezak on the R/V HIDALGO.
KEYWORDS: Texas; Louisiana; Florida; continental shelf; Flower Garden Banks; geology; biology; chemistry; physical; benthos; fish; reef; sediment;

01187

Rezak, R.; Bright, T.J. 1981. Seafloor instability at East Flower Garden Bank, northwest Gulf of Mexico. Geo-Marine Lett. 1:97-103.

ABSTRACT: An increasing volume of evidence suggests that normal faulting and graben formation associated with salt diapirism may be catastrophic. The evidence includes: 1) removal of solid salt from the diapirs by dissolution; 2) the nature of rock outcrops at the crests of domes; 3) seismic profiles showing recent displacement of the seafloor; and 4) changes in coral growth rates at the East Flower Garden Bank. The possibility of catastrophic movement of the seabed is an engineering constraint that must be addressed prior to emplacing structures such as jack-up rigs and production platforms.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; geology; faulting; reef;

01188

Rezak, R.; Bright, T.J.; McGrail, D.W. 1983. Reefs and banks of the northwestern Gulf of Mexico: their geological, biological, and physical dynamics. Report to the Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 501 p. (Also Department of Oceanography, Texas A&M University, College Station, TX. Technical Rep. No. 83-1-T.). NTIS order Nos. PB84-113380 and PB84-113372.

ABSTRACT: The purpose of this report is to provide a synthesis of scientific information regarding the geology, biology, and physical oceanography of the Texas-Louisiana Outer Continental Shelf, especially scientific knowledge and data related to the topographic features extending above the seafloor. A considerable portion of the data collected on the shelf is the result of a series of studies funded by the Bureau of Land Management (BLM; now Minerals Management Service, MMS) and conducted principally by investigators at Texas A&M University. This report relies primarily on data generated during these investigations, which started in 1974. However, it also incorporates the scientific literature generated by other studies before and during these BLM-sponsored investigations.
KEYWORDS: Louisiana; Texas; continental shelf; continental slope; biology; geology; physical; reef; Flower Garden Banks;

01189

Rezak, R.; Tieh, T.T. 1984. Basalt from Louisiana continental shelf. Geo-Mar. Lett. 4(2):69-76.

ABSTRACT: A basalt outcrop was discovered on Alderdice Bank on the outer Louisiana continental shelf. The basalt shows an age of 76.8 plus or minus 3.3 x 10 super(6) years. Textural, mineralogical, and chemical characteristics indicate that it is an alkali basalt of shallow intrusive origin. It was probably brought to the seafloor by salt tectonics and exposed due to salt dissolution. An accurate account of the Mesozoic geologic history of the Gulf of Mexico must consider the apparent consanguinity of all magmatic rocks of the region, including the Alderdice Bank basalt, and the apparent basinward decrease in age of magmatic activities.
KEYWORDS: Louisiana; continental shelf; geology; reef; geologic history;

01190

Richards, A.F.; Hirst, T.J. 1976. Excess pore pressure in Mississippi Delta front sediments - initial report. Mar. Geotechnique 1(4):337-344.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; geology;

01191

Richards. H.G. 1939. Marine Pleistocene of the Gulf Coastal Plain, Alabama, Mississippi, and Louisiana. Geol. Soc. Am. Bull. 50(2):297-315.

ABSTRACT: None
KEYWORDS: Alabama; Louisiana; Mississippi; geology; geologic history;

01192

Richards, W.J.; Potthoff, T.; Kelley, S.; McGowan, M.F.; Ejsymont, L.; Power, J.H. 1984. SEAMAP 1982 - Ichthyoplankton larval distribution and abundance of Engraulidae, Carangidae, Clupeidae, Lutjanidae, Serranidae, Corphaenidae, Istiophoridae, Xiphiidae, and Scombridae in the Gulf of Mexico. NOAA Southeast Fisheries Center. NOAA Tech. Mem. NMFS-SEFC-144. 55 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fish; plankton;

01193

Richardson, S.L.; McEachran, J.D. 1981. Identification of small (< 3 mm) larvae of king and Spanish mackerel, Scomberomorus cavalla and S. maculatus. Northeast Gulf Sci. 5(1):75-79.

ABSTRACT: Ichthyoplankton surveys in the Gulf of Mexico off Texas yielded larvae of S. cavalla and S. maculatus as small as 1.8mm standard length. These small larvae are described for the first time with emphasis on diagnostic pigment characters. Data are presented to aid in the practical separation of small larvae of these 2 species in mixed plankton samples.
KEYWORDS: Texas; coastal waters; continental shelf; biology; fish; mackerel; taxonomy; plankton;

01194
Riley, G.A. 1938. The significance of the Mississippi River drainage for biological conditions in the northern Gulf of Mexico. J. Mar. Res. 1:60-74.

ABSTRACT: The Mississippi releases a large quantity of soluble phosphate into the Gulf of Mexico. The concentration of soluble phosphate in the river is four times the mean concentration in seawater. The phosphate input from the river leads to a higher standing crop of phytoplankton in waters around the mouth of the river.
KEYWORDS: Louisiana; Mississippi River; biology; nutrient; plankton; primary production;

01195
Riley, G.A. 1967. The plankton of estuaries, p. 316-326. In G.H. Lauff [ed.], Estuaries. American Association for the Advancement of Science, Publication No. 83, Washington, DC.

ABSTRACT: None
KEYWORDS: Atlantic Ocean; Gulf of Mexico; biology; estuary; coastal waters; plankton;

01196
Risotto, S.P.; Collins, J.H. 1986. Gulf of Mexico summary report/index. November 1984 - June 1986. Minerals Management Service, Washington, DC. OCS Information Rep. MMS 86-0084. 102 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; socioeconomics; pipeline; petroleum platform; onshore facilities; environmental impact;

01197
Rivas, L.R. 1973. Big game fishing in the Gulf of Mexico during 1972. National Marine Fisheries Service, Panama City, FL. 18 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; fisheries; fishery statistics; recreation; socioeconomics;

01198
Rivas, L.R. 1974. Big game fishing in the northern Gulf of Mexico during 1973. National Marine Fisheries Center, Southeast Fisheries Center, Panama City, FL. Laboratory report. 6 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; recreation;

01199
Rivas, L.R.; Pristas, P.J. 1975. Big game fishing in the northern Gulf of Mexico during 1974. National Marine Fisheries Center, Southeast Fisheries Center, Panama City, FL. Laboratory report. 9 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; fisheries; recreation;

01200

Roberts, H.H. 1980. Sediment characteristics of Mississippi River Delta - front mudflow deposits. Trans. Gulf Coast Assoc. Geol. Soc. 30:485-496.

ABSTRACT: Hydraulically controlled sediment distribution patterns in Mississippi River delta-front environments are continually being modified by mass-movement processes, and sediments are constantly being redistributed. Numerous deformational features have been identified and mapped by the combined use of side-scan sonar and high-resolution seismic records, coupled with accurate navigational control. One of these, the complex mudflow system, transports much of the upper and intermediate delta-front sediment to deeper shelf and upper slope environments. X-ray radiography of cores collected from various parts of mudflow systems has led to a better understanding of the distribution of minor sedimentary structures and inclusions in these deposits. Mudflow gully heads are characterized by slumps and very irregular bottom topography. Inclined bedding, fractures and small faults, and offset laminations are common in core through gully head sediments. Narrow chutes connect source areas along the sinuous mudflow tract and serve as channels through which sediments move downslope. During movement through the chutes large slump blocks disintegrate to smaller features. Sediments in these areas, as at the base of the flow, display numerous shears, inclined bedding, and partial remolding. Gas expansion and migration features also occur. Widespread depositional lobes are complex features composed of wedges of highly remolded material separated by thin units indicating a different and somewhat slower mode of sedimentation. Abundant gas-related features, convolute bedding,inclined units, evidence of flowage, and completely reworked sediments can be found in mudflow-lobe deposits. In contrast, thin interlobe units as well as distal shelf sediments contain abundant evidence of biogenic activity (burrows, microorganism tests, and shell fragments) and diagenetic products, which are generally missing from mudflow deposits.
KEYWORDS: Louisiana; continental shelf; continental slope; Mississippi River Delta; geology; sediment transport; sediment;

01201

Roberts, H.H.; Cratsley, D.W.; Whelan, T. 1976. Stability of Mississippi Delta sediments as evaluated by analysis of structural features in sediment borings, p. 9-28. In Proceedings, 8th Annual Offshore Technology Conference, May 3-6, 1976, Houston, TX. Paper No. OTC-2425.

ABSTRACT: Numerous failures of manmade structures in the active Mississippi River Delta have initiated various attempts to distinguish stable from unstable areas as well as to determine the effective depth of sediment movement or potential movement. To investigate the sedimentological and geochemical properties of recent deltaic sediments, four borings were taken from areas ranging from one considered stable (well-stratified and acoustically transparent sediments) to one where a suspected mudflow feature (acoustically amorphous) occurred. By means of X-ray radiography the internal sediment characteristics were analyzed. Results of this analysis were compared with geochemical and geotechnical data to better define the type and depth of sediment deformation. Disturbed sediment is easily identified using the X-ray radiography method. Several types of sediment deformation are identifiable from X-ray radiographs: flowage, fracturing, microfaulting, mechanical disturbances owing to the coring procedure, as expansion and migration. Significant differences exist between the assemblages of sedimentological, geochemical, and geotechnical properties of deltaic sediments which have been deformed as opposed to those which have not. Boring 2, taken in an acoustically amorphous region, is the most extensively deformed. Flow structures are common throughout the boring to near the base (about -49 m), at which point fracturing and microfaulting occur. Sediment structure, as well as anomalous profiles of geochemical and geotechnical data, strongly indicate deformation owing to mass movement (mudflow), possibly of a convective nature. Boring 5, also taken in an acoustically amorphous area, shows intricately laminated sediments but no convincing evidence of deformation. Borings 1A and 3A, from acoustically transparent sediments, exhibit classical geochemical and geotechnical profiles and are intermediate cases between Borings 2 and 5 with regard to internal sediment characteristics. Sediment deformation in these borings is restricted to approximately the upper 20 m. If mass movement has occurred,only the sediments of this near-surface zone have been involved. Anomalously high shear strength profiles in Borings 3A (-8 m) and 5 (-21 m) define "crust zones" which appear to be related to an increase in silt content as interpreted from the X-ray radiographs. A transition in depositional environment from prodelta to interdistributary shelf accounts for this feature in Boring 5.
KEYWORDS: Louisiana; Mississippi River Delta; continental shelf; geology; hazard; submarine landslide;

01202

Roberts, H.H.; Singh, I.B.; Coleman, J.M. 1986. Distal shelf and upper slope sediments deposited during rising sea level, north-central Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 36:541-551.

ABSTRACT: Sediments of Louisiana's outer continental shelf and upper slope are generally fine grained but highly variable with regard to internal structures and inclusions. They spread over diverse shelf-to-slope topography resulting from rapid localized sedimentation, mass movement, salt tectonics, and sediment redistribution by marine agents. This variability has made development of concepts of sedimentation and typical depositional sequences difficult. Analysis of numerous recent sediment cores in conjunction with high-resolution seismic profiles have provided a data base for describing those sediments deposited during the last major rise in sea level. Major contrasts in sediment properties occur in two basic depositional settings: opposite a prograding delta lobe and beyond the reach of abundant sediment input from the Mississippi River. Sediments of the distal shelf/upper slope seaward of the active Balize delta lobe are comprised of wedges of mudflow deposits separated by thin, finely laminated units of more slowly deposited sediments containing calcareous microfauna tests, bioturbation features, and early diagenetic products. Mudflow sediments are generally remolded, commonly contain gas related features, flow structures, and soft-sediment deformation plus inclined bedding. Bioturbation features and diagentic products are generally missing, and calcareous microfauna tests are rare. Mudflows are acoustically amorphous, while thin interlobe deposits which separate successive mudflow lobes are usually strong nonparallel reflectors. Mudflow units thin downslope, so that thin-graded beds of terrigenous silts to clays alternate with thin hemipelagic units, creating tightly spaced parallel to subparallel high-resolution seismic reflectors.
KEYWORDS: Louisiana; continental shelf; continental slope; geology; oil and gas; sediment; sediment texture; sediment transport;

01203

Roberts, H.H.; Whelan, T. 1974. Methane derived carbonate cements in barrier and beach sands of a subtropical delta complex. Geochim. Cosmochim. Acta 39:1085-1089.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi River Delta; barrier island; beach; geology; methane; sediment;

01204

Roberts, K.; Pawlyk, P. 1986. Louisiana's commercial fishing licenses issued from 1976 to 1985. Louisiana Sea Grant Pub. No. LSU-T-86-003. 15 p.

ABSTRACT: None
KEYWORDS: Louisiana; fisheries; socioeconomics; fishery management;

01205

Roberts, K.; Sass, M. 1979. Commercial fishing industry licenses in Louisiana, 1978. Louisiana Sea Grant Pub. No. LSU-TL-79-002.

ABSTRACT: None
KEYWORDS: Louisiana; fisheries; socioeconomics; fishery management;

01206

Roberts, K.; Thompson, M. 1981. Commercial fishing industry licenses in Louisiana, 1976-1980. Louisiana Sea Grant Pub. No. LSU-TL-81-001.

ABSTRACT: None
KEYWORDS: Louisiana; fisheries; socioeconomics; fishery management;

01207
Roberts, K.J.; Sass, M.E. 1980. Louisiana's inshore shrimp fishery--commercial shrimper survey. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-TL-80-003. 10 p.

ABSTRACT: Data for a description of the inshore fishery became available from a 1979 economic survey of commercial shrimpers. The survey was part of a Sea Grant funded project designed to fill the void of economic information on Louisiana fisheries. Personal interviews of commercial shrimpers were used to acquire catch, effort, cost, investment, and other economic information for calendar 1978. The mixture of boats and vessels using the inshore waters and existence of three inshore management zones necessitated a stratified sample design. The Louisiana Department of Wildlife and Fisheries (LDWL) computer tape of commercial shrimper license sales for 1978 was sorted to identify resident Coast Guard documented vessels as opposed to resident boats (undocumented). Shrimp licensees operating boats were stratified by three zip code groups to simulate three inshore management zones. Mobility and economic information by zone was of interest in choosing the residence stratification. Vessel lengths were arrayed and industry assistance utilized to establish three length groups. Grouping of vessels was based on comparable operating characteristics. Vessel groups were (1) those less than or equal to 50 feet, (2) those from 51-65 feet, and (3) those 66 feet and larger.
KEYWORDS: Louisiana; coastal waters; fisheries; socioeconomics; shrimp; fishery statistics;

01208
Roberts, K.J.; Thompson, M.E. 1981. Louisiana seafood production economics. Commercial fishing industry licensees in Louisiana, 1976-1980. Louisiana State University, Center Wetland Resources, Baton Rouge, LA. Sea Grant report No. LSU-TL-81-001. 14 p.

ABSTRACT: There is a need for basic information about the people or businesses harvesting the fisheries in Louisiana their numbers, their locations, and certain facets about their fishing operations. The license files of the Louisiana Department of Wildlife and Fisheries (LDWF) are a useful and up-to-date source of detailed information about participation in the state's fisheries, and this publication is a compilation of commercial license information (fresh and saltwater fisheries) extracted from those records for the 1976-1980 period.
KEYWORDS: Louisiana; coastal waters; estuary; fisheries; fishery management; socioeconomics;

01209
Roberts, K.J.; Thompson, M.E. 1983. Petroleum production structures: economic resources for Louisiana sport divers. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; fisheries; socioeconomics; oil and gas; petroleum platform; recreation;

01210
Roberts, K.J.; Thompson, M.E.; Pawlyk, P.W. 1985. Contingent valuation of recreational diving at petroleum rigs, Gulf of Mexico. Trans. Am. Fish. Soc. 114 (2):214-219.

ABSTRACT: The contingent valuation method was used to estimate the economic value of sport diving around the many petroleum structures located off Louisiana's coast. The average diver derived economic surplus in the amount of $163 (95% confidence interval, $136-$190) annually from this activity. Variation of the mean bid was not statistically affected by interview techniques, purpose of trips, years of diving experience, distance traveled over land and sea, investment in equipment, or average trip costs. The number of trips was the only variable that had a significant effect on the mean bid; however, the number of diving trips depended on income, overland distance to port, and trip cost. The trip cost variable, though significant, was positively signed. A finding of a significant positive relationship between trip cost and number of trips indicates the merit of using the direct estimation technique of contingent valuation.
KEYWORDS: Louisiana; coastal waters; continental shelf; oil and gas; petroleum platform; recreation; socioeconomics;

01211
Roberts, T.W. 1977. An analysis of deep-sea benthic communities in the northeast Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; deep sea; ecology; benthos;

01212

Robertson, P.B.; Shelton, C.R. 1980. Lepidactylus triarticulatus: new-species of haustoriid amphipod from the northern Gulf of Mexico. Gulf Res. Rep. 6 (4):415-420.

ABSTRACT: A new haustoriid amphipod, L. triarticulatus sp. nov., from the northern Gulf of Mexico is described and illustrated. The known range is from northern Padre Island, Texas, to Grand Isle, Louisiana [USA]. The species is ecologically plastic. On surf-exposed sandy beaches, it is most abundant at the highest intertidal levels, but in fine-grained sands of wave-sheltered localities it occurs throughout the intertidal region into shallow subtidal depths. In central Texas bays it was collected subtidally at salinities as low as 10 ppt. There are differences in morphological details of peraeopod 7 between the intertidal and subtidal populations which is regarded as an ecotypic variation. A provisional generic characterization is given for the genus Lepidactylus Say.
KEYWORDS: Texas; Louisiana; beach; biology; benthos; taxonomy;

01213

Robinette, H.R. 1983. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico). Bay anchovy and striped anchovy. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/11.14. 15 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; ecology; socioeconomics; anchovy;

01214

Robinson, M.K. 1973. Atlas of monthly mean sea surface and subsurface temperature and depth of the top of the thermocline Gulf of Mexico and Caribbean Sea. Scripps Institution of Oceanography University of California, San Diego. SIO Ref. No. 73-8. 105 p.

ABSTRACT: This large-scale temperature atlas of the Gulf of Mexico and Caribbean Sea presents charts of mean monthly temperatures for the sea surface and five subsurface levels--30.5, 61, 91.5, 122, and 150 m (100, 200, 300, 400 and 492 ft, respectively)--based on bathythermograph (BT) data supplemented by available reversing thermometer data. Included in the atlas are monthly topographies of the top of the thermocline, derived from the temperature fields. The Mercator base charts cover the area 10 to 35 degrees N, 60 to 100 degrees W, and include, for contrast and comparison, the temperature fields in the Atlantic and Pacific Oceans within these boundaries.
KEYWORDS: Gulf of Mexico; physical; continental shelf; temperature;

01215

Rogers, R.M. 1970. Marine meiobenthic organisms of a Louisiana marsh. Master's thesis. Louisiana State University, Baton Rouge, LA. 83 p.

ABSTRACT: None
KEYWORDS: Louisiana; benthos; biology; ecology; marsh;

01216

Rogers, R.M. 1977. Trophic interrelationships of selected fishes on the continental shelf of the northern Gulf of Mexico. Ph.D. Dissertation. Texas A&M University, College Station, TX. 229 p.

ABSTRACT: The present study surveys the trophic interrelationships of 26 demersal fishes inhabiting the continental shelf of the northern Gulf of Mexico. Volumetric stomach content analyses were carried our on 4,550 specimens. Fishes were collected at 128 stations between Brownsville, Texas and St. Andrew's Bay, Florida in depths of approximately 3 to 200 meters. Within each species, fish were grouped by size, depth, and geographical location in order to compare variations in food habits due to these factors. Food habits of the individual species are discussed emphasizing trends in diet by food categories, transitions associated with growth, and variations associated with geographical location. Feeding periodicity is discussed for those species where data were available. From this detailed information, trends in the life history and food habits of continental shelf fishes are proposed. Larger individuals of a species are indicated to spawn in deeper waters. Larval and juvenile fishes subsequently enter the water column, especially the supra-benthic zone, where they undergo a planktonic stage as they are transported by currents toward shallower waters. They eventually settle to the bottom to lead a demersal existence gradually moving offshore to complete the life cycle. This trend in life history pattern is reflected in the ontogenetic food habit transitions. Larvae and juveniles feed largely on zooplankton. The importance of zooplankton decreases with ontogenetic development except in certain planktivorous species. As the importance of zooplankton decreases, benthic organisms increase in importance. Some species remain benthic feeders throughout their life cycle while in others, the contribution of bottom animals decreases, and they are replaced in the diet by larger macrocrustaceans and macromobile organisms. These higher predators feed in the water column on actively swimming prey. From these considerations, a conceptual model of the trophic interrelationships in the benthic zone on the continental shelf is proposed. Two food chains are postulated: a planktonic chain involving conversion of energy fixed by phytoplankton to zooplankton for utilization by higher consumers, and a benthic chain involving conversion of energy fixed in organic detritus to detritus feeders for utilization by consumers in the sediment and eventually consumers in the water column. Zooplankton including larvae and juveniles of higher consumers is eaten largely by small fishes and planktivorous adults. Eggs and larvae of many demersal fishes leave the benthic zone assuming a planktonic existence and escaping predation from this lower zone. Organic detritus enters the benthic food chain largely through assimilation by micro-bottom animals and benthic consumers as well as browsers from the water column. Larger macrocrustaceans and macromobile organisms readily utilize these benthic and pelagic browsers. Trophic energy is lost from the benthic zone to larger pelagic fishes acting as top predators.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; coastal waters; continental shelf; biology; fish; ecology; plankton; benthos;

01217

Rogillio, H.E. 1975. An estuarine sport fish study in southeastern Louisiana. Louisiana Wildlife and Fisheries Commission, Fisheries Bulletin No. 14, New Orleans, LA. 71 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; fisheries; recreation;

01218

Rooney, P.E. [ed.]. 1984. Selected proceedings of the conference entitled: The Barataria estuarine complex: Past, present and future. Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Barataria Bay; biology; geology; ecology; management;

01219

Rose, C.D.; Ward, T.J. 1981. Acute toxicity and aquatic hazard associated with discharged formation water, p. 301-327. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: Formation water is not characterized by high acute toxicity. For example, even when toxicity associated with oxygen demand of water is considered, 96-hr LC50's (7000-8000 ppm) are greater than 96-hr LC50's for components of drilling fluids (265-3500 ppm; Chesser and McKenzie, 1975), most of which are considered to be relatively nontoxic. However, the issue of major concern in assessing potential environmental impacts of discharged formation water is not relative or even absolute toxicity of the water but, rather, whether all conditions associated with its discharge, i.e., toxicity of water, volume discharged, and fate after discharge, indicate the potential for aquatic hazard. Although the basic components of this type of evaluation can readily be extrapolated to other discharges and environments, the conclusions are obviously case-specific. It is important to recognize that a bioassay-based aquatic hazard evaluation can only assess potential hazard associated with discharge of an effluent to an aquatic system. If the evaluation indicates potential hazard to the system, the probability of hazard can best be determined by field studies in the vicinity of the discharge.
KEYWORDS: Texas; continental shelf; oil and gas; biology; chemistry; hydrocarbon; environmental impact; Buccaneer Field;

01220

Rosenthal, T. [ed.]. 1985. FWS/OBS series annotated bibliography: complete listing and subject index. U.S. Fish Wildl. Serv. Biol. Rep. 85(12). 132 p.

ABSTRACT: None
KEYWORDS: biology; ecology; physiology; bibliography;

01221

Rosman, I.; Boland, G.S. 1986. Quantitative photography on the Gulf of Mexico continental slope. SOURCE: p. 14-18. In OCEANS '86 Conference record: Science-Engineering-Adventure. Vol. 1. Systems, structures and analysis.

ABSTRACT: Photography in the deep sea is placed in the context of other deep-sea research. A brief summary of modern techniques for quantitative photography is given along with a description of the Benthic Underwater Camera System (BUCS). Results obtained using BUCS show that trawl samples may grossly underestimate the abundance of deep-sea fauna. Photographs of tube worms and clams taken on the continental slope off Louisiana may show chemosynthetic communities similar to those found at hydrothermal vents.
KEYWORDS: Louisiana; continental slope; biology; benthos; chemosynthesis; seep;

01222

Ross, J.L.; Pavela, J.S.; Chittenden, M.E., Jr. 1983. Seasonal occurrence of black drum, Pogonias cromis, and red drum, Sciaenops ocellata, off Texas. N.E. Gulf Sci. 6(1):67-70.

ABSTRACT: Data are presented on the seasonal occurrence and distribution of black drum (P. cromis) and red drum (S. ocellatus) off Texas. Findings suggest a persistent recurrence of black drum from December to June off Texas and a persistent occurrence of red drum in offshore waters during winter.
KEYWORDS: Texas; coastal waters; continental shelf; biology; fish; drum;

01223

Ross, S.T. 1983. Surf zone ichthyofaunas of the Gulf of Mexico. Biological importance and management implications. In S.V. Shabica, N.B. Cofer, and E.W. Cake, Jr. [ed.], Proceedings of the Northern Gulf of Mexico Estuaries and Barrier Islands Research Conference. National Park Service, Atlanta, GA. 119 p.

ABSTRACT: High energy surf zone habitats bordering the Gulf of Mexico provide an important resource, from both a recreational and biological perspective. Because of the overriding effect of high wind-driven wave energy, such areas show well defined physical characteristics and form a broad filtration system,removing detrital and planktonic components from the water column and concentrating nutrients along the swash zone. Organisms capable of utilizing these regions often show high degrees of morphological, physiological or behavioral specialization and form a very characteristic assemblage. Biological knowledge of surf zone ichthyofaunas in the Gulf of Mexico is still limited, with Horn Island in the northern Gulf and Mustang Island in the western Gulf being the most studied. Surf zone fish faunas are dominated numerically by relatively few species, although over 76 species, most of them rare, have been recorded from the south shore of Horn Island. The faunas are temporally dynamic on both a seasonal and daily basis. Since the surf zone area is utilized by a species often only during part of its life cycle, a strong seasonal periodicity occurs. In general, young fishes occur off high energy beaches in the spring and summer, remaining into early fall. By October and November, in the Northern Gulf, few fishes remain in the habitat, but by early spring numbers begin increasing again. The importance of the region to larger fishes is less well known, in part because of sampling problems. Daily variation also occurs, with the greatest biomass generally before dawn. Numerically dominant species from Gulf of Mexico surf zones include anchovies (Anchoa lyolepis and A. hepsetus), scaled sardine (Harengula jaquana), menhaden (Brevoortia patronus), kingfishes (Menticirrhus americanus, M. littoralis, M. saxatilis), mullets (Mugil curema, M. cephalus), croaker (Micropogonias undulatus) and pompano (Trachinotus carolinus). This region is thus used by a number of commercially important fishes. Various species including Florida pompano, gulf kingfish and scaled sardine are strongly dependent of surf zone areas as a nursery. Striped anchovy, white and striped mullets, gulf menhaden and spot also may be dependent (in terms of juvenile survival) on these high energy systems. Much additional information, especially on horizontal numerical density gradients of organisms seaward from the swash zone, and energy transfer in the surf ecosystem, is needed. It is important to emphasize, however, that the value of a habitat to a species should not be judged solely by the duration that an organism occurs in it, but by how critical a role the habitat plays in the life cycle of the species. Temporally dynamic surf zones utilized by various fishes and invertebrates, especially during portions of their early life history, may have a much greater role in the life cycles of the coastal organisms than previously realized.
KEYWORDS: Gulf of Mexico; barrier island; beach; biology; fish; ecology;

01224

Rotter, R.J. 1985. Pb-210 and Pu-239,240 in nearshore Gulf of Mexico sediments. U.S. Department of Energy. Rep. No. DOE/EV/03852-56. 158 p. NTIS order No. DE85007269/GAR ORO-3852-56.

ABSTRACT: Pb-210, Ra-226, and Pu-239,240 activities were measured in nearshore Gulf of Mexico sediments. Sediment cores were collected from the Mississippi Delta, and the western Gulf of Mexico shelf. Mississippi Delta cores which exhibit significantly higher sedimentation rates show larger inventories of Pb-210. The measured Pu levels from the western shelf are lower than from the delta at comparable depths. In three of the western shelf cores, the observed Pu inventory is considerably less than predicted from atmospheric flux. Therefore, Pu is not being removed to the sediment. A sub-surface Pu maximum has been observed. Excess Pb-210 and Pu levels correlate well with sedimentation rates. This suggests that particle flux is important in removal of Pb-210 and Pu to the sediment. The flux of Mn out of the sediment is correlated with inventory data, suggesting that redox cycling of Mn may play a role in increasing Pb-210 and Pu sediment inventories.
KEYWORDS: Texas; Louisiana; Mississippi River Delta; continental shelf; chemistry; trace metal; sediment; radionuclide;

01225

Rounsefell, G.A. 1954. Biology of commercial fishes of the Gulf of Mexico, p. 507-512. In P.S. Galtsoff [ed.], Gulf of Mexico. Its origin, waters, and marine life. U.S. Fish and Wildlife Service, Fish. Bull. 89(55).

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fisheries; fish;

01226

Rounsefell, G.A. 1964. Preconstruction study of the fisheries of the estuarine areas traversed by the Mississippi River-Gulf Outlet Project. Fish. Bull. 63:373-383

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Mississippi River; biology; fisheries; environmental impact;

01227

Rouse, L.J.; Coleman, J.M. 1976. Circulation observations in the Louisiana Bight using LANDSAT imagery. Remote Sensing Environ. 5:55-66.

ABSTRACT: A method for quantifying the turbidity of offshore water masses using LANDSAT imagery is discussed and the results of a laboratory experiment correlating radiance with concentrations of suspended Mississippi River sediment are presented. The results of the experiment are used to plot suspended sediment contours on eight LANDSAT images of the Louisiana Bight. These contours are observed to depend on the speed and direction of the wind as well as the amount of fresh water discharged by the Mississippi River. The presence of a clockwise circulation in the bight is also indicated by the contours.
KEYWORDS: Louisiana; Mississippi River; physical; remote sensing; current; nepheloid;

01228

Roussel, J.E.; Kilgen, R.H. 1975. Food habits of young atlantic croaker (Micropogon undulatus) in brackish pipeline canals. Louisiana Acad. Sci. 38:70-74.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; biology; ecology; fish; croaker;

01229

Runchal, A.K. [ed.]. 1983. An evaluation of effluent dispersion and fate models for OCS platforms. Vol. 1, Summary and recommendations. Vol. 2, Contributed papers. Report to the Minerals Management Service, Pacific OCS Office, Los Angeles, CA. Contract 14-12-0001-29122. 2 vol. NTIS order Nos. PB84-166446 and PB84-166453.

ABSTRACT: None
KEYWORDS: continental shelf; physical; oil and gas; drilling fluid; model; sedimentation; petroleum platform;

01230
Russell, R. 1965. Some notes on the life history of shrimps of commercial importance in the Gulf of Mexico - a literature review. Gulf Coast Research Laboratory, Ocean Springs, MS. (unpublished report).

ABSTRACT: This report is a cumulative work on the shrimp resources of the United States Gulf coast to 1965. Sections include notes on reproduction, spawning, larval development, food, parasites, population dynamics, fishery data and regulation of shrimping season based on size of the individuals caught.
KEYWORDS: Alabama; Louisiana; Mississippi; biology; ecology; fisheries; shrimp;

01231
Russell, R.J. 1936. Physiography of lower Mississippi River Delta. Louisiana State Department of Conservation, Geological Bulletin 8:3-199.

ABSTRACT: Russell presents a classic synoptic view of the eastern Mississippi River Delta. Though non-quantitative, this report is a valuable description of the Deltas.
KEYWORDS: Louisiana; Mississippi River Delta; geology;

01232
Sackett, W.M.; Brooks, J.M. 1975. Origin and distributions of low molecular weight hydrocarbons in Gulf of Mexico coastal waters, p. 211-230. In T.M. Church [ed.], Marine chemistry in the coastal environment. Am. Chem. Soc. Sympos. Ser. No. 18.

ABSTRACT: Low molecular weight anthropogenic hydrocarbons, particularly from underwater vents, have increased mean concentrations in the Gulf of Mexico coastal waters by an estimated one or two orders of magnitude over equilibrium open-ocean levels. The non-equilibrium situation results in a flux of these hydrocarbons from the sea to the atmosphere.
KEYWORDS: Gulf of Mexico; coastal waters; chemistry; hydrocarbon;

01233
Saila, S.B.; Walker, H.A.; Lorda, E.; Kelly, J.; Prager, M. 1982. Shrimp population studies. West Hackberry and Big Hill Brine disposal sites off southwest Louisiana and Upper Texas Coasts, 1980-1982. Volume 1. Analysis of data on shrimping success, shrimp recruitment and associated environmental variables. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-83012602. 264 p. NTIS order No. PB83-172254.

ABSTRACT: The Strategic Petroleum Reserve Program involves the creation of crude oil storage capacity in salt caverns. As a by-product of solution mining techniques used to create this storage capacity, large quantities of brine are discharged into the Gulf of Mexico. Because of the size of the proposed discharges, there is concern that such disposal may adversely impact the shrimp fishery in the region. This report deals with the assessment of potential impacts of the discharge of brine at West Hackberry and Big Hill disposal sites on the brown and white shrimp fisheries in the southwest Louisiana and upper Texas coastal region.
KEYWORDS: Texas; Louisiana; oil and gas; fisheries; shrimp; brine disposal; environmental impact; Strategic Petroleum Reserve;

01234
Sallenger, A.H.; Penland, S.; Williams, S.J.; Suter, J.R. 1987. Louisiana barrier island erosion study. Coastal Sediments '87:1501-1516.

ABSTRACT: None
KEYWORDS: Louisiana; barrier island; beach; geology; erosion; sedimentation;

01235
Saloman, C.H.; Naughton, S.P. 1983. Food of king mackerel Scomberomorus cavalla from the southeastern United States including the Gulf of Mexico. National Marine Fisheries Service, Panama City, FL. Rep. No. NOAA-TM-NMFS-SEFC-126. 30 p. NTIS order No. PB84-135896.

ABSTRACT: The stomachs of 11,766 king mackerel caught between June 1977 and November 1981 from seven areas (North and South Carolina, Georgia, east central Florida, south Florida, northwest Florida, Louisiana, and Texas) were examined. Forty-one percent of the stomachs were empty. The percent volume of fish in non-empty stomachs ranged from 84.9% in northwest Florida to 99.6% in Louisiana. The percent frequency of occurrence of fish ranged from 77.5% in south Florida to 99.1% in Texas. Thirty-one fish families were contained in the diet. Clupeidae, the dominant family, was present in stomachs from all seven areas. King mackerel were primarily piscivorous; they fed heavily on schooling fishes in all seven areas.
KEYWORDS: Texas; Louisiana; Florida; Atlantic Ocean; continental shelf; biology; fisheries; fish; mackerel;

01236

Saloman, C.H.; Naughton, S.P. 1983. Food of spanish mackerel, Scomberomorus maculatus, from the Gulf of Mexico and southeastern seaboard of the United States. National Marine Fisheries Service, Panama City, FL. Rep. No. NOAA-TM-NMFS-SEFC-128. 27 p. NTIS order No. PB84-155746.

ABSTRACT: The stomachs of 6,933 Spanish mackerel were examined. The mackerel were caught by hook and line, seines, and gill nets between August 1977 and November 1981 from continental shelf waters off Texas, Louisiana, northwest Florida, east central Florida, and North and South Carolina. Differences in stomach contents by area, gear, size of predator, year, and season were studied. Data are presented as percentage volume and percentage frequency of occurrence. About 64% of the stomachs were empty. Eleven families and 24 species of fishes were represented in the diet, with Engraulidae being the most prevalent group of fish prey.
KEYWORDS: Texas; Louisiana; Florida; Atlantic Ocean; continental shelf; biology; fisheries; fish; mackerel;

01237

Sass, M.E. 1979. Descriptive annual statistics for brown and white shrimp in Louisiana waters 1963-1976. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-TL-79-004. 25 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; fisheries; shrimp; fishery statistics;

01238

Sasser, C.E.; Gosselink, J.G.; Peterson, G.W.; Heikamp, A.J., Jr.; Webb, J.C. 1982. Environmental management analysis of the Louisiana Offshore Oil Port. Wetlands 2:249-261.

ABSTRACT: The nation's first deep-draft tanker facility, LOOP INC. (Louisiana Offshore Oil Port), is now in operation off the Louisiana coast in the Gulf of Mexico. The environmental management of this large coastal project has been effective and is a result of cooperative interaction between the state of Louisiana and private industry. LOOP construction activities have inevitably damaged the Louisiana coastal environment. However, the environmental damage has been minimized by strong environmental safeguards built into the enabling legislation and concurred with by LOOP. Environmental input has influenced siting of the LOOP facilities, construction techniques, and operation procedures and has influenced the resolution of many of the environmental concerns that have arisen over the course of the project.
KEYWORDS: Louisiana; coastal waters; oil and gas; environmental impact;

01239

Sather, J.H.; Smith, R.D. 1984. An overview of major wetland functions and values. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-84/18. 75 p.

ABSTRACT: None
KEYWORDS: estuary; marsh; biology; ecology;

01240

Sauer, T.C., Jr. 1980. Volatile liquid hydrocarbons in waters of the Gulf of Mexico and Caribbean sea. Limnol. Oceanogr. 25(2):338-351.

ABSTRACT: Concentrations of volatile liquid hydrocarbons (VLH), C6-C14 hydrocarbons, were determined in 1977 in coastal, shelf and open-ocean surface waters of the Gulf of Mexico and Caribbean Sea. In open-ocean, nonpetroleum-polluted surface water, VLH concentrations were .apprxeq. 60 ng/l, while in heavily polluted Louisiana [USA] shelf and coastal water values reached .apprxeq. 500 ng/l. Caribbean surface samples had very low concentrations, .apprxeq. 30 ng/l. The relationship between anthropogenic gaseous hydrocarbons and VLH was approximately linear. Aromatic VLH accounted for 60-85% of the total VLH in surface waters. Cycloalkane concentrations were < 1.0 ng/l in open ocean water, 60-100 ng/l in polluted water (20% of total VLH). Alkanes were .apprxeq. 15 ng/l in open ocean water, .apprxeq. 40 ng/l in polluted water. The concentrations of 5 major VLH compounds (aromatics) in water samples.sbd.benzene, toluene, ethylbenzene, m- and p-xylenes and o-xylene (called BTX).sbd.were sufficient to predict the total VLH. The empirically determined relationship is VLH (ng/l) = 1.42 BTX (ng/l); r [correlation coefficient] = 0.96. Subsurface VLH concentrations in samples of polluted waters collected from depths of 50 m were only 35-40 ng/l below surface concentrations. Open ocean subsurface samples had concentrations of only .apprxeq. 30 ng/l at 30-50 m depths, comparable to those of Caribbean surface water.
KEYWORDS: Gulf of Mexico; Louisiana; coastal waters; continental shelf; oil and gas; chemistry; hydrocarbon;

01241

Sauer, T.C., Jr. 1981. Volatile liquid hydrocarbon characterization of underwater hydrocarbon vents and formation waters from offshore production operations. Environ. Sci. Technol. 15(8):917-923.

ABSTRACT: Underwater hydrocarbon vent and formation water samples, two discharges from offshore production operations in the Gulf of Mexico, were compositionally characterized for volatile liquid hydrocarbons (VLHs). Hydrocarbons in surface samples of an underwater vent were not detected with carbon numbers greater than 10 (n-C(10)). Alkanes were the major components of all of the VLHs in vent samples with less than 10% being aromatic hydrocarbons. Hydrocarbons in samples of a formation water discharge were considerably more extensive and complex than vented hydrocarbons. Total VLH concentrations were similar to 20 mg/L, 80% of which were aromatic hydrocarbons (mostly benzene, toluene, and xylenes), close to the percentage found in coastal waters of the Gulf of Mexico. Considerable amounts of C(3) and C(4) alkylbenzenes (100-400 mu g/L per component) were evident. Estimations of the amount of VLH discharged into the outer continental shelf of Louisiana and upper Texas from these two discharges were made for underwater hydrocarbon venting, 400x10 super(6)-1200x10(6) g/yr, and for formation waters, 750x10(6) - 1100x10(6) g/yr.
KEYWORDS: Texas; Louisiana; continental shelf; oil and gas; chemistry; hydrocarbon;

01242

Sauer, T.C., Jr.; Sackett, W.M. 1980. Gaseous and volatile liquid hydrocarbons in the marine environment with emphasis on the Gulf of Mexico, p. 133-161. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; oil and gas; hydrocarbon;

01243

Scafe, D.W. 1968;. A clay mineral investigation of six cores from the Gulf of Mexico. Ph.D. dissertation. Texas A&M University, College Station, TX. 73 p.

ABSTRACT: Six gravity cores were taken from nearshore and deep sea areas of the Gulf of Mexico between the Mississippi Delta and Sigsbee Deep in an attempt to determine physical, chemical, and mineralogical properties of clay minerals and their geological significance. Tables are included which show particle size distribution for all samples. This studied was conducted during 1964.
KEYWORDS: Louisiana; coastal waters; continental shelf; continental slope; geology; sediment; mineralogy;

01244

Schapery, R.A.; Dunlap, W.A. 1978. Prediction of storm induced sea bottom movement and platform forces, p. 1789-1796. In Proceedings, Offshore Technical Conference Houston, TX. Paper No. 3259.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi River Delta; geology; sediment transport; wave; hazard;

01245

Schexnayder, J.W.; Barnes, D.P., Jr. 1980. Use of a hurricane storm-surge forecast model for southeast Louisiana. National Oceanic and Atmospheric Administration, National Weather Service, Ft. Worth, TX., Technical Memorandum NOAA TM-NWS-SR-102.

ABSTRACT: The authors attempt to prepare the user to interpret the output of the local storm-surge forecast model, termed SLOSH (sea, lake, and overland surge from hurricanes) and developed for extreme southeast Louisiana and a small portion of south Mississippi. The contents include a description of the model output and input; an outline of the factors that must be considered in interpretation of SLOSH forecasts; a description of the storms considered; and a formulation of the procedure for using the model output which involves obtaining a copy of the SLOSH Catalog of Results, which includes a set of overlays and forms.
KEYWORDS: Louisiana; Mississippi; physical; meteorology; hurricane; model;

01246

Schmidly, D.J. 1981. Marine mammals of the southeastern United States coast and the Gulf of Mexico. U.S. Fish and Wildlife Service, Office of Biological Services, Washington DC. FWS/OBS-80/41. 163 p.

ABSTRACT: All of the available data from a 1979 study/survey on the distribution and abundance of marine mammals in the study area was synthesized for this report. The information for cetaceans and pinnipeds is presented in two sections: an analysis of observations and individual species accounts. The former compares the frequency of strandings, sightings, and captures for each species each month. The species accounts present distribution, abundance, status, seasonal movements, and life history for 35 species.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; biology; ecology; marine mammal; endangered species;

01247
Schmidly, D.J.; Melcher, B.A. 1974. Annotated checklist and key to the cetaceans of Texas waters. Southwest. Nat. 18(4):453-464.

ABSTRACT: Data are presented on six families and 16 species of cetaceans known to inhabit Texas waters. Exact locations of sightings are given.
KEYWORDS: Texas; coastal waters; biology; endangered species; marine mammal; taxonomy;

01248
Schmidly, D.J.; Shane, S.H. 1978. A biological assessment of the cetacean fauna of the Texas coast. Report to the U.S. Marine Mammal Commission, Washington, DC. Contract No. MM4AC008. 38 p.

ABSTRACT: A cetacean salvage and recovery network was established along the Texas coast and operated from 1 January 1974 until 31 December 1975. A total of 28 individuals were obtained during this period, and the species composition was as follows: 21 Tursiops truncatus, 3 Kogia braviceps, 2 Stenella longirostris, 1 Physeter catodon, and 1 Balaenoptera edeni. Most of the strandings occurred in the colder months of the year. The report of S. longirostris is the first record from the Texas coast. In addition to the salvage program, over 80 observations of cetaceans from the Texas coast and adjacent waters were documented. These encompass 19 species of whales and dolphins, of which 17 can be verified by preserved skeletal parts, photographs, or observations made by trained cetologists. The results of this study suggest that, at present, there are no serious problems of human-related mortality of cetaceans along the Texas coast. However, a more complete data base is needed for use in making future decisions about their status in the northwestern Gulf of Mexico.
KEYWORDS: Texas; estuary; coastal waters; biology; marine mammal;

01249
Schneider, K. 1984. Ocean incineration: The public fumes while EPA fiddles. Sierra 69(3):23-26.

ABSTRACT: Gulf Coast residents are waiting for the Environmental Protection Agency (EPA) to issue final permits to burn hazardous wastes in the Gulf of Mexico. Regardless of the decision, the matter is headed for the federal court. Over 6,000 people, including Texas Governor Mark White, voiced their opposition to the plan during a November 1983 EPA hearing. Opponents are concerned about the risk of transporting explosive toxic chemicals, the effects of emissions on the ocean environment, accidents in ports, and the effects on the seafood and tourist industries. With land-based incineration companies operating at half-capacity, the need for ocean incineration is also questioned.
KEYWORDS: Gulf of Mexico; chemistry; environmental impact; ocean incineration;

01250
Schreiber, R.W.; Risebrough, R.W. 1972. Studies of the brown pelican. Wilson Bull. 84:119-135.

ABSTRACT: This paper summarizes the historical status of the Brown Pelican in the United States through 1970; presents data on the effects of human disturbance on clutch size and hatching success for a colony on Tarpon Key, St. Petersburg, Florida in 1969 and 1970; and presents data on eggshell thickness and chlorinated hydrocarbon residues, including polychlorinated biphenyls, for 87 eggs collected from four colonies in Florida in 1969 and 1970. Methods of reporting pollutant residues are reviewed and the relationship between PCBs and DDE in samples is noted. The significance of these levels of contamination and attendant eggshell thinning to the Florida Brown Pelican population is discussed.
KEYWORDS: Gulf of Mexico; biology; bird; brown pelican; endangered species; pesticide;

01251
Schroeder, W.W.; Wiseman, W.J. 1985. Low-frequency shelf-estuarine exchange processes on the northern Gulf of Mexico with emphasis on Mobile Bay. Estuaries 8:84A. (Abstract only).

ABSTRACT: Two years of data from Mobile Bay, Alabama are analyzed to determine the nature of barotropic subtidal exchanges with the northern Gulf of Mexico. The wind-driven response is emphasized, but riverine forcing and non-local forcing by the basin-wide Gulf of Mexico water level variability are also discussed. The seasonal variability of the external forcing affects both the amplitudes and time scales of the various responses. Some conjectures on the importance of baroclinic exchanges in the system are offered. The characteristics of the Mobile Bay system are compared to other estuarine systems along the northern Gulf of Mexico westward to Corpus Christi Bay, Texas.
KEYWORDS: Alabama; Louisiana; Mississippi; Texas; estuary; physical;

01252

Schwarz, J.R.; Alexander, S.K.; Schropp, S.J.; Carpenter, V.L. 1980. Biological/chemical survey of Texoma and Capline sector salt dome brine disposal sites off Louisiana, 1978-1979. Volume III. Describe bacterial communities. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-27. 75 p. NTIS order No. PB81-174948.

ABSTRACT: Bacterial populations present at two proposed brine disposal sites off Louisiana at West Hackberry and Weeks Island were studied. Sediment bacterial populations were most numerous during summer, corresponding to maximum mean in situ temperatures. Greatest levels during all seasons occurred at the West Hackberry site, where the substrate was finer textures and contained a higher organic content. Hydrocarbon degrading bacteria were an indigenous component of the benthic bacterial population throughout the year.The predominant hydrocarbon degrading bacteria from both sites were Pseudomonas.
KEYWORDS: Louisiana; coastal waters; biology; bacteria; hydrocarbon; sediment; environmental impact; brine disposal; Strategic Petroleum Reserve;

01253

Science Applications International Corporation. 1986. Gulf of Mexico physical oceanography program final report: Years 1 and 2. Vol. I: Executive summary; Vol. II: Technical Report. Report to the Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. Contract No. 14-12-0001-29158. OCS Studies MMS 85-0093 and MMS 85-0094. 2 vol.

ABSTRACT: In 1982, the Minerals Management Service (MMS) initiated a multi-year program under contract with Science Applications International Corporation (SAIC) to study the physical oceanography of the Gulf of Mexico. This report describes the methods and results of the first two years of the program. The program had two major goals: (1) to develop a better understanding and description of conditions and processes governing Gulf circulation, and (2) to establish a data base that could be used as initial and boundary conditions by a companion MMS-funded numerical circulation modeling program. During Years 1 and 2, measurements and interpretation focused on circulation in the eastern Gulf, with special emphasis on the Loop Current and its interaction with the adjacent west Florida shelf and slope waters. However, the information about the Loop Current is also pertinent to general circulation patterns in both the eastern and western Gulf.
KEYWORDS: Gulf of Mexico; Florida; physical; current; wind; Loop Current; remote sensing;

01254

Science Applications International Corporation. 1987. Gulf of Mexico physical oceanography program final report: Year 4. Vol. I: Executive summary; Vol. II: Technical Report. Report to the Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. Contract No. 14-12-0001-29158. OCS Studies MMS 87-0006 and MMS 87-0007. 2 vol.

ABSTRACT: In 1982, the Minerals Management Service (MMS) initiated a multi-year program under contract with Science Applications International Corporation (SAIC) to study the physical oceanography of the Gulf of Mexico. This report describes the methods and results of the Year 4 of the program. The program had two major goals: (1) to develop a better understanding and description of conditions and processes governing Gulf circulation, and (2) to establish a data base that could be used as initial and boundary conditions by a companion MMS-funded numerical circulation modeling program. During Years 1, 2, and 4 (there was no Year 3), measurements and interpretation focused on circulation in the eastern Gulf, with special emphasis on the Loop Current and its interaction with the adjacent west Florida shelf and slope waters. However, the information about the Loop Current is also pertinent to general circulation patterns in both the eastern and western Gulf.
KEYWORDS: Gulf of Mexico; Florida; physical; current; wind; Loop Current; remote sensing;

01255

Science Applications International Corporation. 1988. Gulf of Mexico physical oceanography program final report: Year 3. Vol. I: Executive summary; Vol. II: Technical Report. Report to the Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. Contract No. 14-12-0001-29158. OCS Studies MMS 88-0045 and MMS 88-0046. 2 vol.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Florida; physical; current; wind; Loop Current; remote sensing;

01256

Scott, M.R. 1986. Geochemistry of uranium and thorium series nuclides and of plutonium in the Gulf of Mexico: Final report. Report to Department of Energy, Washington, DC. Rep. No. DOE/EV/03852-T1. 5 p. Contract No. AS05-76EV03852. NTIS order No. DE87008358/XAB.

ABSTRACT: This project focussed on the question of the transport of plutonium by the Mississippi River and the subsequent fate of that material when it entered the ocean. Samples were collected from the Mississippi and its tributaries, and from other rivers spanning a gradation in climate from the arid Rio Grande region to the subtropical Suwannee River. Plutonium analyses of water and of suspended and bottom sediments were complemented with Fe, Mn, Al, CaCO3, and organic matter measurements. Analyses of uranium and thorium isotopes, sup 210 Pb, and 226-Ra were made to serve both as tracers for transport processes, and (for the reactive nuclides) as steady state chemical analogues for plutonium.
KEYWORDS: Gulf of Mexico; Mississippi River; chemistry; geology; radionuclide; sediment;

01257

Scruton, P.C. 1956. Oceanography of Mississippi Delta sedimentary environments. Am. Assoc. Pet. Geol. Bull. 40(12):2864-2952.

ABSTRACT: The Mississippi, one of the world's great rivers, has transported a vast quantity of sediment to the Gulf of Mexico during its history. Understanding the oceanography around the Mississippi's mouth increases our understanding of the sediments which have formed there and also the oceanography of other similar areas where fresh water meets and flows into the sea. Despite the size of the Mississippi, it is small relative to the entire Gulf of Mexico, and ocean currents off its mouth can be compared with currents in a large tank off a very small rubber hose. The large body of water flows first one way and then another and carries with it the minor volume of hose discharge. Currents due to hose discharge are relatively small swirls localize about the orifice. The regional gulf current pattern provides the background on which are superimposed local conditions off the delta. Regional or semi-permanent currents are produced both by winds blowing over the entire gulf and by regional density differences acted upon by gravity. Density differences are due to fresh water input at many places and to gulf-wide evaporation, heating, and cooling. The semi-permanent current flows northward in the central gulf, and on approaching land south of the delta, apparently divides into two tongues. These tongues diverge and flow eastward and westward away from the delta.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; geology; physical; current; sedimentation;

01258

Scruton, P.C. 1960. Delta building and the deltaic sequence, p. 82-102. In F.P. Shepard, F.B. Phleger, and T.H. Van Andel [ed.], Recent sediments, northwestern Gulf of Mexico. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: Study of the Mississippi Delta and several others shows that there are order and pattern in delta building. The characteristic stratigraphic sequences form during a delta cycle which consists of constructional and destructional phases. Marine deltas are seaward-thickening embankments of sediments deposited during the constructional phase and modified by the destructional phase. Sediments of the embankments are mostly land-derived clastics deposited in orderly sequence on the sea floor about distributary mouths. They make up the top-set, and bottom-set beds of classical delta literature. Because of the way deltas grow, sediments change vertically in completed deltas in the same way they change seaward during construction; definite similarities between different deltaic sequences can be seen when they are compared. Changing sediment properties are produced by seaward-changing depositional environments. Sedimentary environments of modern deltas, and ancient ones as well, are complicated when studied in detail, but the general relationships now are well known. The environments are defined by (1) sediment sources, (2) processes and their intensities, and (3) rates of deposition. Source areas determine the raw materials, and these differ from delta to deltas. Similar marine and fluviatile process intensity, and relatively high rates of deposition are the environmental properties that cause deltaic sequences to be similar. Relatively rapid deposition is the fundamental characteristic of deltas. Deltas rarely build indefinitely in one direction; rather, the river shifts for a shorter route to the sea when it becomes over-elongated. The recently built delta is abandoned and modified by compaction coupled with marine wave and current action. This is the destructional phase, the time of winnowing of fine sediment and concentration of coarse material into thin veneers, beach ridges, and barrier islands. Large alluvial plains at river mouths are built up in a step-by-step manner. Local delta construction is followed by partial destruction, and later, by another constructional phase. A large alluvial plain consists of several imbricating deltas, each lying partly on the toes of earlier deltas and partly on the surface that existed prior to any delta building. The stratigraphic components of younger deltas become seaward extensions of their older counterparts. When the beds are buried beneath still younger ones, their full history can be understood only by recognizing their deltaic origin and by knowing how deltas are built.
KEYWORDS: Louisiana; Mississippi River Delta; geology; geologic history; stratigraphy;

01259
Seadock, Inc. (No date). Texas offshore crude oil unloading facility -- environmental report. Seadock, Inc., Houston, TX.

ABSTRACT: This report discusses the proposed offshore crude oil unloading facility for Texas. Chapters include a general description of proposed facilities; a discussion of the existing environment; mitigating actions including environmental restoration and enhancement and oil spill prevention; unavoidable effects; alternatives; and permits.
KEYWORDS: Texas; oil and gas; environmental impact;

01260
Setzler, E.M.; Boynton, W.R.; Wood, K.V.; Zion, H.H.; Lubbers, L. 1980. Synopsis of biological data on striped bass, Morone saxatilis (Walbaum). National Marine Fisheries Service, Seattle, WA. Rep. No. NOAA-TR-NMFS-CIRC-433. 79 p. NTIS order No. PB80-225444.

ABSTRACT: This synopsis reviews literature on the taxonomy, morphology, distribution, life history, population, ecology, recreational and commercial harvest, and culture of the striped bass, Morone saxatilis (Walbaum). The striped bass is a anadromous species distributed along the Atlantic coast from northern Florida to the St. Lawrence Estuary, Canada; along the Gulf of Mexico from western Florida to eastern Louisiana; and along the Pacific coast from Ensenada, Mexico, to British Columbia, Canada. Populations have been established in numerous inland reservoirs and lakes.
KEYWORDS: Louisiana; Florida; Gulf of Mexico; Atlantic Ocean; Pacific Ocean; estuary; coastal waters; biology; fish; bass; taxonomy; ecology;

01261
Shabica, S.V.; Cofer, N.B.; Cake, E.W., Jr. [ed.]. 1983. Proceedings of the Northern Gulf of Mexico Estuaries and Barrier Islands Research Conference, June 13-14, 1983, Biloxi, MS. National Park Service, Southeast Regional Office, Atlanta, GA. 119 p.

ABSTRACT: These proceedings include papers given at the Northern Gulf of Mexico Estuaries and Barrier Islands Research Conference. This conference was held to bring together much of the current knowledge of barrier islands and estuaries of the northern Gulf. Fifteen of the forty-four presentations given at the conference are published here as format papers. The volume is divided into four sections; estuaries, offshore petroleum exploration and development, barrier islands, and resources management.
KEYWORDS: Gulf of Mexico; estuary; barrier island; biology; geology; oil and gas; environmental impact;

01262
Shane, S.H. 1980. Occurrence, movements, and distribution of bottlenose dolphin, Tursiops truncatus, in southern Texas. Fish. Bull. 78(3):593-602.

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; biology; marine mammal;

01263
Shane, S.H.; Wells, R.S.; Wursig, B.; Odell, D.K. 1982. A review of the ecology, behavior, and life history of the bottlenose dolphin. Report by the University of Southern Mississippi to the Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. Contract No. 14-12-0001-29118. Rep. No. MMS-GM-PT-83-011. 72 p. NTIS order No. PB84-117613.

ABSTRACT: The behavior, ecology, and life history of the bottlenose dolphin are reviewed with and eye toward identifying the potential impact of oil exploration and development in the Gulf of Mexico on this species. Habitat alteration probably represents the most serious human impact on dolphins in the Gulf. The long-term effects of oil-related activities are of more concern than short-term effects.
KEYWORDS: Gulf of Mexico; biology; marine mammal; oil and gas; environmental impact;

01264
Sharp, J.M. 1979. The cumulative effects of petroleum drilling and production in coastal and near-shore areas, p. 3-15. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; environmental impact; oil spill; Offshore Ecology Investigation;

01265

Shaub, F.J.; Buffler, R.T.; Parsons, J.G. 1984. Seismic stratigraphic framework of deep Central Gulf of Mexico basin. Am. Assoc. Pet. Geol. Bull. 68 (11):1790-1802.

ABSTRACT: The University of Texas Institute for Geophysics (UTIG) has completed a regional seismic stratigraphic study of approximately equals 5,000 nmi of multichannel reflection data from the deep Gulf of Mexico basin. An earlier seismic stratigraphic framework defined by UTIG from fewer data (Ladd et al, 1976) has thus been modified using additional track and recently developed seismic stratigraphic principles (Vail et al, 1977). This paper describes the 6 deep basin seismic stratigraphic units now used by UTIG. Examples of seismic data and isopach maps show unit characteristics, areal distribution, and thickness. Each unit is discussed in terms of its estimated age, possible depositional environment, depocenter locations, and provenance.
KEYWORDS: Gulf of Mexico; geology; stratigraphy;

01266

Shaw, R.F.; Wiseman, W.J., Jr.; Turner, R.E.; Rouse, L.J., Jr.; Condrey, R.E. 1985. Transport of larval Gulf menhaden (Brevoortia patronus) in continental shelf waters of western Louisiana: A hypothesis. Trans. Am. Fish. Soc. 114:452-460.

ABSTRACT: The gulf menhaden commercial fishery in the Gulf of Mexico is the largest by weight in the United States. Spawning takes place on the continental shelf during fall and winter and the pelagic larvae are transported into estuarine nursery areas. Quantitative information on a transport mechanism had previously been lacking. Knowledge of the coupling between continental shelf and estuaries is necessary to understand the causes of high natural variability in estuarine recruitment and to develop and evaluate spawner-recruit and environment-survival relationships. Analysis of a variety of biological and physical data led to the development of a testable transport hypothesis. The hypothesis suggests that west-northwest longshore advection within the horizontally stratified coastal boundary layer is the primary mechanism transporting gulf menhaden larvae to the Calcasieu River estuary, the major estuarine system in western Louisiana.
KEYWORDS: Louisiana; physical; biology; fish; fisheries; Gulf of Mexico; continental shelf; menhaden; current;

01267

Sheaffer & Roland, Inc. 1981. Barrier island development near four national seashores. Report for the Council on Environmental Quality; Federal Emergency Management Agency, U.S. Fish and Wildlife Service, National Park Service, and National Oceanic and Atmospheric Administration, Office of Coastal Zone Management. 69 p.

ABSTRACT: None
KEYWORDS: Texas; beach; barrier island; socioeconomics;

01268

Shelton, C.R.; Robertson, P.B. 1981. Community structure of intertidal macrofauna on 2 surf exposed Texas sandy beaches. Bull. Mar. Sci. 31 (4):833-842.

ABSTRACT: The intertidal macrofauna of 2 surf-exposed Texas sandy beaches (a mainland beach and a barrier island beach) was studied from July 1976-June 1977 to determine species composition, abundance, biomass, diversity, zonation and seasonal changes. The numerically dominant species (both beaches combined) were the haustoriid amphipods Haustorius sp. and Lepidactylus spp., the polychaetes Scolelepis squamata and Lumbrineris impatiens and the bivalves Donax Texasiana, D. roemeri and D. dorotheae. D. Texasiana comprised the greatest biomass at both beaches. Mean density of individuals was .apprx. 3 times and biomass density > 5 times greater at the barrier island beach, characterized by greater wave energy and more uniformly well-sorted sand. Species diversity and richness (lack of high dominance) were higher at the mainland beach and were lower and more variable, with higher dominance, at the barrier island beach. Species composition of intertidal macrofauna inhabiting warm temperate western Atlantic and Gulf of Mexico beaches is compared with that of tropical southwestern Gulf beaches. The major latitudinal difference is the replacement of haustoriid amphipods, which dominate upper and mid tide levels of temperate beaches, by cirolanid isopods on tropical beaches of the southwestern Gulf.
KEYWORDS: Texas; barrier island; beach; biology; benthos;

01269

Shepard, F.P. 1955. Delta front valleys bordering the Mississippi distributaries. Geol. Soc. Amer. Bull. 66:1489-1498.

ABSTRACT: Shallow discontinuous valleys crease the upper portion of the continental slopes in the region where the Mississippi Delta has built across the shelf. These valleys attest to the instability of the forward-growing slope despite its average inclination of only percent. Mass movements probably of the earthflow type appear to be the cause of the valleys rather than turbidity currents because deposits from valley floors show no concentration of sand by currents, and many of the valleys are not located at points where large discharge of sediment-laden water could produce turbidity currents. Furthermore depressions and hills along the course of the valleys and their short length differentiate them from the long continuous slightly incised valleys which are outer continuations of submarine canyons and which are generally ascribed to turbidity currents. The delta front valleys shift position as the slopes are built forward.
KEYWORDS: Louisiana; Mississippi River Delta; erosion; geology; sediment transport; sediment;

01270

Shepard, F.P. 1956. Marginal sediments of the Mississippi Delta. Am. Assoc. Pet. Geol. Bull. 40(11):2537-2618.

ABSTRACT: To obtain a better grasp of the litho-facies and bio-facies of the delta-to-marine transition, a study has been made of the sedimentary environments bordering the eastern, actively growing distributaries of the Mississippi birdfoot delta. Approximately 1,000 samples, mostly cores, were obtained from the distributary mouths, the continental shelf to the east of the delta, the continental slope to depths of 550 feet, and Breton and Gosier islands. For comparative purposes samples have also been obtained in the vicinity of South and Southwest passes. The present paper discusses primarily the characteristics of the surface sediment, leaving for a future report a discussion of a relatively shallow third-dimensional phase of the study which is not yet complete.
KEYWORDS: Louisiana; Mississippi River Delta; geology; geologic history; sediment;

01271

Shepard, F.P. 1960. Gulf coast barriers, p. 197-220. In F.P. Shepard, F.B. Phleger, and T.H. Van Andel [ed.], Recent sediments, northwestern Gulf of Mexico. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: The barriers which skirt the greater water part of the northern Gulf Coast constitute sand bodies with widths up to several miles and thicknesses of 20 to 60 feet. In most places the sand bodies are bordered on both sides by muddy sediments. The larger barriers have at least four facies-beaches, dune belts, barrier flats or marshes, and inlets. Each of these has sediment characteristics which are usually distinctive, one from the other. The beach sands can generally be separated from the dune sands by lower grain roundness, lower silt content, and more even stratification. The barrier flats and marshes have higher silt and clay content than the other environments and commonly contain calcareous aggregates. The inlets are intermediate in sand content and can be recognized by their mixture of bay and open-gulf organic remains. The barrier islands have formed either during or since the rise in sea level at the end of the last glacial epoch. Contrary to a longshelf opinion, they are not related to coast lines of emergence but either to slow submergence or to a steady state. Accordingly, it is reasonable that the ancient barriers should have been preserved in the stratigraphic column of a subsiding areas like the Gulf Coast. The source of sand necessary to maintain the barriers is to a great extent the sand deposits of the continental shelf, supplemented by the sands of the few rivers which enter directly into the gulf rather than into bays. In places where the shelf sand has been covered by mud. the barriers have been known to be completely eroded. Some of the barriers are growing seaward and others have retreated, while still others have been quite stable in position during historical items. Barriers are common along other coastal lowlands around the various continents, although they may develop to a moderate extent along mountainous coasts. They are particularly common along the flanks of the large deltas of the world, occurring especially at points where the delta deposition has temporarily ceased and where the area is subsiding and being reworked by the waves.
KEYWORDS: Gulf of Mexico; barrier island; geology; sediment; geologic history;

01272

Shepard, F.P. 1960. Mississippi Delta: marginal environments, sediments, and growth, p. 56-81. In F.P. Shepard, F.B. Phleger, and T.H. Van Andel [ed.], Recent sediments, northwestern Gulf of Mexico. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: The study of more than a thousand samples from the Mississippi Delta margins and from shallow borings made into the delta has provided some criteria for recognizing ancient delta facies. Almost all Mississippi Delta sediments are high in wood fibers, mica, and ferruginous aggregates. It is suggested that this rapidly advancing delta includes the traditional top-set, fore-set, and bottom-set beds, although the depositional slope of the fore-set beds is almost everywhere less than 1 degree. The top-set beds are divided into subaerial and shallow marine. The subaerial include channel deposits, a mixture of sandy and clayey sediments with rare Foraminifera introduced by the salt wedge which penetrates the river mouth at low water; levee deposits consisting of laminated sands and silty clays; and marsh deposits which include peat beds and an abundance of rootlets along with layers of silty sand. The shallow marine includes delta-front platform deposits which are commonly laminated and show rapid lateral and vertical changes from silty sands to silty clay, and interdistributary bay deposits which contain almost as much sand as the delta-front platform deposits and differ only in having somewhat thicker layers of clayey sediments and less lamination. The fore-sets beds show a marked change from the platform deposits in having very little lamination and consisting almost entirely of poorly stratified silty clays. The fore-set beds resemble the top-sets beds show a marked change from the platform deposits in having very little lamination and consisting almost entirely of poorly stratified silty clays. The fore-set beds resemble the top-set in having a scarcity of organic remains. The bottom-set beds are also silty clays, but they have a considerably greater percentage of Foraminifers, echinoids, and shell fragments than found in the other environments. evidently owing to slower deposition and higher productivity at a moderate distance beyond the river mouth. Mottling patterns due to reworking by organisms appear in the bottom-set beds and are found to an even greater degree in the more sandy deposits of Breton Sound. Reworked delta deposits from which the fines have been removed are found in Breton Island and on the sea floor to the east, whereas a sandy old shelf deposit occurs farther east and to the south. These old shelf deposits are being overlapped by the bottom-set beds of the modern delta.
KEYWORDS: Louisiana; Mississippi River Delta; geology; mineralogy; sediment; sediment texture; geologic history;

01273

Shepard, F.P.; Moore, D.G. 1960. Bays of central Texas coast. In F.P. Shepard, F.B. Phleger, and T.H. van Andel [ed.], Recent Sediments, Northwest Gulf of Mexico. Am. Assoc. Petrol. Geol., Tulsa, OK.

ABSTRACT: Approximately 1,000 samples have been obtained from the bays of the central Texas coast. Their size parameters, constituents, and organisms have been studied in relation to salinity, depth of water, and relations to entering rivers and to inlets. All of these bays are cut off from free connection with the gulf by barrier islands, although widely-spaced inlets allow some exchange with gulf waters. Among the bay facies are (1) bays near stream mouths which have alternating silty clays and sands, commonly laminated and containing abundant plant fibers and aggregates, along with abundance ostracods in some localities; (2) shallow bays not related to stream mouths, which have an abundance of marine plants, a large number of gastropods, and higher sand content than most other bay environments; (3) deep central bays which have unstratified silty clay sediments commonly with a high content of benthonic Foraminifera in the coarse fraction; (4) central bays with oyster reefs which have bee built up above the surrounding bay surfaces; and (5) bays near inlets or narrows where the currents have introduced considerable sand, and the sediment is a bimodal sandy clay with relatively small silt content.
KEYWORDS: Texas; estuary; geology; sediment texture; sediment;

01274

Shepard, F.P.; Phleger, F.B.; van Andel, T.H. [ed.]). 1960. Recent sediments, northwest Gulf of Mexico. Am. Assoc. Petrol. Geol., Tulsa, OK. 394 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; continental slope; geology; sediment;

01275

Sheridan, P.F. 1983. Abundance and distribution of fishes in the Galveston Bay, Texas system 1963-1964. Contrib. Mar. Sci. 26:143-164.

ABSTRACT: The fish fauna inhabiting the Galveston Bay estuarine system was studied from Jan. 1963 through Dec. 1964; 96 spp. and 364,815 individuals were collected by trawl. Dominant in the system was Micropogonias undulatus (51.2% by number, 36.5% by wet weight). Other numerically important fishes were: Anchoa mitchilli, 22.3%; Stellifer lanceolatus, 8.0%; Leiostomus xanthurus, 4.1%; Cynoscion arenarius, 3.3%; and Arius felis, 2.4%. In terms of biomass, other important species were: L. xanthurus, 9.1%; Mugil cephalus, 7.6%; S. lanceolatus, 6.5%; A. felis, 5.7%; and C. arenarius, 5.0%. Fishes were most abundant in the upper estuary, but the number of species recorded was highest in the shallow Gulf of Mexico just offshore from the estuary. S. lanceolatus was the most abundant fish in the channel zones of the estuary and co-dominated with C. arenarius in Gulf waters. Anchoa mitchilli was the dominant fish in the waters of the main tidal pass. In all other zones (open, near shore and peripheral waters) and bay subareas, Micropogonias undulatus was numerically dominant. The areas of maximum abundance for 59 spp. are also given. Mean number of fishes per tow was significantly higher in 1963 than in 1964, attributable mainly to larger catches of A. mitchilli and S. lanceolatus in several months of 1963. On an annual basis, mean fish biomass per tow was stable even though monthly differences were noted. No other system-wide studies of the fish fauna of Galveston Bay have been conducted. Results of the few limited investigations conducted before or after 1963-1964 conflict with the results of the latter. Resultant differences might equally be attributed to natural fish population fluctuations, differences in sampling methodology and rapid human, development and use of the estuary and surrounding lands.
KEYWORDS: Texas; Galveston Bay; estuary; biology; ecology; fish;

01276

Sheridan, P.F.; Trimm, D.L.; Baker, B.M. 1984. Reproduction and food habits of seven species of northern Gulf of Mexico fishes. Contrib. Mar. Sci. 27:175-204.

ABSTRACT: Sex ratios, length-weight relationships, maturation, fecundity, and food habits were determined from 7,400 individuals of seven species of inner continental shelf fishes. Sex ratios favored males in silver seatrout, Cynoscion nothus, and Atlantic cutlassfish, Trichiurus lepturus, favored females in Atlantic croaker, Micropogonias undulatus, hardhead catfish, Arius felis, and longspine porgy, Stenotomus caprinus, but were equal in sand seatrout, C. arenarius, and spot, Leiostomus xanthurus. Food habits on either side of the Mississippi Delta were related to age, location, and time of capture. Atlantic cutlassfish were piscivorous.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; fish; ecology; seatrout; spot; croaker;

01277

Sheridan, P.F.; Zamora, G., Jr.; Castro, R.G. 1988. Experimental analysis of shrimp movements adjacent to the Texas-Tamaulipas border. Unpublished manuscript, in preparation.

ABSTRACT: None
KEYWORDS: Texas; Mexico; coastal waters; biology; fisheries; shrimp;

01278

Sherrod, C.L.; Hockaday, D.L.; McMillan, C. 1986. Survival of red mangrove Rhizophora mangle on the Gulf of Mexico coast of Texas. Contrib. Mar. Sci. 29:27-36.

ABSTRACT: Although viable propagules of red mangroves, Rhizophora mangle L., arrive on Texas beaches, they have not been observed to naturally establish on the Texas coast. Propagules from Florida that were experimentally established on the southern Texas coast at South Padre Island and at the mouth of the Rio Grande in February and April 1983 survived until the record freeze of December 1983. Propagules of unknown origin that had apparently been artificially established on South Padre Island prior to 1983 had achieved heights ranging up to 2.5 m and had successfully reproduced prior to their destruction in the subfreezing conditions in December 1983. The frequency, duration and/or severity of cold winter temperatures is a prime factor governing the distribution and abundance of mangrove species in the northern Gulf of Mexico, including the red mangrove.
KEYWORDS: Texas; Padre Island; biology; mangrove; flora; physiology;

01279

Sherrod, C.L.; McMillan, C. 1985. The distributional history and ecology of mangrove vegetation along the northern Gulf of Mexico coastal region. Contrib. Mar. Sci. 28:129-140.

ABSTRACT: Historical records and geologic evidence indicate that mangrove populations of the northern Gulf of Mexico region have varied considerably in abundance and species composition since at least the early Tertiary, principally as the result of global, regional and local climatic fluctuations. Recent isozymal and temperature tolerance research has revealed genetic variation between eastern and western Gulf and Caribbean populations of black mangrove and latitudinal ecotypic variations suggesting that an apparent Pleistocene extirpation of mangroves from the northern Gulf region may have caused genetic isolation of east-west populations and a mechanism for natural selection of latitudinal adaptive gradients during post-Pleistocene recolonization. At the present time, four principal mangrove species occur in the Gulf of Mexico--red mangrove (Rhizophora mangle L.), white mangrove (Laguncularia racemosa), black mangrove (Avicennia germinans), and button mangrove (Conocarpus erectus). The black mangroves of the coast of Texas have in the last century experienced population declines and expansions primarily due to localized climatic extremes.
KEYWORDS: Gulf of Mexico; biology; flora; mangrove; ecology; biogeography;

01280

Shew, D.M; Baumann, R.H.; Fritts, T.H.; Dunn, L.S. 1981. Texas barrier islands region ecological characterization: environmental synthesis papers. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-81/32. 413 p.

ABSTRACT: This report is a synthesis of selected environmental literature for the Texas barrier islands region and is a part of the Texas Barrier Islands Region Ecological Characterization Study. The Texas barrier islands region is defined to include the coastal counties and extends 64 km inland and offshore to the State-Federal demarcation. These papers deal with six drainage basins along the Texas coast: Galveston, Matagorda-Brazos, San Antonio, Copano-Aransas, Corpus Christi, and Laguna Madre; as well as the marine system offshore. The papers address the geology, climate, hydrology and hydrography, and biology of each basin. This study is intended to serve as a general reference work and as a guide to the literature. It is designed to be used in planning for the requirements of OCS oil and gas development and coastal zone management.
KEYWORDS: Texas; barrier island; biology; geology; physical; chemistry; oil and gas; ecology; meteorology; environmental impact;

01281

Shideler, G.L. 1976. Textural distribution of sea-floor sediments, south Texas outer continental shelf. J. Res. U.S. Geol. Surv. 4(6):703-713.

ABSTRACT: The general texture of sea-floor sediments along the south Texas Outer Continental Shelf was evaluated in terms of gravel, sand, silt, and clay components. The gravel component is quantitatively minor and is concentrated mainly in the southern sector; it consists, for the most part, or relict biogenic detritus dominated by molluscan shells. The sand component consists of terrigenous and biogenic detritus. Modern sand is localized along the shoreface sector, whereas palimpsest and relict sands characterize the northern and southern sectors, which are the respective locations of the ancestral Brazos-Colorado and Rio Grande deltas. The central sector contains an extensive modern mud blanket that appears to be migrating southward over relict deposits of the ancestral Rio Grande delta. The silt fraction is the highly dominant component of the mud blanket; silt appears to be hydraulically trapped within the shelf environment and constitutes the most abundant detrital component within the Outer Continental Shelf region. The subordinate clay component of the mud blanket is concentrated toward the shelf break and may be largely escaping into deeper water environments.
KEYWORDS: Texas; continental shelf; geology; sediment; sediment texture; STOCS;

01282

Shideler, G.L. 1977. Late Holocene sedimentary provinces, south Texas outer continental shelf. Am. Assoc. Petrol. Geol. Bull. 61(5).

ABSTRACT: The late Holocene sedimentologic framework of the South Texas outer continental shelf (OCS) from Matagorda Bay to the United States-Mexico border was studied as part of the national OCS environmental studies program associated with offshore petroleum lease sales. Late Quaternary sea-level fluctuations have resulted in the development of three generally distinct sedimentary provinces based on textural-morphologic equilibrium criteria. Seafloor topography and surficial sediment patterns delineate a southern province dominated by relict topography of the Pleistocene and Holocene ancestral Rio Grande delta; the province is composed of a heterogeneous mixture of modern mud and relict muddy sands in textural disequilibrium with the present hydraulic regime. A northern province is dominated by relict topography along the southwestern flank of the ancestral Brazos-Colorado delta; it is composed of palimpsest sandy-mud deposits that have achieved partial equilibrium with present hydraulic conditions, and that appear to be undergoing some net-southward transport. A central interdelta province is characterized by a modern depositional surface; it contains an extensive modern mud blanket that appears to be encroaching southward over relict deposits of the ancestral Rio Grande delta. Surficial-sediment texture suggests a modern sediment-dispersal system characterized by net-off-shore and net-southward transport components. Shallow subsurface sediments penetrated by gravity cores indicate that the modern dispersal pattern was established during earlier Holocene time but has been modified during the later stages of the Holocene transgression. Relative to the sand facies, the mud facies has expanded and migrated shoreward with time, thus reflecting a transgressive overlap relation.
KEYWORDS: Texas; continental shelf; geology; sediment; sediment texture; STOCS;

01283

Shideler, G.L. 1978. A sediment-dispersal model for the south Texas continental shelf, northwest Gulf of Mexico. Mar. Geol. 26:289-313.

ABSTRACT: Textural-distribution patterns of the sea-floor sediments on the South Texas continental shelf between Matagorda Bay and the U.S.-Mexico international boundary were evaluated as part of a regional environmental-studies program. Sediment textural gradients support a conceptual model for the regional sediment-dispersal system, which is characterized by both net offshore transport and net south-tending coastwise transport components on a wind-dominated shelf. Coastwise transport results in the net southward migration of both palimpsest sandy mud composing the ancestral Brazos-Colorado delta flank in the northern sector, and modern mud composing the central sector; these migrating sediments are encroaching southward onto immobile relict muddy sands composing the ancestral Rio Grande delta in the southern sector.
KEYWORDS: Texas; continental shelf; geology; sediment transport; sediment texture; sediment; STOCS;

01284

Shideler, G.L. 1978. Physical characteristics of suspended sediments, south Texas continental shelf. Report to the Bureau of Land Management, New Orleans, LA. Contract No. AA551-MU8-11. BLM/YM/ES-78/05. 68 p. NTIS order No. PB80-164130.

ABSTRACT: This report presents the results of a three-year study of suspended sediments within the south Texas OCS region. The investigations were a part of the environmental studies of the south Texas outer continental shelf sponsored by the Bureau of Land Management. The physical properties of the suspended particulate system studied were the turbidity of the water and the texture of the suspended particulates. The objective was to determine the spatial and temporal variability in the distribution of suspended sediments in an effort to gain insight into the regional sediment transport system.
KEYWORDS: Texas; continental shelf; geology; sediment; sediment texture; nepheloid; STOCS;

01285

Shideler, G.L. 1979. Regional surface turbidity and hydrographic variability on the south Texas continental shelf. J. Sed. Petrol. 49(4):1195-1207

ABSTRACT: Spatial and temporal variations in the patterns of surface water turbidity and associated hydrographic conditions are investigated. These patterns are then used to analyze regional sediment transport mechanisms. Large- scale patterns indicate the extent of lateral interchange between turbid inner-shelf waters moving toward the Gulf of Mexico and nonturbid open ocean waters moving toward the shelf.
KEYWORDS: Texas; coastal waters; continental shelf; physical; nepheloid;

01286

Shideler, G.L. 1980. Reconnaissance observations of some factors influencing the turbidity structure of a restricted estuary: Corpus Christi Bay, Texas. Tex. J. Sci. 32(1): 59-71.

ABSTRACT: Measurements of light transmissivity and suspended sediment concentration in Corpus Christi Bay are used to study processes typical to a shallow-bar, coastal plain estuary. Near the bay head, turbidity is largely influenced by the wind, while tidal forces are important at the mouth of the bay. Aerial photos are presented.
KEYWORDS: Texas; estuary; Corpus Christi Bay; nepheloid; physical; wind; tide; remote sensing;

01287

Shideler, G.L. 1981. Development of the benthic nepheloid layer on the South Texas continental shelf, western Gulf of Mexico. Mar. Geol. 41:37-61.

ABSTRACT: A monitoring study of suspended sediment on the South Texas Continental Shelf indicates that a turbid benthic nepheloid layer is regionally persistent. Substantial spatial and temporal variability in nepheloid-layer characteristics is indicated. Regionally, the thickness of the shelf nepheloid layer increases both seaward and in a convergent along shelf direction. Mean concentrations of suspended particulate matter ranged from 49 multiplied by 10 super(4) to 111 multiplied by 10 super(4) particle counts/cc concentrations persistently increase shoreward throughout the region. Bottom particulate matter is predominantly composed of inorganic detritus. The variability in nepheloid-layer characteristics indicates a highly dynamic shelf feature. The relationship of nepheloid-layer characteristics to hydrographic and substrate conditions suggests a conceptual model whereby nepheloid-layer development and maintenance are the results of the resuspension of sea-floor sediment. Bottom turbulence is attributed primarily to vertical shear and shoaling progressive internal waves generated by migrating shelf-water masses, especially oceanic frontal systems, and secondarily to shoaling surface gravity waves.
KEYWORDS: Texas; continental shelf; physical; nepheloid; sediment transport;

01288

Shigaraki, Y.; Ishiwatari, R. 1981. Distribution and origin of n-alkanoic acids, n-alkanols, and n-alkanes in environmental samples. Jap. J. Limnol. 42 (2):72-81.

ABSTRACT: For 13 samples of lake (Lake Haruna), river (Tama River, Houston Ship Channel) and marine (Tokyo Bay, Galveston Bay, Gulf of Mexico) sediments, soils and activated sludges, n-alkanoic acids (C12-C36), n-alkanols (C12-C36) and n-alkanes (C15-C37) were determined. To estimate the origins of these compounds in the environmental samples, the distribution patterns of the compounds were compared with those for the presumed source organisms. The data for these compounds in organisms (algae, bacteria, zooplankton, fish, insects, fungi and higher plants) from the literature, were divided into 3 types in terms of their distribution pattern, i.e., the L/H ratio (relative ratio of lower MW compounds (.SIGMA. .ltoreq. C20) to higher MW compounds (.SIGMA. (.gtoreq. C20)) (A: 2 .ltoreq. L/H; AB: 2 > L/H > 1/2; B: 1/2 .gtoreq. L/H)). The organisms were classified into 8 groups by the combination of the L/H ratio types for n-alkanoic acids, n-alkanols and n-alkanes (I: A (for n-alkanoic acids), A (for n-alkanols), A (for n-alkanes); II: A, A, AB; III: A, A, B; IV: A, AB, B; V: A, B, B; VI: AB, B, B; VII: B, B, B; 0: others). The L/H ratios of these compounds in the organisms mostly follow the order: n-alkanoic acids > n-alkanols > n-alkanes. These compounds in the lake and marine sediments and soils apparently are mostly of terrestrial (higher plants) origin; the compounds in the Tama River sediments seem to originate from algae and/or bacteria. The compounds in the sample from the Houston Ship Channel are strongly influenced by petroleum pollution.
KEYWORDS: Texas; Galveston Bay; estuary; chemistry; hydrocarbon;

01289

Shinn, E.A.; Hudson, J.H.; Robbin, D.M.; Lee, C.K. 1980. Drilling mud plumes from offshore drilling operations: implications for coral survival, p. 471-496. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; continental shelf; oil and gas; biology; drilling fluid; environmental impact; reef; benthos; petroleum platform;

01290

Shipley, T.H.; Houston, M.H.; Buffler, R.T.; Shaub, F.J. 1979. Seismic evidence for widespread possible gas hydrate horizons on continental slopes and rises. Am. Assoc. Pet. Geol. Bull. 63(12):2204-2213.

ABSTRACT: Anomalous reflections in marine seismic reflection data from continental slopes are often correlated with the base of gas hydrated sedimentary rocks. Examination of University of Texas Marine Science Institute reflection data reveals the possible presence of such gas hydrates along the east coast of the United States, the western Gulf of Mexico, the coasts of northern Colombia and northern Panama, and along the Pacific side of Central America in areas extending from Panama to near Acapulco, Mexico. Suspected bydrates are present in water depths of 700 to 4,400 m and extend from 100 to 1,100 m subbottom. Geometric relations, reflection coefficients, reflection polarity, and pressure-temperature relations all support the identification of the anomalous reflections as the base of gas hydrated sediments. In most places, gas hydrate association is related to structural anomalies (anticlines, dipping strata), which may allow gas to concentrate and migrate updip into pressure and temperature conditions suitable for hydrate formation. The gas hydrate boundary can be used to estimate thermal gradients. In general, thermal gradients estimated from the gas hydrate phase boundary are higher than reported thermal gradients measured by conventional means.
KEYWORDS: Gulf of Mexico; continental slope; oil and gas; geology; sediment;

01291

Sikora, W.B.; Sikora, J.P. 1982. Habitat suitability index models: southern kingfish. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/10.31. 22 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; ecology; fish; fisheries; model; kingfish;

01292

Simmons, E.G.; Thomas, W.H. 1962. Annotated checklist of the phytoplankton of the eastern Mississippi Delta. Publ. Inst. Mar. Sci., Univ. Tex. 3:269-298.

ABSTRACT: Phytoplankton samples were obtained from over 100 stations in the eastern Mississippi Delta from June, 1955 through May, 1957. Measurements were also made of chlorinity, temperature, suspended solids, soluble silica, phosphate, and water transparency. Five general areas were surveyed which ranged from fresh water in the Mississippi River to sea water in the open Gulf of Mexico. The phytoplankton consisted mainly of diatoms, although a few dinoflagellates and other forms were found. Two phytoplankton associations were recognized: a river association containing species of Melosira, Cyclotella, and Navicula, and a Gulf association consisting of species of Nitzschia, Thallasiothrix, Thalassionema, Skeletonema, Chaetoceros, and Asterionella. The river population was found mainly in the river, the Gulf population in the Gulf of Mexico. Both populations were mixed in the immediate offshore areas. An annotated checklist of all phytoplankton species found in this survey is presented. The phytoplankton populations during each field season are described in relation to meteorological and hydrographic conditions. Maximum populations of phytoplankton were found from January through June in the fresher waters, and in May in the Gulf of Mexico. Minimum populations were found in the fall months. These populations were higher than have been found elsewhere in the Gulf, and more species were encountered. A few comparisons between surface samples and subsurface samples showed that nearly all of the cells were at the surface, except in the river where the water was well mixed.
KEYWORDS: Louisiana; estuary; coastal waters; biology; plankton; taxonomy; flora;

01293

Simpson, R.H.; Lawrence, M.B. 1971. Atlantic hurricane frequencies along the U.S. coastline. National Oceanic and Atmospheric Administration, Tech. Memo. NWS SR-58. 14 p.

ABSTRACT: From a recently completed climatology of hurricanes at the National Hurricane Center covering a period from 1886 to 1970, the total number of incidents and the frequency of hurricanes and tropical storms for 50-mile segments of the U.S. Gulf of Mexico and Atlantic coastlines are presented.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; physical; meteorology; hurricane;

01294

Sims, R.R., Jr.; Presley, B.J. 1976. Heavy metal concentrations in organisms from an actively dredged Texas Bay. Bull. Environ. Contam. Toxicol. 16(5):.

ABSTRACT: Organisms from San Antonio Bay have been shown to have low heavy metal concentrations. This is most likely the result of low natural metal levels in the area and minimal man-introduced contamination due to the bay's location far from any dense industrial or population centers. In addition, vigorous shell dredging activity in the bay for more than 50 years has not in any obvious way increased the concentrations of heavy metals in the organisms found there. Analyses have shown that metal concentrations in sediments from depths up to 2 meters (representing several centuries) are both low and uniform. This indicates that the sediments do not represent any unusual metal reservoir for dredging to disturb, and shows that no recent increase in metal input to the bay has occurred. In general, organisms from San Antonio Bay were lower in almost every metal than organisms from other areas where dredging and pollution are thought to be minimal. Molluscs were observed to concentrate metals more than the other organisms studied, but the levels observed are very much lower than those thought to be lethal or toxic. Except for a few large fish, metal concentrations did not correlate significantly with the size or growth stage of the individual. In the fish, certain organs, such as the liver, were found to concentrate metals, in agreement with previous reports.
KEYWORDS: Texas; estuary; San Antonio Bay; chemistry; trace metal; fish;

01295

Sizemore, R.K.; Hsu, C.; Olsen, K.D. 1981. Bacterial community composition and activity, p. 223-235. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; biology; bacteria; environmental impact; Buccaneer Field;

01296

Sizemore, R.K.; Olsen, K.D. 1980. Environmental assessment of Buccaneer Gas and Oil Field in the northwestern Gulf of Mexico, 1975-1980. Volume III. Bacteriology of a Gulf of Mexico gas and oil field. NOAA Tech. Mem. NMFS-SEFC-49. 21 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; biology; bacteria; Buccaneer Field;

01297

Sklar, F.H.; Turner, R.E. 1981. Characteristics of phytoplankton production off Barataria Bay in an area influenced by the Mississippi River. Contrib. Mar. Sci. 24:93-106.

ABSTRACT: Phytoplankton particulate production was measured in coastal waters along a transect west of the Mississippi River delta using in situ and light-box techniques. Seasonal changes in light-box surface production (0.2 - 155.0 mg C/m**3 hr), chlorophyll a (1 - 26 mg Chl a/m(3)), in situ water column production (9.5-186.0 mg C/m(2) hr), and assimilation number (0.15-42.0 mg C/mg Chl a/hr) were all correlated with river flow. Seasonal changes in the river flow volume altered the nutrient supply, water color, turbidity and salinity/temperature regimes. Changes in nutrient concentrations were indicative of nitrogen limitation. Annual particulate phytoplankton production was 290 g C/m(2).
KEYWORDS: Louisiana; Barataria Bay; estuary; biology; chlorophyll; plankton; primary production;

01298

Skud, B.E.; Wilson, W.B. 1969. Role of estuarine waters in Gulf fisheries, p. 320-326. In Transactions, 25th North American Wildlife and Natural Resources Conference.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; estuary; fisheries; ecology;

01299

Smedes, G.W.; Herbst, R.P.; Calman, J. 1981. Hydrodynamic modeling of discharges, p. 387-402. In B.S. Middleditch [ed.], Environmental Effects of Offshore Oil Production. The Buccaneer Oil and Gas Field Study. Plenum Press, New York.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; physical; model; Buccaneer Field;

01300
Smith, C.J.; de Laune, R.D. 1986. Fate of ammonium in a Gulf Coast estuarine sediment. J. Environ. Qual. 15(3):293-297.

ABSTRACT: The loss of 15N labeled NH4SO4 applied uniformly to estuarine sediment was investigated under laboratory conditions. The recovery of 15N labeled NH4-N in the NH4, NO2 + NO3, and organic N pools was determined at depth within the sediment cores. Concentrations of NH4-N generally increased with depth, with largest gradients near the surface. There was significant ammonification in underlying anaerobic sediment with a consistent increase in concentration of NH4 being observed with increasing time of incubation. Surface sediment became depleted in 15NH4 with time of incubation due to nitrification. Nitrogen-15 losses occurred in the surface layer predominately from nitrification-denitrification of the NH4. Net NH4 incorporation into the organic N fraction (immobilization) was greater in the aerobic surface sediment than in the underlying anaerobic sediment.
KEYWORDS: Louisiana; estuary; chemistry; sediment; nutrient;

01301
Smith, D.A. 1980. Sealing and nonsealing faults in Louisiana Gulf Coast salt basin. Am. Assoc. Pet. Geol. Bull. 64(2):145-172.

ABSTRACT: Fault-controlled accumulations in the hydropressured Tertiary section were studied in 10 Louisiana Gulf Coast salt basin fields located on low-relief structures. Investigations were limited to traps associated with faults which restrict vertical migration of hydrocarbons that is, where an accumulation is in contact with the fault. The fault-lithology-accumulation relations observed are (1) fault sealing, with hydrocarbon-bearing sandstone in lateral juxtaposition with shale (2) fault nonsealing to lateral migration, with parts of the same sandstone body juxtaposed within the hydrocarbon column (3) fault nonsealing to lateral migration, with sandstone bodies of different ages juxtaposed within the hydrocarbon column and (4) fault sealing, with sandstone bodies of different ages juxtaposed within the hydrocarbon column. Only faults nonsealing to lateral migration were observed where parts of the same sandstone body are juxtaposed across a fault. With sandstone bodies of different ages juxtaposed, some faults are sealing and others are nonsealing to lateral migration, but sealing faults are the most common. The fault seal apparently results from the presence of boundary fault-zone material emplaced along the fault by mechanical or chemical processes related directly or indirectly to faulting.
KEYWORDS: Louisiana; geology; chemistry; oil and gas; faulting; hydrocarbon;

01302
Smith, G.A.; Nickels, J.S.; Robbie, R.J.; Richards, N.L.; White, D.C. 1982. Effects of oil and gas well-drilling fluids on the biomass and community structure of microbiota that colonize sands in running seawater. Arch. Environ. Contam. Toxicol. 11:17-23.

ABSTRACT: None
KEYWORDS: biology; oil and gas; drilling fluid; environmental impact; ecology;

01303
Smith, N.P. 1974. Intracoastal tides of Corpus Christi Bay. Contrib. Mar. Sci. 18:206-209.

ABSTRACT: Recording tide gage data from four locations, leading into and around Corpus Christi Bay, Texas, are used to investigate the local variations in astronomical tidal constituents, and the response of the bay to variations in meteorological forces. Both diurnal and semi-diurnal tidal constituents are diminished in the bay, and the tide becomes more diurnal. Frontal passages produce significant variations in water levels around the bay, as the surface readjusts to changes in surface wind stress.
KEYWORDS: Texas; estuary; coastal waters; Corpus Christi Bay; physical; tide; meteorology;

01304
Smith, N.P. 1979. Tidal and low-frequency exchanges between the northwestern Gulf of Mexico and Texas coastal bays. EOS 60 (46):13. (Abstract only).

ABSTRACT: None
KEYWORDS: Texas; estuary; coastal waters; physical; tide;

01305

Smith, N.P. 1980. On the hydrography of shelf waters off the central Texas Gulf coast. J. Phys. Oceanogr. 10(5):806-813

ABSTRACT: Temperature and salinity data from 1976 and 1977 are used to describe low-frequency hydrographic variations in Gulf of Mexico shelf waters off the central Texas coast. Data from 23 approximately monthly cruises define the annual cycle and suggest annually recurring seasonal events. Minimum salinities occur in late spring, when values decrease to as low as 18 ppt over the inner shelf. Inner shelf salinities during the rest of the year average 31-32 ppt. Surface salinities over the outer shelf may decrease to 32-33 ppt in late spring, but deviate little from 36 ppt at other times. Both the mean salinity and the standard deviation suggest that freshwater runoff effects are restricted largely to inner and midshelf waters, within 30 km of the coast. Highest annual surface temperatures are 28-29oC across the shelf in late summer. Lowest temperatures in February range from 12 to 13oC over the inner shelf to 20 or 21oC over the outer shelf; minima appear to be highly dependent upon the severity of the winter season in a given year. Bottom temperatures are dominated by the annual cycle over the inner shelf. Near-bottom temperatures over the outer shelf vary over shorter time intervals and cannot be resolved by monthly sampling.
KEYWORDS: Texas; coastal waters; continental shelf; physical; temperature; salinity;

01306

Smith, N.P. 1980. Temporal and spatial variability in longshore motion along the Texas Gulf Coast. J. Geophys. Res. 85(C3):1531-1536.

ABSTRACT: None
KEYWORDS: Texas; coastal waters; continental shelf; physical; current;

01307

Snowden, J.O. 1972. Chemical changes in interstitial sediment water and clay mineralogy in Louisiana - Mississippi estuaries: clays and the marine environment. In Proceedings, 21st Conference Clay Mineral Soc.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi; estuary; geology; chemistry; mineralogy; sediment;

01308

Snowden, J.O.; Otvos, E.G. 1983. Chemical quality of surface and sediment pore water in Louisiana and Mississippi estuaries. Louisiana Water Resources Research Institute, Louisiana State University, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi; estuary; coastal waters; chemistry; water quality;

01309

Solangi, M.A.; Overstreet, R.M. 1982. Histopathological changes in two estuarine fishes, Menidia beryllina (Cope) and Trinectes maculatus (Bloch and Schneider), exposed to crude oil and its water-soluble fractions. J. Fish Dis. 5:13-35.

ABSTRACT: The tidewater silverside, Menidia beryllina, and the hogchoker, Trinectes maculatus, were exposed to south Louisiana whole crude oil (WCO) and its water soluble fractions (WSF) to assess histopathological effects on their gills, olfactory organ, and liver. Both fishes were exposed to 5 mg WCO/1, 100 mg WCO/1, 5% WSF, and 50% WSF. Additionally, M. beryllina was exposed to 100 mg WCO/1 with 20 ppm Terramycin to study possible complications caused by bacteria. Exposure of M. beryllina lasted 21-30 days, whereas experiments using T. maculatus continued for 38-60 days. Pathological changes in M. beryllina appeared by day 7 and became severe as experiments progressed to day 30. Histological alterations in the silverside included epithelial hyperplasia and fusion of gill lamellae, separation of respiratory epithelium from underlying tissue, hyperplasia of sustentacular cells of olfactory lamellae, necrosis of both neurosensory and sustentacular epithelium, extensive lipid vacuolation in hepatocytes, and atrophy and necrosis of intrahepatic exocrine pancreatic nodules. Of the tissues examined, the pancreas served as the most specific pathological indicator of oil pollution. In T. maculatus, hepatocytes of exposed individuals did not become vacuolated, and, except for gills exposed to 100 mg WCO/1, response by gills in the other three tests remained limited to slight hyperplasia. Olfactory mucosa of the hogchoker exhibited severe necrosis of both neurosensory and sustentacular cells in the high concentrations of oil, but no damage in low concentrations. The intrahepatic pancreas of fish exposed to all test-concentrations atrophied and became necrotic by the end of experiments. Limited studies using both Terramycin and a combination of Terramycin and WCO indicated lack of bacterial involvement in tissue damage in oil-exposed silverside, but the size of hepatic nuclei increased in the Terramycin-control fish, and the shape of lipid vacuoles appeared unusual subsequent to exposure to the combination. Menidia beryllina became hyperactive and refrained from feeding for up to 6 h after the initial administration of oil, whereas T. maculatus apparently never fed, and it exhibited hyperactivity after all exchanges of sea water and fresh oil. Deaths appeared to correspond both to degree of pathological damage and to exposure-concentrations. Partial to complete recovery was observed in gills, olfactory organ, and pancreas of M. beryllina exposed to WCO or WSF for 20 days and then maintained in oil-free sea water for 17 days.
KEYWORDS: biology; chemistry; oil and gas; fish; physiology; environmental impact;

01310

Sonnier, F.; Teerling, J.; Hoese, H.D. 1976. Observations on the offshore reef and platform fish fauna of Louisiana. Copeia 1976:105-111.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; biology; petroleum platform; reef; ecology; benthos; fish;

01311

Sonu, C.J.; Murray, S.P.; Smith, W.G. 1971. Environmental factors controlling the spread of oil. Nav. Res. Rev. 24(8):11-19.

ABSTRACT: Increasing oil spill incidents in recent years have generated considerable interest among the scientific community in the little-known mechanics of the spread of oil on water. The unpredictability of the timing of this type of incident has provided few situations in which field investigations could be readied in time for detailed in situ studies of air-sea-oil interaction. While the Coastal Studies Institute, Louisiana State University, under contract to the Office of Naval Research, is not primarily involved in studies of pollution, it is interested in the dynamics of air-sea interaction and the behavior of currents in the water column. The oil spill provided the opportunity to measure these phenomena on a large scale. In response to requests from the Coast Guard and with approval of the Geography Programs of ONR, the Institute was able to send an experienced team of investigators to the site of the Chevron oil spill in the Gulf of Mexico. The team monitored oil diffusion in response to atmospheric and hydrologic conditions present at the time. Excerpts from the team's finding are summarized here. When Chevron production platform MP41C, in the Mississippi Delta, caught fire on February 10, 1970, the stage was set for a major spill which would involve as much as 1,000 barrels a day after the fire was extinguished. The well field lay only several miles from the Breton and Delta National Wildlife refuges and about 8 nautical miles from the nearest shore. Two field studies were carried out; one between March 5 and 11 and the other between March 15 and 21. The fire was extinguished during the first field period (on March 10), and the oil spilled freely from the uncapped well during the second period. Three senior investigators, representing specialty areas of wind-driven currents, tidal hydraulics, and marsh ecology and two instrumentation engineers participated in the operations.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; marsh; biology; oil and gas; physical; current; tide; ecology; oil spill; environmental impact;

01312

Sport Fishing Institute. 1983. Economic activity associated with marine recreational fishing in 1980, prepared for the National Marine Fisheries Service. Sport Fishing Institute, Washington, DC. 171 p.

ABSTRACT: The purpose of this study was to estimate the economic activity associated with marine recreational fishing in 1980. The specific goals of the project were the following: (1) Determine the value of goods and service service purchased by recreational fishermen in association with saltwater sport fishing during 1980; (2) Determine the value added, employment, wages and salaries, and capital expenditures associated with purchases by marine recreational fishermen in 1980; (3) Determine the number of establishments in the individual economic sectors serving marine recreational fishermen; (4) Project the multiplier effects of expenditures for saltwater sport fishing as determined using input-output analysis; (5) Document the distribution of the national economic impacts associated with saltwater sport fishing for the various coastal states under the jurisdictions of the regional Fishery Management Councils. This report follows a similar 1977 study by Centaur Associates where the economic activity associated with marine recreational fishing in 1972 and 1975 was estimated.
KEYWORDS: United States; recreation; socioeconomics; fisheries; fishery statistics;

01313

Sport Fishing Institute. 1984. The marine recreational fishing industry and opportunities for development. Final report phase II. Sport Fishing Institute, Washington DC. 83 p.

ABSTRACT: None
KEYWORDS: United States; fisheries; recreation; socioeconomics;

01314

St. Amant, L.S. 1971. Impact of oil on the Gulf Coast, p. 206. In Trans. 36th North American Wildlife and Natural Resources Conference.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; coastal waters; oil and gas; environmental impact;

01315

Stallworth, G.R.; Jordan, H.F. 1980. Analyses of water and dredged material from selected southern Louisiana waterways and selected areas in the Gulf of Mexico, 1976-78. U.S. Geological Survey, Open-File Rep. 80-694.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; coastal waters; chemistry; geology; sediment; dredging;

01316

Standard, G.W.; Chittenden, M.E., Jr. 1984. Reproduction, movements, and population dynamics of the banded drum Larimus fasciatus in the Gulf of Mexico. U.S. Natl. Mar. Fish. Serv. Fish. Bull. 82(2):337-364.

ABSTRACT: Collections of banded drum L. fasciatus were made from 5-100 m in the Gulf of Mexico along a cross-shelf transect off Texas [USA] during the period Oct. 1977 to Aug.1981. L. fasciatus mature at 80-130 mm as they approach age I. Spawning occurs during 2 discrete periods, a major fall period (Sept.-Nov.) and a very minor spring period (April-June), coincident with downcoast along shore currents (toward Mexico) and onshore surface Ekman transport. Fish first spawning at 12-14 mo. old produce the predominant fall-spawned groups. Fall-spawned fish spawning at 19-21 mo. old produce the minor spring-spawned groups, so that temporal reproductive isolation does not exist between spring and fall cohorts. L. fasciatus in the northwestern Gulf range from < 5 to 55 m but are most abundant at 5-16 m. Adults occupy the 13-24 m bathymetric range, while the young recruit in waters of < 5-16 m when 2-4 mo. old. Larger, older, spawning or postspawning individuals may undergo more or less permanent emigration from the northwestern Gulf to the north central area as they approach age I. Apparent mean sizes of fall-spawned fish were 130-150 mm at age I and 155-180 mm at or approaching age II. Von Bertalanffy parameters for fall-spawned fish were 201 and 176 mm for Lx and 1.15 and 1.34 for K (annual), respectively. Maximum size is about 180 mm in the northwestern Gulf, but more typically only 160-165 mm. Typical maximum life span (tL) in the northwestern Gulf is only 1-2 yr but may be 2-3 yr if the stock ranges in both the northwestern and north central Gulf. Apparent mean time-specific and cohort-specific total annual mortality rates are 92-100% in the northwestern Gulf but true values probably are 80-90% for a stock that ranges in both the northwestern and north central Gulf. Fecundity, weight, girth and length relationships are presented.
KEYWORDS: Texas; continental shelf; biology; ecology; fish; fisheries;

01317
Stanley, J.G.; Sellers, M.A. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates, Gulf of Mexico. American oyster. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.64). 25 p.

ABSTRACT: None
KEYWORDS: estuary; coastal waters; benthos; oyster; physiology; ecology;

01318
Steele, J.H. 1964. A study of production in the Gulf of Mexico. J. Mar. Res. 22:211-222.

ABSTRACT: Theoretical reasons are given to show that midwater chlorophyll maxima may be due to an increase in the chlorophyll content of the plants rather than to an accumulation of plants due to sinking. Data from the Gulf of Mexico are used to support this hypothesis.
KEYWORDS: Gulf of Mexico; biology; primary production; chlorophyll;

01319
Stern, M.K.; Day, J.W., Jr.; Teague, K.G. 1985. Seasonality of materials transport through a coastal freshwater marsh: riverine versus tidal forcing. Estuaries 8:57A. (Abstract only.).

ABSTRACT: Transport of organic C, N, and P, inorganic N and P and suspended sediment was measured seasonally in a small freshwater bayou in Louisiana. The site is influenced by tides which originate in the Gulf of Mexico, propagate through Atchafalaya Bay and into the adjacent marshes where the bayou is located. The bayou is also subject to backwater flooding from the Atchafalaya River. Materials transport into the bay is caused by ebbing tides and backwater flooding.
KEYWORDS: Louisiana; estuary; marsh; chemistry; organic carbon; sediment; nutrient;

01320
Stevens, N.P.; Bray, E.E.; Evans, E.D. 1956. Hydrocarbons in sediments of Gulf of Mexico. Am. Assoc. Petrol. Geol. Bull. 40:975-983.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; chemistry; sediment; hydrocarbon;

01321
Stickel, L.F.; Dieter, M.P. 1979. Ecological and physiological/toxicological effects of petroleum on aquatic birds -- a summary of research activities FY76 through FY78. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-79/23. 14 p.

ABSTRACT: None
KEYWORDS: biology; oil and gas; bird; oil spill; physiology; environmental impact;

01322
Stickney, R.R.; Cuenco, M.L. 1982. Habitat suitability index models: juvenile spot. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/10.20. 12 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; ecology; fish; fisheries; model; spot;

01323

Stone, J.H. 1972. Preliminary assessments of the environmental impact of a superport in the southeastern coastal area of Louisiana--Louisiana superport studies. Rep. 2. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-SG-72-05. 345 p.

ABSTRACT: Two offshore sites for a proposed Superport, off southeastern Louisiana, are evaluated for potential environmental impact on the coastal region. The most vulnerable areas along the coast are the estuaries. Oil drift projections indicate that the site more distant from shore would have less effect because a potential spill there would probably not reach the estuarine areas. Oil drift projections of hypothetical oil spills are based on a hydrodynamical numerical model using wind conditions, local tides, and bathymetry. At the closest site oil spills moved either northwest toward Timbalier Bay or northeast toward Barataria Bay. Oil spills at the farther site did not impinge on the shorelines nor into the estuaries. Oil spills at both sites usually assumed an east-west orientation and moved somewhat faster than drift projections based solely on winds. Potential adverse effects resulting from an oil spill would be most severe in the estuaries. Oil could damage or kill extensive areas of marsh grass, thereby reducing or eliminating the most important food source for the major consumers, which are fishery species.This damage could be by direct contact with the top of the plants, the root system, or the microbes which initiate the breakdown of grass into detritus. Regardless of the final location of the superport, research should be initiated on the detailed hydrography and meteorology of the proposed site, the toxic effects of various crude oils on planktonic stages of fishery species, and the effects of oil on marsh grasses and microbes.
KEYWORDS: Louisiana; marsh; coastal waters; continental shelf; biology; geology; physical; oil and gas; oil spill; environmental impact; model; shipping;

01324

Stone, J.H. 1976. Environmental factors relating to Louisiana menhaden harvest. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. LSU-T-76-004.

ABSTRACT: The relationship between selected environmental factors of coastal Louisiana to Louisiana menhaden harvest and effort was studied by analyzing the factors separately, by factor analysis, by multiple regression, and by cross correlations. The environmental factors were air temperatures, water temperatures, rainfall data, tide data, and wind speeds and directions applicable to coastal Louisiana from 1950 through 1971; these data were reduced to weekly and monthly statistics. The menhaden catch and effort data were for the Louisiana harvest during 1950 through 1971 expressed as weekly and monthly totals. Only tide range data showed significant changes during the last 20 years, namely an increase of mean tide range, which is probably related to the rise in sea level noted by other Louisiana researchers. Factor analysis and multiple regressions both indicate that the same general type of data have a significant relationship to menhaden harvest, namely effort, time effects, water or air temperature, and some interactions among them. Significant relationships still exist between menhaden catch and selected environmental data when the effects of effort and time are removed; however, time effects are probably masking important environmental effects. A variety of variables can be used to produce a significant predictive relationship; examples are effort; minimum air temperature interacting with month, both not lagged and lagged for 12 months; wind direction at New Orleans interacting with month; wind direction at Baton Rouge interacting with minimum air temperature and lagged for 12 months; wind direction at New Orleans; mean air temperature; and maximum water temperature. The resulting coefficient of determination (r2) is 86 percent and is significant at $p<0.0001$. The harvest data were fitted to a sine curve adding the significant environmental variables, and the coefficient of determination (r2) is 89 percent.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; fisheries; fishery statistics; fish; menhaden; ecology;

01325

Stone, J.H.; Robbins, J.M.; Johnson, D.J.; Hope, R.M.; Gosselink, J.G.; Loesch, H.; Day, J.W., Jr. 1973. Recommendations for the environmental protection plan--Louisiana superport studies. Rep. No. 3. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: Data and recommendations are provided for design of the Environmental Protection Plan required by state law to be promulgated by the Louisiana Deep Draft Harbor and Terminal Authority, i.e., the Louisiana Superport Authority. The major environmental stresses that may result from superport development are (1) oil or other material spills, (2) construction and operational damages, and (3) ancillary development. We strongly believe that though ancillary development promises many economic benefits it also poses the greatest environmental problem, i.e., what is optimum proportion or ratio of economic growth and development to natural ecosystems or conservation. Regional planning based on preliminary estimates of this ratio, must begin now or the gradual environmental deterioration of coastal Louisiana will be a high probability.
KEYWORDS: Louisiana; coastal waters; continental shelf; biology; physical; socioeconomics; environmental impact; shipping; oil spill;

01326

Stow, D.A.V.; Cremer, M.; Droz, L.; Meyer, A.W.; Normark, W.R.; O'Connell, S.B.; Pickering, K.T.; Stelting, C.E.; Angell, S.A.; Chaplin, C. 1986. Facies, composition, and texture of Mississippi Fan sediments, Deep Sea Drilling Project Leg 96, Gulf of Mexico, p. 475-487. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; sediment; sediment texture; Deep Sea Drilling Project;

01327

Suess, E.; Fanning, A.K.; Manheim, F.T. [ed.]. 1982. Authigenic barite in varved clays: Result of marine transgression over freshwater deposits and associated changes in interstitial water chemistry, p. 339-355. In The dynamic environment of the ocean floor. Lexington Books, Lexington, MA.

ABSTRACT: None
KEYWORDS: geology; chemistry; mineralogy; sediment;

01328

Suhayda, J.N.; Coleman, J.M.; Whelan, T.; Garrison, L.E. 1982. Oscillation of continental shelf sediments caused by waves, p. 57-76. In A.K. Fanning and F.T. Manheim [ed.], The dynamic environment of the ocean floor. Lexington Books, Lexington, MA.

ABSTRACT: Measurements have been made of the oscillations of bottom sediments on the continental shelf induced by the passage of surface waves. A wave staff and pressure sensor were placed 45 m from a bottom-emplaced accelerometer in East Bay, Louisiana. Measurements were made in 20 m of water in an area where bottom sediments were composed of clay and silts. A sediment core was taken to a depth of 40 m. The results of the experiments indicate that these fine-grained bottom sediments move in a wave-like fashion under surface-wave action. Bottom oscillations on the order of 2 to 3 cm occurred under waves having a height of 1 m and a period of 5 seconds. The bottom motion appears to be an elastic-like response to wave pressure. Estimates of the amount of wave energy lost in forcing the mud wave indicate that the interaction can significantly affect surface-wave characteristics and the stability of bottom sediments.
KEYWORDS: Louisiana; continental shelf; geology; physical; sediment; wave; sediment transport;

01329

Suhayda, J.N.; Prior, D.B. 1978. Explanation of submarine landslide morphology by stability analysis and rheological models. In Proceedings, 10th Annual Offshore Technology Conference, May 8-11, 1978, Houston, TX. 8 p.

ABSTRACT: A theoretical study of mass movement on the Mississippi River Delta front has been made using recently acquired field data and a simple rheological model. Recent measurements of sediment properties include cohesion, bulk density, pore pressure, and internal friction angle. Also, the geometry of a typical type of instability feature, and elongate slide, is examined in detail. A rheological model describing a Coulomb-viscous plastic in effective stress terms in proposed to describe certain features of the mass movement process. The model is used to derive equations defining the initial failure of the slopes, the mass movement thickness and accelerations, the velocity of flow in the gullies, and the shape of the mud nose scarp in the toe area. The model indicates the importance of pore pressure in controlling sediment dynamics. Results of the model compare favorably with the observed shapes of mud noses. Initial failures on low slopes (~0.5o) are attributed to pore pressures approaching geostatic values. Flow velocities are calculated to be several feet per second, based upon estimated sediment viscosities and pore pressures during flow.
KEYWORDS: Louisiana; Mississippi River Delta; continental shelf; continental slope; geology; model; sediment transport; hazard; submarine landslide;

01330
Suhayda, J.N.; Whelan, T.; Coleman, J.M.; Booth, J.S.; Garrison, L.E. 1976. Marine sediment instability: interaction of hydrodynamic forces and bottom sediments, p. 29-40. In Proceedings, 8th Annual Offshore Technology Conference, May 3-6, 1976, Houston, TX. Paper No. OTC-2426.

ABSTRACT: Simultaneous measurements of bottom oscillations and wave characteristics have been made in a study of the interaction of fine-grained sediments and surface waves. Wave staffs, pressure sensors, and an electromagnetic current meter were placed 150 ft from a bottom-emplaced accelerometer package at East Bay, Louisiana. Measurements were made in about 64 ft of water from an oil platform in an area having a fine-grained clay bottom. Sediment core samples were taken to a depth of 180 ft. The accelerometer package consisted of three solid-state accelerometers mounted at right angles, and had a response of 3 v/g. The package was placed about 1 ft below the mudline. The results of the experiments indicate that bottom motions under wave action show well- defined periodic features. Bottom oscillations on the order of 1 in. in amplitude occurred for seas having a significant wave height of about 3 ft and period of 5 sec. The bottom appears to be undergoing an elastic wave response to bottom pressures, so that the bottom is depressed under a surface wave crest. Comparison of wave height measurements and pressure measurements indicate that bottom pressures are not predicted by linear theory for a rigid bottom. Pressures were larger than predicted by up to 35% in many cases.
KEYWORDS: Louisiana; Mississippi River Delta; estuary; geology; physical; wave; hazard;

01331
Sullivan, L.F.; Emiliani, D.A.; Neal Baxter, K. 1985. Standing stock of juvenile brown shrimp, Penaeus aztecus in Texas coastal ponds. Fish. Bull. 83 (4):677-681.

ABSTRACT: The increased demand for timely information concerning management of shrimp stocks has renewed interest in developing reliable methods of predicting brown shrimp, P. aztecus, crop size for the offshore Gulf of Mexico fishery. Advance information regarding shrimp abundance would also enable elements of the shrimp industry to prepare for a potentially good or poor harvest. Studies exploring the feasibility of predicting the annual abundance of brown shrimp off the Texas coast, initiated in 1960 (Baxter 1963), are based on the premise that post-larval and juvenile shrimp abundances are proportionally related to the subsequent commercial harvest (Berry and Baxter 1969). To examine the relationship between juvenile brown shrimp standing stock and offshore harvest, and to determine the suitability of juvenile brown shrimp abundance as a predictor, the authors conducted a mark-recapture study in Galveston Bay, Texas, during the first week of June 1983. In this report they summarize the results of the study, compare estimates obtained by mark recapture and an alternative drop sampler method, and discuss previously unreported results of 1970-71 studies (Welker and Baxter).
KEYWORDS: Texas; Galveston Bay; estuary; biology; shrimp; fisheries;

01332
Suter, J.R.; Berryhill, H.L., Jr. 1985. Late Quaternary shelf-margin deltas, Northwest Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 69 (1):77-91.

ABSTRACT: Interpretations of 35,000 km (21,900 mi) of single-channel, high-resolution, seismic profiles traversing the continental shelf and upper continental slope of the Northwest Gulf of Mexico indicate the existence of five late Wisconsinoan shelf margin deltas, including the Rio Grande and Mississippi deltas. The deltas were recognized by geomorphic pattern, high-angle clinoform seismic reflections, and association with buried river systems. Isopach patterns show that the deltas range in size up to 5,000 km(2) (1,900 mi(2)) and reach thicknesses of over 180 m (590 ft). The Late Quaternary shelf-margin deltas provide models for analogous deposits in the ancient record. They are primary indicators of the position of ancient shelf margins, and are important for predicting sand occurrence in that environment as well as farther downslope.
KEYWORDS: Texas; Louisiana; continental shelf; continental slope; geology; geologic history;

01333
Sutherland, D.F.; Fable, W.A. 1980. Results of a king mackerel (Scomberomorus cavalla) and Atlantic spanish mackerel (Scomberomorus maculatus) migration study. National Marine Fisheries Service, Panama City, FL. NOAA-TM-NMFS-SEFC-12. 27 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; biology; fisheries; ecology; fish; mackerel;

01334

Sutter, F.C.; McIlwain, T.D. 1987. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico). Sand seatrout and silver seatrout. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.72). 16 p.

ABSTRACT: Species profiles are literature summaries of the taxonomy, morphology, range, life history, and environmental requirements of coastal aquatic species. They are designed to assist in environmental impact assessment. Sand seatrout are one of the most abundant fishes in the estuarine and nearshore areas of the Gulf of Mexico. Although silver seatrout are also abundant, little research has been conducted for this species. Sand seatrout spawn in lower estuarine environments or in nearshore Gulf waters with two spawning peaks: one in spring, and another in late summer. Silver seatrout follow a similar reproductive pattern. Sand seatrout are common in bays, sounds, and shallow offshore Gulf waters, whereas silver seatrout are more abundant in deeper waters. Both seatrout are important components in the industrial bottom fisheries; sand seatrout are also a valuable recreational species. Small sand and silver seatrout commonly eat shrimp and other crustaceans, whereas larger fish shift to a more piscivorous diet. Small sand seatrout are usually found in waters with temperatures greater than 15 degrees C and salinity values less than 15 ppt, whereas larger fish are found over a wider temperature range (5 to 30 degrees C) and in salinities greater than 15 ppt. Silver seatrout generally prefer waters with salinities greater than 25 ppt and temperatures ranging from 5 to 30 degrees C.
KEYWORDS: Gulf of Mexico; estuary; coastal waters; biology; ecology; fish; seatrout;

01335

Sutter, F.C.; McIlwain, T.D. 1987. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico). Pigfish. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.71). 11 p.

ABSTRACT: Species profiles are literature summaries of the taxonomy, morphology, range, life history, and environmental requirements of coastal aquatic species. They are designed to assist in environmental impact assessment. Pigfish are common inhabitants of warm Gulf waters. Pigfish spawn during late winter and spring in open Gulf waters. Young fish first appear in nearshore or estuarine environments in April to June. Juvenile pigfish may school with other species of fish (e.g., pinfish). Adult pigfish are found in higher salinity, coastal areas; they are also found in offshore, open shelf waters, as well as offshore reefs and platforms. Recreational fishermen frequently catch pigfish, especially in Florida Gulf waters. Pigfish have little economic value; however, they are used for live bait and are considered to be a good quality food fish. Young pigfish are planktivorous, becoming carnivorous as they grow in length (feeding first on polychaetes, then shrimps). Pigfish have been taken in water temperatures ranging from 13.7 to 36 degrees Centigrade, and in salinities of 0 to 38 ppt; however, they have been found in warmer water with salinities greater than about 15 ppt. Pigfish are found over vegetated sandy substrates, muddy bottoms, or hard substrates, such as reefs, jetties, and offshore platforms. Pigfish are prey of spotted seatrout and weakfish.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; biology; ecology; fish; pigfish;

01336

Sutter, F.C.; Waller, R.S.; McIlwain, T.D. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico) - Black Drum. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.51). 22 p.

ABSTRACT: Literature summaries of the taxonomy, morphology, range, life history and environmental requirements of coastal aquatic species are given in the report. They are designed to assist in environmental impact assessment. Black drum are primarily an estuarine species and the time of black drum spawning depends on location. Larvae are transported into the estuarine environment where they grow to the juvenile stage, living in shallow, muddy waters, tolerating a wide range of environmental conditions. Black drum are commercially harvested by a variety of gears, with the majority of U.S. landings taken in Gulf waters off Texas.
KEYWORDS: Gulf of Mexico; biology; ecology; fish; fisheries; drum;

01337

Swanson, R.L.; Thurlow, C.J. 1973. Recent subsidence rates along the Texas and Louisiana coasts as determined from tide measurements. J. Geophys. Res. 78:2665-2671.

ABSTRACT: None
KEYWORDS: Texas; Louisiana; geology; physical; sea level; tide;

01338

Sweet, W.E.; Reed, J.C.; Leyendecker, C.L.; Khan, A.S. 1986. Correlation of Cenozoic sediments, Gulf of Mexico, outer continental-shelf - Galveston area, offshore Texas, to Vermilion area, offshore Louisiana. Am. Assoc. Pet. Geol. Bull. 70(5):654. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Texas; continental shelf; geology; sediment;

01339

Swift, D.J.P.; Duane, D.B.; Pilkey, O.H. [ed.]. 1972. Shelf sediment transport. Dowden, Hutchinson and Ross, Stroudsburg, PA.

ABSTRACT: None
KEYWORDS: continental shelf; geology; physical; sediment transport;

01340

Swift, D.J.P.; Stanley, D.J.; Curray, J.R. 1971. Relict sediments on continental shelves: a reconsideration. J. Geol. 79:322-346.

ABSTRACT: Relict sediments on shelves, originally defined as "remnant from different earlier environment," are recognized by petrographic criteria (grain size, iron staining, etc.), fauna, and topography. Recent studies have revealed a second set of attributes which indicate that these deposits, although originating in an earlier environment, are dynamic systems which are undergoing modification in response to their present environment, especially the hydraulic regime, and are approaching a state of equilibrium with this environment. The modification may be simulated by means of a stochastic process model. A spectrum of modern shelf regimes and the resulting deposits is considered. The high-energy, tide-dominated shelf seas of western Europe have extensively reworked their Pleistocene and Holocene transgressive substrates, producing a constructional topography and regional textural gradients. Similar topography and textural gradients are reported from the tide-swept shoals and banks off northeastern North America and from farther south in the Middle Atlantic Bight, a wave-dominated shelf. Reworking in lower-energy environments such as the Gulf of Mexico may result only in textural mixing of the products of deposition of different periods of time and different sources. The reworked portions of relict sediments are thus a facies in transition, physically induced analogues of the chemically induced soil profiles of subaerial surfaces. While "relict sediment" is a valuable genetic name for the unreworked sediment type, "palimpsest sediment" is a convenient operational descriptive term the reworked parts. A palimpsest sediment is one which exhibit petrographic attributes of an earlier depositional environment and, in addition, petrographic attributes of a later environment. All intermediate stages are possible from pure relict, through palimpsest sediments, to "modern" autochthonous sediments in which all of the earlier petrographic and physiographic attributes have been changed.
KEYWORDS: Atlantic Ocean; Gulf of Mexico; continental shelf; geology; sediment; geologic history;

01341

Tagatz, M.E.; Ivey, J.M.; Lehman, H.K.; Tobia, M. 1980. Effects of drilling mud on development of experimental estuarine macrobenthic communities, p. 847-865. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: oil and gas; biology; ecology; benthos; drilling fluid; environmental impact;

01342

Tanis, F.J. 1980. Measurement of sea surface upwelling radiance in the Gulf of Mexico using the NIMBUS-G coastal zone color scanner, p. 1859-1864. In Proceedings, 14th International Symposium on Remote Sensing of Environment, San Jose, Costa Rica, April 23-30, 1980. Environ. Res. Inst. of Michigan, Ann Arbor. Vol. 3.

ABSTRACT: Data taken from the Nimbus-7 coastal zone color scanner (CZCS) over the Gulf of Mexico were used to investigate atmospheric transmission characteristics and to estimate the upwelling radiance at the sea surface. Atmospheric correction algorithms presently being developed by NOAA are not applicable to turbid coastal water. The possible extension of this algorithm to the turbid waters of the Mississippi River Delta was investigated. Multispectral scanner data from aircraft underflights together with available ship measurements were used to evaluate the turbid ocean algorithm. Comparisons were made between the aircraft scanner data corrected to the sea surface and corresponding CZCS data as corrected by the extension algorithm. The high-resolution aircraft scanner data were suitable for investigating the spatial averaging process within the 825-m CZCS IFOV. Results help define some limitations of CZCS in viewing coastal features.
KEYWORDS: Louisiana; Mississippi River; physical; remote sensing;

01343

Tanner, W.R. 1976. Oil prospects in the Gulf of Mexico region. Trans. Gulf Coast Assoc. Geol. Soc. 26:345-348.

ABSTRACT: Assessment of the relative merits of poorly explored regions can be made on the basis of a structural-sedimentological analysis of information from as few wells as one per region. The pertinent variables are (1) mean grain size, (2) sorting or clay content, (3) organic matter, and (4) rate of burial. This information is readily available from cores or samples, and reasonably good estimates can be made from modern log suites. For a "Most Attractive" rating, the possible reservoir beds in a well to be studied should have the mean size in the sand category, and sorting should be good-to-excellent (very little clay or fine silt); associated rocks should have a relatively high content of organic matter; and the indicated burial rate should be high. A less satisfactory assessment, using these same concepts, can be made on the basis of general geological knowledge without well data. Under these circumstances, the required sedimentological information can be estimated on the basis of regional geological knowledge. These techniques do not apply in dominantly carbonate or evaporite sections and hence cannot be used in the Florida and Yucatan areas. For the rest of the coastal plain and continental shelf of the Gulf of Mexico region, application of the four basic ideas indicates that the most attractive targets are in the states of Louisiana and Tabasco (and immediately adjacent areas), and that lesser production can be expected as one moves along the coast away from these prime targets. Hence North Tamaulipas, South Texas, and the Florida Panhandle should be less attractive targets, although nothing in the model indicates that they are barren. Quick burial is commonly (but not invariably) associated with large river deltas. The deltas of the Grijalva-Usumacinta and Mississippi rivers meet this requirement. The delta of the Rio Grande, on the other hand, is not as attractive even though burial rates may have been high: the sedimentological data are not as encouraging as in Louisiana and Tabasco.
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; geology; oil and gas; sediment;

01344

Taylor, D.D.; Bright, T.J. 1973. The distribution of heavy metals in reef-dwelling groupers in the Gulf of Mexico and Bahama Islands. Texas A&M Univ. Sea Grant Pub. No. TAMU-SG-73-208. 249 p.

ABSTRACT: None
KEYWORDS: Texas; Mexico; Florida; reef; continental shelf; Flower Garden Banks; chemistry; fish; grouper;

01345

Taylor, T.G. 1980. A bio-econometric analysis of the Gulf of Mexico commercial reef fish fishery. Ph.D. dissertation. The University of Florida, Gainesville, FL. 190 p. (Diss. Abs. 42/02-A:794).

ABSTRACT: Commercial reef fish landings (primarily grouper and red snapper) from the Gulf of Mexico have declined fairly consistently since the mid-sixties while the number of reef fish vessels has increased in all coastal states except Louisiana. Declining catch per unit of effort has caused concern in the industry. The main objective of this dissertation was to construct an aggregate econometric model of the commercial sector of the Gulf of Mexico Reef Fish Fishery and estimate maximum economic yield. The basic theoretical model developed was a multi-sector model with variable production prices and pecuniary externalities. Each state participating in the fishery constituted a single sector. An alternative methodology for obtaining equilibrium catch functions was developed and utilized. Stochastic processes were identified and incorporated into the residual components of the estimated catch equations to account for the unobservable resource stock effects. Derived equilibrium catch functions were obtained by taking the limit of the catch equations over time, with fishing effort held constant. A nonlinear optimization model for the Gulf of Mexico Reef Fish Fishery was constructed through incorporation of the derived equilibrium catch functions with a system of estimated price and cost equations. Maximum economic yield of reef fish was estimated to be 11.5 million pounds. The economically efficient number of nominal vessels corresponding to this level of catch was estimated to be 180. This result was conditioned by exogenously fixed average fishing power per vessel at 1975 reported levels. Fishing power was systematically changed to determine the effects of such changes on maximum economic yield and the corresponding optimum number of vessels. The results of the analysis implied that the reef fish fishery in 1975 was overfished biologically and economically. To support this implication, a Schaefer type sustainable yield function was estimated for the domestic Gulf of Mexico Reef Fish Fishery. Maximum sustainable yield was estimated to be 13.7 million pounds which is consistent with the implication of overfishing.
KEYWORDS: Gulf of Mexico; reef; fisheries; socioeconomics; model; snapper; grouper;

01346

Taylor, W.R. 1953. Sketch of the character of the marine algal vegetation of the shores of the Gulf of Mexico. Fish. Bull. 89:177-192.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; flora; taxonomy;

01347

Teal, J.M.; Howarth, R.W. 1984. Oil spill studies: a review of ecological effects. Environ. Mgmt. 8(1):27-44.

ABSTRACT: We reviewed seven particularly well known and/or studied oil spills that have occurred since the National Academy of Sciences 1975 report, "Petroleum in the Marine Environment" or that occurred prior to that report but about which significant new information has since been acquired. The spills studied were from the barge Florida, and tankers Arrow, Argo Merchant, Amoco Cadiz, and Tsesis and blowouts from the Bravo and Ixtoc I platforms. These "best" studies yield only limited insight into effects because they lack controls and have a high degree of natural variability. The Tsesis, Florida, and Amoco Cadiz cases are exceptional since they occurred in areas of ongoing research programs and had nearby areas suitable for controls. Oil spills have produced measurable effects on ecosystems that have not been readily predictable from laboratory studies on isolated organisms. However, ecosystem level interactions are poorly understood even without the complications resulting from effects of pollution. These generalizations emerge: oil regularly reaches sediments after a spill; oil in anoxic sediments is persistent; oil regularly contaminates zooplankton and benthic invertebrates; fish are also contaminated, but to a lesser extent; oil contamination decreases the abundance and diversity of benthic communities.
KEYWORDS: oil and gas; biology; oil spill; environmental impact;

01348

Temple, R.F.; Fischer, C.C. 1965. Distribution and abundance of shrimp larvae, p. 14-17. In U.S. Fish and Wildlife Service, Bureau of Commercial Fisheries, Fisheries Research Biology Laboratory, Galveston, TX. Circ. No. 230.

ABSTRACT: Plankton samples were collected monthly at stations on the continental shelf of the Gulf of Mexico. Collection of 385 samples resulted in the identification of 27,800 penaeids. These samples provided information on seasonal and areal distribution and abundance of planktonic stage penaeids.
KEYWORDS: Gulf of Mexico; continental shelf; biology; plankton; shrimp;

01349

Temple, R.F.; Fischer, C.C. 1967. Seasonal distribution and relative abundance of planktonic-stage shrimp (Penaeus spp.) in the northwestern Gulf of Mexico, 1961. U.S. Fish and Wildlife Service, Fish. Bull. 66:323-334.

ABSTRACT: Planktonic stages of shrimp (Penaeus spp.) were sampled systematically in the Gulf of Mexico near Galveston, Texas during January through December 1961. The Gulf-V plankton net was used for sampling every three weeks at stations in water depths of 14, 27, 46, and 82 m. Trends in seasonal abundance of larvae varied with depth. At all depths, trends in larval abundance increased as bottom water temperatures decreased. Postlarvae were taken in plankton tows during January to April, but were most abundant during August to December. The results of this study and laboratory experiments on larval development and postlarval growth as a function of temperature support the premise that brown shrimp larvae or postlarvae (or both) overwinter in waters of the continental shelf.
KEYWORDS: Texas; coastal waters; continental shelf; biology; plankton; shrimp;

01350

Temple, R.F.; Harrington, D.L.; Fischer, C.C. 1964. Larval distribution and abundance, p. 18-24. In U.S. Fish and Wildlife Service, Bureau of Commercial Fisheries, Fisheries Research Biology Laboratory, Galveston, TX. Circ. No. 183.

ABSTRACT: Plankton samples were collected monthly at 60 stations in the Gulf of Mexico between the Mississippi River Delta and Brownsville, Texas. Penaeus spp. made up 13 percent of the total catch. Between January and March 1962, the catch of Penaeus spp. consisted of 90 percent postlarval shrimp. During the period of April-June 1962, an increase of nauplii and protozoea occurred. This increase was indicative of an increase in spawning intensity during the time interval.
KEYWORDS: Louisiana; Texas; coastal waters; biology; shrimp; plankton;

01351

Temple, R.F.; Harrington. D.L.; Martin, J.A. 1977. Monthly temperature and salinity measurements of continental shelf waters of the northwestern Gulf of Mexico, 1963-1965. NOAA Tech. Rep. NMFS SSRF-707. 26 p.

ABSTRACT: Monthly temperature and salinity data were collected at 8 transects totalling 40 stations west of the Mississippi River to the Texas Mexico border from January 1963 to December 1965. In addition, 10 stations on 2 transects were occupied bimonthly in 1963 east of the Mississippi River.
KEYWORDS: Louisiana; Texas; continental shelf; chemistry; physical; salinity; temperature;

01352
Temple, R.F.; Martin, J.A. 1985. Surface circulation in the northwestern Gulf of Mexico as deduced from drift bottles. NOAA Tech. Rep.

ABSTRACT: Over 7900 drift bottles have been released in the northwest Gulf of Mexico out to the 100 fathom line in an effort to describe the surface circulation patterns of this area. A total of 523 bottles have been returned within 15 days and 430 returned between 16 30 days after release. Additional bottles have been returned after 30 days.
KEYWORDS: Texas; Louisiana; coastal waters; continental shelf; physical; current; wind;

01353
Templet, P. 1974. The shell dredging industry: its impact on Louisiana. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. 30 p.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; biology; socioeconomics; dredging; environmental impact;

01354
Templeton, J.S., III; Murff, J.D.; Goodwin, R.H.; Klejbuk, L.W. 1985. Evaluating soils and hazards in the Mississippi Canyon. 17. Annual Offshore Technology Conference Houston, TX (USA) 6-9 May 1985, p. 63-72. In Proceedings, 17th Annual Offshore Technology Conference, vol. 3. Paper No. OTC 4964.

ABSTRACT: During the period 1979-1984 a comprehensive program was conducted to study the surface and near surface seafloor conditions in the Gulf of Mexico's Mississippi Canyon. Included were a high resolution geophysical survey, a deep soil boring, studies of ongoing consolidation settlement and downslope creep and a long-term program of acoustic position measurements to detect seafloor movements. This paper presents an overview of the entire program, which indicated the feasibility of placing petroleum development structures and systems within a certain region of the canyon seafloor.
KEYWORDS: Louisiana; Mississippi Canyon; continental slope; geology; hazard;

01355
TerEco Corporation. 1972. A report on the hydrobiological zones of the western Gulf of Mexico. Rep. to Arthur D. Little, Inc., Cambridge, MA. 165 p.

ABSTRACT: The report presents information concerning the estuarine and nearshore environments of Texas and Louisiana, and the oceanic zones of the western Gulf of Mexico. Topics include biology, geology, hydrology, and chemistry.
KEYWORDS: Texas; Louisiana; estuary; coastal waters; continental shelf; biology; geology; chemistry; physical;

01356
Terzaghi, K. 1956. Varieties of submarine slope failures, p. 1-41. In Proceedings, 8th Texas Oil Mechanics and Engineering Conference.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; continental slope; Mississippi River Delta; geology; hazard; submarine landslide;

01357
Tettey, E.; Pardy, C.; Griffin, W.L.; Swartz, A.N. 1984. Implications of investing under different economic conditions on the profitability of Gulf of Mexico shrimp vessels operating out of Texas. Fish. Bull. 82(2):365-373.

ABSTRACT: Due to the inflationary trend in recent years coupled with fluctuating shrimp prices, the shrimp business has become a highly uncertain undertaking. The financial performance of a sample of the Gulf of Mexico shrimping fleet, operating out of the Texas coast, was examined over a 10-year period (1971-80). The results indicate that investments made in the early part of the 1970's performed better than those made in the latter part.
KEYWORDS: Texas; estuary; coastal waters; fisheries; shrimp; socioeconomics;

01358
Texas A&M University. 1959. Hydrological studies for the Corps of Engineers' proposed Mississippi River-Gulf Outlet Project, Louisiana. Rep. 1. Texas A&M University, Department of Oceanography and Meteorology. Project 210, Reference 59-21T. 24 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Mississippi River; physical; current; environmental impact;

01359

Texas A&M University. 1959. Planning of hydrological studies for the Corps of Engineers' proposed Mississippi River-Gulf Outlet Project, Louisiana. Texas A&M University, Department of Oceanography and Meteorology. Project 185, Reference 59-5T. 33 p.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; Mississippi River; physical; current; environmental impact;

01360

Texas A&M University. 1972. Environmental aspects of a supertanker port on the Texas Gulf coast. Texas A&M University, Sea Grant Rep. No. TAMU-SG-73-201. 445 p.

ABSTRACT: This study focussed on an area 29 miles southeast of Freeport, Texas. The objective of the study was to evaluate potential impacts of a deep-sea port off the Texas coast. The study considered both construction impacts and oil spill impacts.
KEYWORDS: Texas; estuary; barrier island; coastal waters; continental shelf; oil and gas; environmental impact; oil spill;

01361

Texas A&M University Research Foundation. 1984. Offshore oceanographic and environmental monitoring services for the Strategic Petroleum Reserve. Volume 1. Appendices. Annual report to the U.S. Department of Energy for the Bryan Mound Site, September 1982-August 1983. Rep. No. DOE-PO/10850-2-V1, 517 p. NTIS order No. DE84010693.

ABSTRACT: This report describes the findings of a team of Texas A and M University scientists and engineers who have conducted a study to evaluate the effects of the Bryan Mound brine discharge on the marine environment. The study addresses the areas of physical oceanography, analysis of the discharge plume, water and sediment quality, nekton, benthos and data management. It focuses on the period from September 1982 through August 1983. The quarterly water and sediment quality data show a small increase in salinity, sodium and chloride ions occurs in the bottom waters and sediment pore waters near the diffuser relative to those values measured at stations farther away. It appears that brine disposal at Bryan Mound has had negligible if any influence on the nekton community surrounding the diffuser.
KEYWORDS: Texas; coastal waters; oil and gas; brine disposal; chemistry; biology; physical; environmental impact; Strategic Petroleum Reserve;

01362

Texas Energy and Natural Resources Advisory Council. 1982. Coastal natural resources in Texas: report to the Governor and the 68th Legislature. Texas Energy and Natural Resources Advisory Council, Austin. Natural Resources Div. Rep. No. TENRAC/NRP-81-002. 71 p. NTIS order No. DE83902078.

ABSTRACT: The Texas coastline stretches for 373 miles along the Gulf of Mexico. This area contains valuable resources, and makes a significant contribution to the state's economy and quality of life. This report summarizes a study of problems and issues affecting the coastal natural resource areas, presents recommendations for action, and contains a policy position statement from the Council. Issues addressed include: offshore energy production and onshore impacts; marine commerce in Texas, aquaculture; waste disposal; beach access/erosion; freshwater inflows; wetlands; and dunes.
KEYWORDS: Texas; barrier island; beach; marsh; coastal waters; biology; fisheries; socioeconomics; oil and gas; recreation; erosion; environmental impact;

01363

Thayer, G.W.; Govoni, J.J.; Connally, D.W. 1983. Stable carbon isotope ratios of the planktonic food web in the northern Gulf of Mexico. Bull. Mar. Sci. 33(2):247-256.

ABSTRACT: Analyses of stable C isotope ratios were conducted on components of the planktonic food web in the northern Gulf of Mexico to evaluate the importance of terrestrial organic matter as a source of C to this food web. These analyses were made on samples collected in areas of high (Southwest Pass, Louisiana) and low (Cape San Blas, Florida) riverine input. Dissolved organic C at 7 and 26 km from Southwest Pass and the 0.45-20 .mu.m particulate organic C size fraction at 7, 26 and 43 km from the Pass were the only components that displayed isotope ratios approaching terrestrial C values, means of -24.0.permill. and -24.6.permill., respectively. Phytoplankton had a mean .delta.13C of -22.7.permill. for both northern Gulf areas; 3 copepod genera [Temora turbinata, Labidocera spp. and Oithona spp.] and total zooplankton had mean values of -20.5.permill. and -21.9.permill., respectively. Four species of larval fish [Brevoortia patronus, Leiostomus xanthurus, Micropogonias undulatus and Mugil cephalus] had similar .delta.13C values in both areas (-21.1.permill.), suggesting their tissue C was derived ultimately from phytoplankton. Gut analyses indicated an intermediate zooplankton link for 3 spp. Gulf menhaden appeared to derive their C directly from phytoplankton as well as through the phytoplankton-zooplankton pathway. Isotopic fractionation values between trophic levels did not exceed .+-. 1.8.permill., a range similar to that reported for other ecological systems.
KEYWORDS: Florida; Louisiana; Southwest Pass; coastal waters; continental shelf; biology; chemistry; stable isotope; plankton;

01364

Thayer, P.A.; Roberts, H.H.; Bouma, A.H.; Coleman, J.M. 1986. Sedimentology and petrology of Mississippi Fan depositional environments, Deep Sea Drilling Project Leg 96, p. 489-503. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; chemistry; oil and gas; hydrocarbon; sediment; Deep Sea Drilling Project;

01365

Thomas, P.J. 1975. The fouling community on selected oil platforms off Louisiana, with special emphasis on the Cirripedia fauna. M.S. thesis. Florida State University, Tallahassee, FL. 129 p.

ABSTRACT: Eight oil platforms off the Louisiana coast were sampled from June 1972 to March 1974 to determine the quantity and quality of fouling growth. During the observation period, the study area, located 50 miles to the west of the Mississippi River, was strongly influenced by the River and by surrounding bays. The area was neither typically marine nor estuarine, but transitional. The biomass dominant on the platforms was the barnacle, Balanus reticulatus Utinomi. Comparison with a previous study on the Louisiana oil platforms revealed only a few changes in the fouling community, mainly correlated with the successful invasion and colonization by Balanus reticulatus.
KEYWORDS: Louisiana; coastal waters; biology; oil and gas; petroleum platform;

01366

Thomas, W.H.; Simmons, E.G. 1960. Phytoplankton production in the Mississippi Delta, p. 103-116. In F.P. Shepard, F.B. Phleger, and T.H. van Andel [ed.], Recent sediments, northwest Gulf of Mexico. Am. Assoc. Pet. Geol., Tulsa, OK. 394 p.

ABSTRACT: At 138 stations in the eastern Mississippi Delta area, measurements were made of phytoplankton production [C(14) O(2) uptake], chlorinity, temperature, suspended solids, Secchi disk depth, inorganic phosphate, soluble silica, and soluble kjeldahl nitrogen. In addition, the phytoplankton in the water were identified and enumerated. These stations were taken in Breton Sound and adjacent nearshore waters.
KEYWORDS: Louisiana; estuary; coastal waters; biology; chemistry; plankton; flora; primary production; nutrient;

01367

Thomas, W.H.; Simmons, E.G. 1960. Phytoplankton production in the Mississippi Delta, p. 103-116. In F.P. Shepard, F.B. Phleger, and T.H. Van Andel [ed.], Recent sediments, northwest Gulf of Mexico. Amer. Assoc. Petrol. Geol., Tulsa, OK.

ABSTRACT: At 138 stations in the eastern Mississippi Delta area, measurements were made of phytoplankton production (14-CO2 uptake), chlorinity, temperature, suspended solids, Secchi disk depth, inorganic phosphate, soluble silica, and soluble Kjeldahl nitrogen. In addition, the phytoplankton were identified and enumerated. The following results were obtained: (1) Surface phytoplankton production off the Delta is equal to or greater than that of highly productive tropical or subtropical pelagic or neritic areas; (2) Surface production is quite variable, with up to a seven-fold variation from one day to the next at a given location; (3) Although seaward traverses made on single days showed that production generally increased at seaward locations, there were no overall statistical differences between river, plume, and Gulf areas at any season; (4) During the period of high river discharge (May), surface production at the most seaward locations was significantly greater than during the fall months; (5) Integrated production in the water column was three to six times that occurring at the surface; (6) Rough comparisons of the sedimentation rate of organic carbon off the delta with phytoplankton production showed that it is unlikely that primary production contributes much to pro-delta slope sediments; (7) Theoretical calculations indicate that nitrogen is a more likely limiting nutrient in these waters than phosphate, although silicate may limit phytoplankton only in highly saline water, where no silicate could be detected; (8) Two hundred species of phytoplankton were identified from the delta, of which 86 percent were diatoms. During any given season, the relative concentrations of phytoplankton do not differ significantly from area to area. Significantly fewer phytoplankton were found in the river and plume at times of low water, but no significant difference in phytoplankton concentration in the Gulf was found between May and the fall months.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; biology; plankton; primary production; flora;

01368

Thompson, B.A.; Deegan, L.A. 1982. Distribution of ladyfish (Elops saurus) and bonefish (Albula vulpes) leptocephali in Louisiana. Bull. Mar. Sci. 32(4):936-939.

ABSTRACT: Little information is available concerning the early life history of elopiform fishes in the northern Gulf of Mexico. Recent sampling for larval and juvenile fishes in several Louisiana estuaries has added to our knowledge of these species in the north-central Gulf.
KEYWORDS: Louisiana; coastal waters; biology; fish;

01369

Thompson, B.C. 1982. Distribution, colony characteristics, and population status of least terns breeding on the Texas coast. Ph.D. dissertation. Texas A&M University, College Station, TX. 124 p.

ABSTRACT: Seasonal movements, colony site selection, and population status of the least tern (Sterna albifrons) were studied throughout the Texas coast during 1978-81. Total breeding population was estimated from coastwide, 1-day counts in early August. All age classes moved toward Gulf beaches by mid to late summer, and concentration areas were found commonly near jetties or natural channels. Fall migration was southward along Gulf beaches. The breeding population was at least 3,000 pairs and was estimated between 5,500 and 8,300 pairs. Previous data for Texas are not indicative of least tern population trend. Reevaluation of least tern status is recommended for other areas using routine surveys of known nesting areas, especially those in conjunction with counts of other colonial species.
KEYWORDS: Texas; biology; bird; endangered species;

01370

Thompson, E.F. 1977. Wave climate at selected locations along U.S. coasts. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, VA. Report No. TR 77-1.

ABSTRACT: Since 1948, the Coastal Engineering Research Center (CERC) and its predecessor, the Beach Erosion Board (BEB) have gathered wave data from U.S. coastal locations. Staff and pressure-sensitive gages, generally shore-based, were used to obtain the data; a few gages were operated at offshore locations. Wave records were initially 7-min pen and ink records taken six times a day, but more recently, 1,024-second digital records on magnetic tape taken four times daily have been used to determine significant wave heights and periods. Summaries of significant heights and periods for 19 gage locations provide useful information on ranges, and annual and seasonal variations of wave climate.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; Pacific Ocean; physical; coastal waters; wave;

01371

Thompson, E.F. 1980. Energy spectra in shallow U.S. coastal waters. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, VA. Rep. No. TP 80-2. 149 p.

ABSTRACT: Digital wave analyses for 3 to 12 months of data from each of 11 U.S. coastal gauges are summarized and discussed. Water depths at the gauge sites were typically between 5 and 9 meters. The gauge designs included step resistance, continuous wire, pressure, and accelerometer buoy. The analysis for each record included computation of the energy (or variance) spectrum and the distribution function of sea-surface elevations. Parameters of the spectrum and distribution function of sea-surface elevations were also computed.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; Pacific Ocean; physical; coastal waters; tide;

01372

Thompson, E.F; Harris, D.L. 1972. A wave climatology for coastal waters. In Proceedings, 1972 Offshore Technology Conference, Houston, TX. Paper No. OTC 1693.

ABSTRACT: Over the past 20 years, the Coastal Engineering Research Center has operated wave gauges along the Atlantic, Pacific, and Gulf coasts of the U.S. Cumulative wave height distribution functions for ten gauge locations have been studied in the format of the exponential distribution. One complete year of data, appears to give a reliable wave height distribution up to the 1% level of occurrence. Wave data from shipboard weather reports have been compared to wave gauge data and found to be of some use in describing long term summaries of coastal wave height conditions.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; Pacific Ocean; physical; coastal waters; wave;

01373

Thompson, J.H., Jr.; Bright, T.J. 1980. Effects of an offshore drilling fluid on selected corals, p. 1044-1078. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: oil and gas; biology; drilling fluid; environmental impact; benthos; physiology;

01374

Thompson, J.H., Jr.; Shinn, E.A.; Bright, T.J. 1980. Effects of drilling mud on seven species of reef-building corals as measured in the field and laboratory, p. 433-453. In R.A. Geyer [ed.], Marine environmental pollution, 1. Hydrocarbons. Elsevier Oceanography Series, 27A. Elsevier, New York. 591 p.

ABSTRACT: None
KEYWORDS: Florida; reef; oil and gas; biology; environmental impact; drilling fluid; benthos;

01375

Thompson, J.R. 1979. A study of the temporal changes in offshore macrofauna in the northern Gulf of Mexico during the development of the offshore oil industry, p. 547-551. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; oil and gas; fisheries; fish; benthos; environmental impact; Offshore Ecology Investigation;

01376

Thompson, M.J.; Putt, R.E.; Gettleson, D.A.; Hammer, R.M.; Stevens, R.C. 1982. Utilization of remotely operated vehicles (ROVs) for fish survey standing stock assessments, p. 1288-1293. In OCEANS '82 Conference Record. Marine Technology Society, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; continental shelf; reef; biology; fisheries; petroleum platform; fish;

01377
Thompson, P.A.; Leming, T.D. 1978. Seasonal description of winds and surface and bottom salinities and temperatures in the northern Gulf of Mexico, October 1972 to January 1976. National Marine Fisheries Service. NOAA Tech. Rept. NMFS SSRT-719. 44 p.

ABSTRACT: Seasonal surface and bottom salinities and temperatures in the northern Gulf of Mexico are described. The area surveyed, from October 1972 to January 1976, was between Mobile Bay, Alabama (long. 88o 00'W), and Atchafalaya Bay, Louisiana (long. 91o 30'W), from 5 to 50 fathoms (9 to 91 m).
KEYWORDS: Alabama; Louisiana; Mississippi; physical; chemistry; salinity; temperature; meteorology; wind;

01378
Thurman, C.L. 1973. Aspects of anoxic metabolism in the fiddler crab Uca minax and the distribution of fiddle crabs of the genus Uca along the northern coast of the Gulf of Mexico. Master's thesis. University of West Florida, Pensacola, FL. 75 p.

ABSTRACT: Fiddler crabs of the genus Uca have been identified and distributions described from 20 stations along the coast of the Gulf of Mexico from Tampico, Mexico to the Florida Keys. Laboratory experiments have been conducted to describe the anoxic metabolism of Uca minax. Laboratory animals held under various environmental conditions were monitored for levels of protein, lactic acid, glycogen, and LDH (lactate dehydrogenase). LD 50 experiments were conducted at various temperatures to describe the fiddler's ability to withstand anoxia.
KEYWORDS: Gulf of Mexico; marsh; beach; biology; benthos; physiology;

01379
Tieh, T.T.; Pyle, T.E.; Eggler, D.H.; Nelson, R.A. 1973. Chemical variations in sedimentary facies of an inner continental shelf environment, northern Gulf of Mexico. Sed. Geol. 9:101-115.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; geology; chemistry; sediment; trace metal; mineralogy;

01380
Tillery, J.B. 1980. Biological/chemical survey of Texoma and Capline sector salt dome brine disposal sites off Louisiana, 1978-1979. Volume VII. Determine trace metal composition and concentration in major components of the ecosystem. National Marine Fisheries Service, Galveston, TX. Rep. No. NOAA-TM-NMFS-SEFC-31. 102 p. NTIS order No. PB81-174989.

ABSTRACT: Investigations were made at the West Hackberry and Weeks Island proposed brine diffuser sites during four consecutive seasons (1978-79). Samples of suspended particulate matter, epibenthic organisms and macrocrustaceans were collected during all four seasons. The spatial and temporal distributions of 13 trace metals were determined in each sample matrix. Higher metal concentrations in sediments from the West Hackberry site are in agreement with the higher amounts of silt, clay and organic carbon reported in these sediments. There are indications of seasonal variations of Ba, Cd and Hg in Penaeus setiferus (white shrimp) muscle tissues.
KEYWORDS: Louisiana; coastal waters; biology; chemistry; brine disposal; water quality; environmental impact; trace metal; sediment; shrimp; Strategic Petroleum Reserve;

01381
Tillery, J.B. 1980. Environmental assessment of Buccaneer Gas and Oil Field in the northwestern Gulf of Mexico, 1975-1980. Volume VI. Trace metals. NOAA Tech. Mem. NMFS-SEFC-52. 39 p.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; sediment; trace metal; Buccaneer Field;

01382
Tillery, J.B.; Thomas, R.E. 1980. Heavy metal contamination from petroleum production platforms in the central Gulf of Mexico, p. 562-587. In R.C. Ayers, N.L. Richards, J.R. Gould, et al. [ed.], Proceedings. Symposium, Research on Environmental Fate and Effects of Drilling Fluids and Cuttings, 21-24 January 1980, Lake Buena Vista, FL. American Petroleum Institute, Washington, DC. 1122 p.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; chemistry; oil and gas; trace metal; drilling fluid; sediment; environmental impact;

01383
Timko, R.E.; Kolz, A.L. 1982. Satellite sea turtle tracking. Mar. Fish. Rev. 44(4):19-24.

ABSTRACT: None
KEYWORDS: biology; turtle; remote sensing;

01384
Tolbert, W.H.; Salsman, G.G. 1964. Surface circulation of the eastern Gulf of Mexico as determined by drift bottle studies. J. Geophys. Res. 69(2):223-230.

ABSTRACT: During the 28-month interval from September 1960 through December 1962, drift bottles were released periodically from a stationary platform located 20.4 km offshore from Panama City, Florida. Of the 951 bottles released, 276, or 29 per cent, were recovered. Approximately 67 per cent of the returns have been found along a 350-km section of coastline extending from Cape St. George west to the Florida-Alabama line; 20 per cent of the returns were from the Florida east coast and keys, and 12 percent were found along the coasts of Alabama, Mississippi. Louisiana, and Texas. Comparison of the drift-bottle data with local wind information indicates that the primary mechanism of surface water transport in the vicinity of the release point is wind-induced currents, which either transport the bottles to local beaches or to regions where permanent or semipermanent currents can displace them to western or southern shores. The results of this study are also compared with other drift-bottle studies conducted in the Gulf of Mexico.
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; physical; current; wind;

01385
Trask, P.D. 1952. Strength of sediments in the Gulf of Mexico, p. 145-157. In Proceedings 2nd Conference on Coastal Engineering.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi River Delta; continental shelf; geology; sediment; hazard;

01386
Trask, P.D. 1953. The sediments of the western Gulf of Mexico. Part 2 -- Chemical studies of sediments of the western Gulf of Mexico. Woods Hole Oceanogr. Instit. Pap. Phys. Oceanogr. Meteor. 12(4):49-120.

ABSTRACT: The organic content of sediments collected along transects across the continental shelf off Texas and Louisiana is discussed. Profiles of sediment texture, carbon content, and carbon/nitrogen ratio are presented.
KEYWORDS: Texas; Louisiana; continental shelf; geology; sediment; organic carbon;

01387
Treadwell, R.C. 1955. Sedimentology and ecology of southeast coastal Louisiana. Louisiana State University Press, Coastal Studies Institute Tech. Rep. 7:89.

ABSTRACT: None
KEYWORDS: Louisiana; barrier island; marsh; coastal waters; biology; ecology; geology;

01388
Treece, G.D. 1979. 4 new records of aplacophorous mollusks from the Gulf of Mexico. Bull. Mar. Sci. 29 (3):344-364.

ABSTRACT: Aplacophorous mollusks consisting of 134 specimens from 95 samples ranging from 42-134 m depth along the southern Texas continental shelf are reported, as a result of a Bureau of Land Management survey. Until now, there were no known records of aplacophorous mollusks anywhere in the Gulf of Mexico. Three genera of Caudofoveata and 1 genus of Solenogastres which may contain a number of new species are reported. Descriptions and scanning electron micrographs of the respective animals are given. [Genera are: Scutopus Salvini-Plawen, 1968, Prochaetoderma Thiele, 1902, Falcidens Salvini-Plawen, 1968 and Pruvotina Cockerell 1903].
KEYWORDS: Texas; continental shelf; biology; benthos; taxonomy; STOCS;

01389
Treece, G.D. 1979. Living marine mollusks from the south Texas continental shelf. Tex. J. Sci. 31 (3):271-284.

ABSTRACT: A 3 year survey of the south Texas continental shelf from Matagorda Island to Brownsville yielded 800 living invertebrate taxa (22% or 176 taxa were mollusks). The presence of aplacophorous mollusks is noteworthy since they were not previously reported from the Gulf of Mexico. Range extensions are noted for a number of organisms, a checklist presented and light and SCM [scanning electron microscope] photography of the rare specimens are included.
KEYWORDS: Texas; continental shelf; biology; benthos; taxonomy; STOCS;

01390

Trefry, J.H. 1974. The distribution of potentially toxic heavy metals in the sediments of San Antonio Bay and the northwest Gulf of Mexico. Master's thesis. Texas A&M University, College Station, TX. 105 p.

ABSTRACT: A total of 123 sediment samples were collected from 48 sites in San Antonio Bay and the Mississippi River delta between June, 1972 and July, 1973 and analyzed for the heavy metals Fe, Mn, Pb, Zn, Cd, Cu and calcium carbonate and organic carbon. Samples were collected during cruise 73-A-9 of the R/V Alaminos and cruise 73-L-2 of the R/V Longhorn. Data include scatter plots of various heavy metals.
KEYWORDS: Texas; Louisiana; San Antonio Bay; Mississippi River Delta; estuary; chemistry; trace metal; sediment; organic carbon;

01391

Trefry, J.H. 1987. The influence of the Mississippi River on trace metal distributions in the Gulf of Mexico. In Abstracts of papers, 194th American Chemical Society National Meeting, New Orleans, Louisiana, August 30-September 4, 1987.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Mississippi River; chemistry; trace metal; sediment;

01392

Trefry, J.H.; Metz, S.; Trocine, R.P.; Nelsen, T.A. 1985. A decline in lead transport by the Mississippi River. Science 230:439-441.

ABSTRACT: Inputs of pollutant lead to the Gulf of Mexico from the Mississippi River have declined by about 40% within the past decade. This decrease has been determined from annual lead loads of the Mississippi River and from the lead record in Mississippi Delta sediments. The observed trend is consistent with reduced consumption of lead in gasoline in the United States. More than 90% of the riverborne lead is associated with suspended sediments. Most of this particle-bound lead is deposited within 50 kilometers of the river mouth and is not easily leached at pH values above 3.
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi River; continental shelf; chemistry; trace metal; sediment;

01393

Trefry, J.H.; Nelsen, T.A.; Trocine, R.P.; Metz, S.; Vetter, T.W. 1986. Trace metal fluxes through the Mississippi river delta system. Rapp. P.V. Reun. Cons. Int. Explor. Mer. 186:277-288.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; estuary; coastal waters; chemistry; geology; trace metal;

01394

Trefry, J.H.; Presley, B.J. 1976. Heavy metal transport from the Mississippi River to the Gulf of Mexico, p. 39-75. In H.L. Windom and R.A. Duce [ed.], Marine Pollutant Transfer. Lexington Books, Lexington, MA.

ABSTRACT: Analysis of 29 river suspended matter samples taken at four different times show that heavy metal concentrations are very uniform, despite differences in sample location and depth and variations in total suspended matter and clay content. The only exception to this was found at very low river flow and total suspended matter concentration. At this time, a 25% decrease in Fe and Al content seems to be directly related to a comparable increase in organic matter. Higher than average concentrations of Mn, Cu, and Zn at low flow suggest a significant association of these metals with the organic fraction. Heavy metal concentrations of nearshore Gulf suspended matter are more variable than those found in the river, yet overall there is little difference in the concentrations of most metals between the two. Changes that have been observed suggest that there is some desorption of Mn across the freshwater/saltwater interface and perhaps uptake of Zn, Cd, Pb, and Cu under certain conditions. Although some plankton samples from near the mouth of the Mississippi River appear to have elevated Pb and Cd content, the overall metal concentrations of the plankton are quite similar to those reported from areas thought to be unaffected by man. Even though productivity is high, it is overshadowed by the large suspended sediment load of the Mississippi River, and the plankton play an insignificant role in transporting heavy metals to the deltaic sediments. The sedimentary record, which provides one of the best means for assessing anthropogenic metal input, shows that there has been a 60% increase in Pb and a 100% increase in Cd flux to the sediments over the past 25-30 years. The Cd concentration of present-day suspended material is three times that of mid-1900s sediment. On the other hand, there seems to be no significant recent increase of Mn, Ni, Co, Zn, Cr, or Cu from the Mississippi.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; chemistry; trace metal; sediment; plankton;

01395

Trefry, J.H.; Presley, B.J. 1976. Heavy metals in sediments from San Antonio Bay and the northwest Gulf of Mexico. Environ. Geol. 1:283-294.

ABSTRACT: Sediments from San Antonio Bay, the northwest Gulf of Mexico, and the Mississippi River Delta were acid leached and analyzed for Fe, Mn, Pb, Zn, Cd, Cu, and Ni by atomic absorption spectrophotometry. In order to account for differences in sediment clay, carbonate, and organic matter content, metal concentrations were normalized to Fe. Significant linear correlations of metals to Fe were obtained for unpolluted sediments and deviations from these "natural" statistical populations were found for areas thought to have metal input caused by man. San Antonio Bay sediments show little evidence of metal pollution despite 70 years of shell dredging in the bay. However, the San Antonio-Guadalupe River system, the bay's prime sediment source, has 10% to 50% higher than natural levels of Pb, Cd, and Cu. Sediments from a 1500 km^2 area of the Mississippi River Delta have Pb and Cd concentrations 10% to 100% higher than expected levels. The vertical distribution of Pb and Cd in these sediments suggests that inputs have occurred during the past 30 to 40 years. We find no indication of metal pollution in other areas of the Delta or along the continental shelf of the northwest Gulf of Mexico.
KEYWORDS: Texas; Louisiana; estuary; coastal waters; continental shelf; San Antonio Bay; Mississippi River Delta; chemistry; sediment; trace metal;

01396

Trefry, J.H.; Presley, B.J. 1982. Manganese fluxes from Mississippi delta sediments. Geochim. Cosmochim. Acta 46 (10):1715-1726.

ABSTRACT: Massive sediment deposition on the Mississippi River Delta establishes reducing conditions sufficient to bring about Mn dissolution in the top millimeters of sediment. As a result, significant fluxes of dissolved Mn pass from the Delta sediments to the overlying water columns. This process is examined by study of chemical partitioning of Mn in river particulates and Delta seidments and from interstitial water chemistry. Remobilized Mn is actively transported away from the Delta area with aluminosilicate detritus thereby providing excess Mn to the deep Gulf of Mexico at the expense of the Delta sediments.
KEYWORDS: Louisiana; Mississippi River Delta; chemistry; geology; trace metal; sediment; sediment transport;

01397

Trefry, J.H.; Shokes, R.F. 1981. History of heavy-metal inputs to Mississippi Delta sediments, p. 193-208. In R.A. Geyer [ed.], Marine environmental pollution. Volume 2: Dumping and mining. Elsevier Oceanogr. Ser. 27B.

ABSTRACT: This study was undertaken to determine the present-day flux of selected heavy metals from the Mississippi River to the Gulf of Mexico and the history of metal inputs to Mississippi delta sediments. Results from the present study confirm and expand the initial observations and provide a more reliable time scale for examining the history of the Delta metal pollution.
KEYWORDS: Louisiana; Mississippi River Delta; chemistry; trace metal; sediment;

01398

Trefry, J.H.; Trocine, R.P.; Meyer, D.B. 1981. Tracing the fate of petroleum drilling fluids in the northwest Gulf of Mexico, p. 732-736. In OCEANS 81 Conference Record. The ocean - An international workplace. Boston, MA, September 16-18, 1981, vol. 2.

ABSTRACT: Discharge of spent drilling fluids in the NW Gulf of Mexico has received much attention as operations move close to the coral reefs of the Texas Flower Garden Banks. This study has addressed the problem of identifying and tracking drilling fluid components which have been discharged into the marine environment and evaluating the degree to which these components have impacted the area. Using sea-going clean lab techniques, suspended matter Ba concentrations have proven to be a sensitive indicator of dispersion pathways. Particulate Ba distribution has enabled to: (1) identify rapid differential settling of much, but not all, of the Ba relative to other constituents upon discharge, (2) note that barium sulfate-rich deposits, common in the sediments near a rig, are less susceptible to resuspension than normal aluminosilicate detritus and (3) distinguish normal water column particle-rich layers from drilling related lenses. At present, no evidence is found of the occurrence of drilling fluid components on the Flower Gardens; however, a several fold, non-problematic increase in suspended Ba occurs in the northern rig area.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; reef; chemistry; oil and gas; drilling fluid; trace metal;

01399

Trefry, J.H.; Trocine, R.P.; Proni, J.R. 1985. Drilling-fluid discharges into the northwestern Gulf of Mexico, p. 195-222. In I.W. Duedall, D.R. Kester, P.K. Park, and B.H. Ketchum, [ed.], Environ. Sci. Technol. Wastes in the Ocean. Volume 4. Energy wastes in the ocean.

ABSTRACT: This chapter investigates the dispersion and fate of drilling-fluid components discharged into the marine environment with special focus on the Texas Flower Garden Banks (Flower Gardens) area of the northwestern Gulf of Mexico. Particulate Ba was found to be the best overall tracer of drilling-fluid dispersion however, routine monitoring of raw effluent for dissolved and particulate Cr and Fe, total petroleum hydrocarbons, total solids, and one other representative particulate trace metal (As, Cd, Hg, or Pb) is also recommended. The following were observed: (1) differential settling of the barite and clay components (2) that the barite component was less susceptible to resuspension than was normal sediment (3) that natural particle-rich layers can be distinguished from drilling-related lenses and (4) that the long-term, net directional movement of the released fluids can be established. Near the coral reefs of the Flower Gardens, drilling fluids are presently discharged to within 10 m of the bottom, a depth that is at least 100 m below the sea surface and at least 80 m below the top of the reefs. Resuspension processes, even during storms, do not carry bottom sediment, and thus the deposited matter from drilling fluid, onto the living reef. Although the drilling area to the north has higher than normal concentrations of Ba in the sediment and in the suspended matter of the water column, no drilling-fluid movement from that area to the Flower Gardens was observed.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; oil and gas; chemistry; drilling fluid; trace metal;

01400

Trent, L.; Pullen, E.J.; Adams, G.; Zamora, G., Jr. 1974. Catch per unit effort and mean total length of brown shrimp, Penaeus aztecus Ives, taken by trawl in the Galveston Bay systems, Texas, 1963-67. National Marine Fisheries Service, Data Rep. 93. 42 p.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; fisheries; shrimp; fishery statistics; fishing gear;

01401

Trippett, A.R.; Berryhill, H.L., Jr. 1982. Geology of the continental shelf edge and upper continental slope off southwest Louisiana. Minerals Management Service, Open File Rep. No. 82-02.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; continental slope; geology;

01402

Turgeon, K. 1981. Synthesis of the Texoma/Capline chemical and biological survey results: June 1978--May 1979. NOAA Environmental Data and Information Service, Washington, DC. 100 p.

ABSTRACT: Based on the findings of a one year baseline survey, distinct biological and chemical differences exist between the West Hackberry and candidate Weeks Island brine disposal sites. These differences can be attributed to the sediments, location, and coastal proximity of each site. Investigators concluded that the regions encompassing both sites are neither exceptionally productive nor heavily-exploited shrimping grounds. The combined data indicate that the West Hackberry and Weeks Island survey sites are not ecologically unique areas of the inner shelf region of the northwest Gulf of Mexico. Temporal and spatial variations within and between the two sites are typical of the region's natural variability. Based on the high tolerance and estuarine nature of the species collected and the relatively low ecological "richness" observed at the two sites, brine disposal should exert a minimal impact on the biotic communities. Apparently biotic communities are composed of hardy species capable of withstanding a wide range of environmental conditions.
KEYWORDS: Louisiana; coastal waters; oil and gas; biology; brine disposal; environmental impact; Strategic Petroleum Reserve;

01403

Turner, J.T. 1984. Zooplankton feeding ecology: Contents of fecal pellets of the copepods Eucalanus pileatus and Paracalanus quasimodo from continental shelf waters of the Gulf of Mexico. Mar. Ecol. Prog. Ser. 15:27-46.

ABSTRACT: Feeding patterns of adult female Eucalanus pileatus and Paracalanus quasimodo were examined by comparison of fecal pellet contents and available phytoplankton at 12 stations in northern Gulf of Mexico continental shelf waters. Pellets contained remains of a wide variety of various-sized solitary and chain-forming phytoplankters, tintinnids, crustaceans, amorphous detritus, and/or Mississippi River sediment. Dominant phytoplankters in fecal pellets largely corresponded to those dominant in the water at time of collection. There was, however, an apparent lack of ingestion of the most abundant phytoplankter (Ditylum brightwellii) by P. quasimodo at one station.
KEYWORDS: Louisiana; continental shelf; biology; ecology; plankton;

01404

Turner, J.T. 1984. Zooplankton feeding ecology: Contents of fecal pellets of the copepods Temora turbinata and T. stylifera from continental shelf and slope waters near the mouth of the Mississippi River. Mar. Biol. 82 (1):73-83.

ABSTRACT: In situ feeding habits of the copepods Temora turbinata and T. stylifera were investigated by scanning electron microscope examination of fecal pellets, the contents of which reflected copepod gut contents upon capture. Fecal pellets contained primarily the remains of the phytoplankters that were most abundant in the water at times of collection. There was considerable overlap in the food items ingested by adult females of both copepod species, or two stages of T. turbinata copepodites. Thus, T. turbinata and T. stylifera are omnivores, but primarily opportunistic herbivores.
KEYWORDS: Louisiana; continental shelf; continental slope; biology; plankton; ecology;

01405

Turner, J.T. 1984. Zooplankton feeding ecology: Contents of fecal pellets of the copepods Acartia tonsa and Labidocera aestiva from continental shelf waters near the mouth of the Mississippi River. P.S.Z.N. I: Mar. Ecol. 5 (3):265-282.

ABSTRACT: Feeding habits of adult female A. tonsa and L. aestiva and L. aestiva CV copepodites were examined by comparing fecal pellet contents and available phytoplankton. Samples were collected from 8 stations in the northern Gulf of Mexico near the mouth of the Mississippi River. Fecal pellets of both copepods contained remains of a wide variety of chain-forming and solitary phytoplankters of various sizes, as well as remains of other crustaceans. Contents of fecal pellets generally mirrored the composition and relative abundance of fluctuating assemblages of available natural phytoplankton. Both species fed upon a wide size range of cells, from solitary centric diatoms of 2-8 mu m diameter up to large solitary centrics of 33-53 mu m diameter. Remains of large or chain-forming diatoms and crustaceans were more dominant in fecal pellets of L. aestiva. This suggests that L. aestiva is primarily a raptorial feeder, grasping larger particles while A. tonsa is a more typical suspension feeder. Both copepods are opportunistic omnivores, however, and there is considerable overlap in their diets.
KEYWORDS: Louisiana; continental shelf; biology; plankton; ecology;

01406

Turner, J.T. 1985. Zooplankton feeding ecology: Contents of fecal pellets of the copepod Anomalocera ornata from the continental shelf and slope waters of the Gulf of Mexico. Mar. Ecol. 6(4):285-298.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; biology; plankton; ecology;

01407

Turner, J.T. 1986. Zooplankton feeding ecology: Contents of fecal pellets of the copepod Undinula vulgaris from continental shelf waters of the Gulf of Mexico. Mar. Ecol. 7(1):1-14.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; biology; plankton; ecology;

01408

Turner, J.T. 1986. Zooplankton feeding ecology: Contents of fecal pellets of the cyclopoid copepods Oncaea venusta, Corycaeus amazonicus, Oithona plumifera, and O. simplex from the northern Gulf of Mexico. Mar. Ecol. 7(4):289-302.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; biology; plankton; ecology;

01409

Turner, R.E. 1982. Wetland losses and coastal fisheries: An enigmatic and economically significant dependency. In D.F Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences and Options. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59. 256 p.

ABSTRACT: Louisiana's coastal fishing industry landings are limited by the area of coastal wetlands, not open water. The relationship is not sufficiently understood, but is demonstrable through the life history patterns of all the commercially important species, organism density in the vicinity of altered and natural wetland-water edges, experiments in predation, and correlation analysis of landings data and wetland quantity and quality. The management implications are that wetland area should be conserved in order to maximize for the largest potential fisheries yields. The impact of previous wetland losses are not well documented because of lack of good landings data that accounts for both year-to-year environmental influences and a changing fishing effort. At a projected 1 percent wetland loss rate over the next 20 years, the commercial fishing industry will experience a potential one billion dollar loss spread throughout the industry (exclusive of the recreational value). Thus with a mere 10 percent reduction in the present loss rates, the annual savings would be 5 million dollars.
KEYWORDS: Louisiana; marsh; erosion; biology; ecology; fisheries;

01410

Turner, R.E. 1987. Relationship between canal and levee density and coastal land loss in Louisiana. U.S. Fish Wildl. Serv. Biol. Rep. 85(14). 58 p.

ABSTRACT: Nearly one percent of Louisiana's coastal land becomes water each year. This land loss affects everything from wildlife, fisheries, and recreation to the economy and culture. A part of this loss results from natural, unmanageable factors, but manageable factors are also responsible. This report discusses one of the manageable factors: canals and their dredged-material levees. In coastal Louisiana wetlands, canals are constructed primarily to facilitate navigation and oil and gas recovery. The density of canals in this region is now about equal to the natural network of bayous and creeks. The primary effect of these canals and associated levees is to alter the process of flooding and drainage. The influence of canals and their levees on coastal Louisiana erosion rates are modified by local geologic, hydrologic, and biologic interactions. The empirical relationship between canals and erosion is, however, clear; land loss is directly related to canal density. Comparisons with mosquito ditches, which are smaller analogues of canals, reveal similar patterns of wetland changes and suggest management options.
KEYWORDS: Louisiana; estuary; marsh; geology; biology; erosion; oil and gas; environmental impact;

01411

Turner, R.E.; Allen, R.L. 1982. Bottom water oxygen concentration in the Mississippi River Delta Bight. Contrib. Mar. Sci. 25:161-172.

ABSTRACT: Bottom water oxygen concentrations in the Mississippi River Delta Bight are commonly below saturation values. Hypoxic conditions (less than 3 mg/l) most often occur in shallow depths, west of the delta during summer. The hypoxic layer may be only a few meters thick and located on the bottom. An unusual midwater oxygen-depleted zone was observed south of Mobile Bay. The oxygen-minimum layer from deep water in the Gulf of Mexico may connect with low oxygen zones at the shelf break. In situ decomposition of material sinking from the surface layers is the most likely major oxygen consuming process. Lack of vertical mixing due to stratification probably contributes to the hypoxic summer conditions when oxygen concentration values are lowest.
KEYWORDS: Alabama; Louisiana; Mississippi; coastal waters; continental shelf; chemistry; physical; dissolved oxygen; hypoxia;

01412

Turner, R.E.; Allen, R.L. 1982. Plankton respiration rates in the bottom waters of the Mississippi River Delta Bight. Contrib. Mar. Sci. 25:173-179.

ABSTRACT: Community plankton respiration (CPR) rates in the bottom waters of the Mississippi River Delta Bight ranged from 0.12 to 8 mg oxygen m-3 h-1 in July and November, 1976. Mean values were similar on both cruises, and between east and west halves of the delta in July. The observed rates are high enough to influence significantly and possibly dominate factors influencing oxygen concentrations. The regional low oxygen concentrations that commonly occur are probably influenced as well by benthic respiration and by stratification. The role of suspended sediments in deriving variations in average CPR rates appears to be of minor importance since equal rates occurred in areas with and without a nepheloid layer. In July CPR was correlated with variations in chlorophyll a concentrations, thus indicating that phytoplankton sinking is probably a major factor determining regional variations in CPR.
KEYWORDS: Alabama; Louisiana; Mississippi; continental shelf; biology; plankton; physiology;

01413

Turner, R.E.; Brody, M.S. 1983. Habitat suitability index models: northern Gulf of Mexico brown shrimp and white shrimp. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/10.54. 24 p.

ABSTRACT: The habitat use information and habitat suitability index (HSI) models in this report on northern Gulf of Mexico brown shrimp and white shrimp are intended for use in impact assessment and habitat management. The models were developed from a review and synthesis of existing information and are scaled to produce an index of habitat suitability between 0 (unsuitable habitat) and 1 (optimally suitable habitat). Assumptions used to transform habitat use information into the HSI model and guidelines for model applications, including methods for measuring model variables, are described. These models are hypotheses of species-habitat relationships, not a statement of proven cause and effect relationships. The models have not been field-tested, but have been applied to four hypothetical data sets which are presented and discussed. For this reason, the U.S. Fish and Wildlife Service encourages model users to convey comments and suggestions that may help increase the utility and effectiveness of this habitat-based approach to fish and wildlife management.
KEYWORDS: Gulf of Mexico; biology; coastal waters; continental shelf; fisheries; shrimp; model;

01414

Turner, R.E.; Cahoon, D.R. 1988. Causes of wetland loss in the coastal central Gulf of Mexico. Report to the Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. Contract No. 14-12-0001-30252. OCS Studies MMS 87-0119, 87-0120, and 87-0121.

ABSTRACT: None
KEYWORDS: Louisiana; marsh; geology; oil and gas; erosion; sea level; dredging; pipeline; environmental impact;

01415

Turner, R.E.; Costanza, R.; Scaife, W. 1982. Canals and wetland erosion rates in coastal Louisiana, p. 73-84. In D.F. Boesch [ed.], Proceedings of the Conference on Coastal Erosion and Wetland Modification in Louisiana: Causes, Consequences, and Options, October 5-7,1981. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-82/59.

ABSTRACT: Canals have increased in area from practically zero at the beginning of the century to about 2.4% of the Louisiana coastal surface area in 1978. The annual increase in canal area is continuing to climb in 1981 as a result of new canal dredging and the widening of the existing canals. Land loss rates across the coastal zone since the 1890s, among hydrologic units, and within areas of similar substrates and equal distances to the coast, are all positively related to estimates of canal density. Further, estimates of land loss at zero canal density (from regression equations) are similar to the 7,000 year coast-wide rate of gain in land. Within 7.5-minute quadrangle maps, the new "holes" or ponds in the marsh have appeared close to canals, not near natural channels. Coast wide, canal surface is about 10% of the total land loss. Based on our analysis we conclude that coastal erosion rates in Louisiana are largely an indirect result of canal dredging activities or use. The mechanism for the effect probably involved an alteration in wetland hydrology, but a complete understanding is presently lacking. Thus corrective measures cannot be identified and implemented with confidence until more is known about the mechanisms of canal and spoil bank effects on wetland hydrology.
KEYWORDS: Louisiana; barrier island; marsh; coastal waters; geology; erosion; sedimentation; dredging; environmental impact;

01416

U.S. Army Corps of Engineers. 1973. Report on Gulf Coast deep water port facilities, Texas, Louisiana, Mississippi, Alabama, and Florida. U.S. Army Corps of Engineers, Lower Mississippi Valley Division. 136 p.

ABSTRACT: None
KEYWORDS: Alabama; Florida; Louisiana; Mississippi; Texas; biology; chemistry; geology; physical; meteorology; socioeconomics;

01417

U.S. Army Corps of Engineers. 1974. Flood of '73 - post flood report. Volume 2. U.S. Army Corps of Engineers, New Orleans, LA. 89 p.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; biology; chemistry; physical; meteorology; environmental impact; water quality;

01418

U.S. Army Corps of Engineers. 1984. Advance information. Part 2. Mississippi Valley - Gulf Coast region freight traffic tables CY - 1982. U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, New Orleans, LA. 157 p.

ABSTRACT: None
KEYWORDS: Alabama; Louisiana; Mississippi; socioeconomics; shipping;

01419

U.S. Army Corps of Engineers. (No date). Sediment analysis statistics file. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Fort Belvoir, VA.

ABSTRACT: Data is taken by field surveys by C.E.R.C. field parties, district survey parties, or under contract by commercial firms. The sand samples analyzed are grab samples taken from beaches or bottom surfaces, suspended samples taken from water, or core samples obtained from offshore or onshore locations. Size analysis are made by mechanical (hydraulic) measurement of fall velocity. Applications programs applied to raw data are: plot sediment size analysis graph; edit, verify, reformat, list geological sample information; reduce raw data in form of a digitalized decay vs. time curve to a sediment size frequency distribution and computes statistical moments of the distribution.
KEYWORDS: Gulf of Mexico; geology; sediment; sediment texture;

01420

U.S. Department of Commerce. 1979. Draft Environmental Impact Statement prepared on the proposed East and West Flower Gardens Marine Sanctuary. NOAA, Office of Coastal Zone Management, Washington, DC. 241 p.

ABSTRACT: This document includes a description of the affected environment; a section on outer continental shelf oil and gas development and impacts; and impacts related to recreational use and commercial shipping and fishing.
KEYWORDS: Texas; continental shelf; Flower Garden Banks; oil and gas; biology; geology; chemistry; physical; fisheries; reef; environmental impact;

01421

U.S. Department of Commerce. 1983. Marine environmental assessment, Gulf of Mexico. National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, Washington, DC.

ABSTRACT: The Gulf of Mexico 1982 Annual Assessment presents a synoptic view of several economic sectors and their direct and indirect relations to the physical and biological marine and atmospheric environment. An attempt was made to bring into one focus the numerous commercial, social, and scientific activities in the Gulf relative to environmental conditions, especially weather and oceanographic events or trends. Using research results in the fields of physical oceanography, marine biology, meteorology, political science, and economics, the Marine Assessment Branch, Marine Environmental Assessment Division of the Assessment and Information Services Center has presented a multi-disciplinary view of the Gulf during a single calendar year.
KEYWORDS: Gulf of Mexico; physical; biology; fisheries; socioeconomics; coastal waters; continental shelf; continental slope; deep sea;

01422

U.S. Department of Commerce. 1984. Marine environmental assessment, Gulf of Mexico. National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, Washington, DC.

ABSTRACT: The Gulf of Mexico 1983 Annual Assessment presents a synoptic view of several economic sectors and their direct and indirect relations to the physical and biological marine and atmospheric environment. An attempt was made to bring into a single focus the numerous commercial, social, and scientific activities in the Gulf relative to environmental conditions, especially weather and oceanographic events or trends. Using research results in the fields of physical oceanography, marine biology, meteorology, political science, and economics, we have developed a multi-disciplinary view of the Gulf during a single calendar year.
KEYWORDS: Gulf of Mexico; physical; biology; fisheries; socioeconomics; coastal waters; continental shelf; continental slope; deep sea;

01423

U.S. Department of Commerce. 1985. Gulf of Mexico coastal and ocean zones strategic assessment: data atlas. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Washington, DC.

ABSTRACT: This is an oversize data atlas, with maps of various biological, chemical, geological, and physical features of the Gulf of Mexico. Fisheries information is also included.
KEYWORDS: Gulf of Mexico; biology; geology; chemistry; physical; socioeconomics; fisheries; remote sensing;

01424

U.S. Department of Commerce and Louisiana Department of Natural Resources. 1980. Louisiana coastal resources program final environmental impact statement. Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; estuary; beach; marsh; barrier island; biology; geology; chemistry; physical; socioeconomics; environmental impact;

01425

U.S. Environmental Protection Agency. 1982. Research permit for incineration at sea of PCB wastes -- preliminary report on results of test burn on M/T Vulcanus. Environmental Protection Agency, Washington DC. HQ81-002. 96 p.

ABSTRACT: Since 1973 when the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, became effective, the Environmental Protection Agency (EPA) has been implementing an ocean disposal permit program which provides that all ocean disposal of waste materials transported for the purpose of dumping be done under permit at sites designated by EPA, except for dredged material which is regulated by the Corps of Engineers. Since September 1974 EPA has interpreted that ocean incineration comes under the regulatory mandates established by the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, and therefore requires an ocean dumping permit from EPA and involves the designation of sites. EPA believes that ocean incineration is an emerging viable technological alternative, under carefully controlled conditions, to the direct dumping of the material into the marine environment. Ocean incineration is a waste burning process whereby chemical wastes are taken aboard specially designed and equipped vessels and transported to specified locations in the ocean. The on-board incinerators are fuel fired to a predetermined temperature, the waste valves are opened, and waste is fed into the incinerator. The nature of wastes being incinerated is such that, once they hit the pre-heated incinerator, they ignite and continue to burn, becoming virtually completely destroyed in the process.
KEYWORDS: Gulf of Mexico; continental shelf; biology; chemistry; PCB; environmental impact; ocean incineration;

01426

U.S. Fish and Wildlife Service. 1978. Managing oil and gas activities in coastal environments. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-78/54.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; marsh; estuary; barrier island; coastal waters; oil and gas; biology; ecology; environmental impact;

01427

U.S. Travel Data Center. 1980. The economic impact of travel on Louisiana parishes - 1979. Louisiana Tourist Development Commission, Baton Rouge, LA. 20 p.

ABSTRACT: This study was conducted by the U.S. Travel Data Center for the Louisiana Office of Tourism and provides estimates of travel spending in each of 64 Parishes in Louisiana, and employment, wage and salary income, state tax revenue and local tax revenue generated by this spending. These estimates were provided by the Travel Economic Impact Model (TEIM),which is a disaggregated model built upon estimates of 16 travel expenditure categories, their impact on 16 types of travel-related businesses at the retail level, and the business receipts, employment, personal income, and tax receipts that result.
KEYWORDS: Louisiana; socioeconomics; tourism; model;

01428

U.S. Travel Data Center. 1981. The economic impact of travel on Louisiana parishes - 1980. Louisiana Tourist Development Commission, Baton Rouge LA. 20 p.

ABSTRACT: This study was conducted by the U.S. Travel Data Center for the Louisiana Office of Tourism and provides estimates of travel spending in each of 64 Parishes in Louisiana, and employment, wage and salary income, state tax revenue and local tax revenue generated by this spending. These estimates were provided by the Travel Economic Impact Model (TEIM), which is a disaggregated model built upon estimates of 16 travel expenditure categories, their impact on 16 types of travel-related businesses at the retail level, and the business receipts, employment, personal income, and tax receipts that result.
KEYWORDS: Louisiana; socioeconomics; tourism; model;

01429

U.S. Travel Data Center. 1982. The economic impact of travel on Louisiana parishes - 1981. Louisiana Tourist Development Commission, Baton Rouge, LA. 21 p.

ABSTRACT: This study was conducted by the U.S. Travel Data Center for the Louisiana Office of Tourism and provides estimates of travel spending in each of 64 Parishes in Louisiana, and employment, wage and salary income, state tax revenue and local tax revenue generated by this spending. These estimates were provided by the Travel Economic Impact Model (TEIM), which is a disaggregated model built upon estimates of 16 travel expenditure categories, their impact on 16 types of travel-related businesses at the retail level, and the business receipts, employment, personal income, and tax receipts that result.
KEYWORDS: Louisiana; socioeconomics; tourism; model;

01430

U.S. Travel Data Center. 1983. The economic impact of travel on Louisiana parishes - 1982. Louisiana Tourist Development Commission, Baton Rouge, LA. 23 p.

ABSTRACT: This study was conducted by the U.S. Travel Data Center for the Louisiana Office of Tourism and provides estimates of travel spending in each of 64 Parishes in Louisiana, and employment, wage and salary income, state tax revenue and local tax revenue generated by this spending. These estimates were provided by the Travel Economic Impact Model (TEIM), which is a disaggregated model built upon estimates of 16 travel expenditure categories, their impact on 16 types of travel-related businesses at the retail level, and the business receipts, employment, personal income, and tax receipts that result.
KEYWORDS: Louisiana; socioeconomics; tourism; model;

01431

Uchupi, E. 1967. Bathymetry of the Gulf of Mexico. Trans. Gulf Coast Assoc. Geol. Soc. 17:161-172.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; continental slope; geology; deep sea;

01432

Uchupi, E.; Emery, K.O. 1968. Structure of continental margin off the Gulf Coast of the United States. Am. Assoc. Pet. Geol. Bull. 52(7):1162-1193.

ABSTRACT: Continuous seismic-reflection profiles were recorded along 15 lines across the continental margin of the Gulf of Mexico. The steep slopes off Florida and Yucatan (Florida and Campeche escarpments) appear to have been formed be construction of coral or algal reefs during the Cretaceous Period. The adjacent upper continental slope and continental shelf were formed by prograding and upbuilding of largely calcareous sediments after the death of the Cretaceous reef-building organisms. Off Louisiana, Texas, and part of Mexico the upper continental slope and the continental shelf were formed by progradation and upbuilding of terrigenous sediment contributed largely by the Mississippi River during the Tertiary Period. These sediments buried deeply much of the Early Cretaceous reef. Considerable alteration of the general structure off Louisiana and Texas resulted from contemporaneous intrusion of salt diapirs. Sediments in the basins between the diapirs were derived partly from the tops of the nearby salt intrusives. The Sigsbee escarpment at the seaward edge of the sedimentary prism off Louisiana and Texas is bordered by a broad ridge of diapirs, to which it may owe its origin. Although diapiric structures are best known north of the Sigsbee escarpment, others are present on the south, at the center of the Gulf basin, and as far south as Golfo de Campeche. During Early Cretaceous time the reef once almost surrounded the Gulf of Mexico, probably leaving only one narrow connection with the open ocean at the southeast. The narrow opening and the low relative sea level, indicated by reef structure and calcareous algae nearly 3,000 m below present sea level, suggest that water circulation was restricted during Early Cretaceous time. If it had been somewhat more restricted earlier, conditions could have been suitable for the widespread deposition of Late Triassic to Middle Jurassic salt that later fed the diapiric structures.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; sediment; stratigraphy; diapir;

01433

Uebelacker, J.M.; Johnson, P.G. [ed.]. 1984. Taxonomic guide to the polychaetes of the northern Gulf of Mexico. Report by Barry A. Vittor & Associates to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. Contract No. 14-12-0001-29091. 7 vol. NTIS order Nos. PB85-150752, PB85-150761, PB85-150779, PB85-150787, PB85-150795, PB85-150803, and PB85-150811.

ABSTRACT: Biological baseline studies carried out on the Gulf of Mexico outer continental shelf routinely include infaunal samples taken from soft substrates. Polychaete worms usually predominate in these benthic samples, but taxonomic inconsistencies preclude the incorporation of polychaete assemblages in meaningful ecological evaluations. Recognizing the taxonomic consistency problem, the Bureau of Land Management (BLM) funded a study to standardize all polychaete identifications from major BLM studies conducted in the northern Gulf of Mexico to develop a general polychaete identification guide. The study was expanded and completed under funding from the Minerals Management Service (MMS). Polychaete specimens were secured from voucher collections of the following BLM/MMS studies: South Texas Outer Continental Shelf Study (STOCS), Mississippi-Alabama-Florida Study (MAFLA), Ecological Investigations of Petroleum Platforms in the Central Gulf (CTGLF), IXTOC Oil Spill Study (IXTOC), and Southwest Florida Shelf Ecosystems Study (SOFLA). A total of 593 polychaete taxa were recognized from the collections; 41% were new to science. The identification guide is divided into chapters, each covering a polychaete family. The chapters provide diagnostic characters of the family, and biological notes followed by a taxonomic treatment. The taxonomic section of each chapter includes generic keys, generic diagnoses, species keys, and species descriptions. Biological notes include characteristic life history, feeding strategy, reproduction, substrate preference, tube construction, locomotion, behavior, commensalism, parasitism, and larval development are given when possible.
KEYWORDS: Gulf of Mexico; continental shelf; biology; taxonomy; benthos;

01434

Ulm, W.F. 1983. A volumetric temperature-salinity census for the continental shelf of the northwestern Gulf of Mexico. M.S. thesis. Texas A&M University, College Station, TX.

ABSTRACT: Monthly volumetric temperature-salinity censuses have been prepared for waters down to 200 m on or near the Texas-Louisiana shelf which extends from the Mississippi Delta to the Rio Grande. For each month the volume of water in each temperature-salinity class is displayed in a T-S diagram to provide a frequency distribution of temperature and salinity. The temperature interval used is 1 degrees C; the salinity interval of 1.0 ppt is used for all salinities; in a second diagram for the 34.0 ppt to 37.0 ppt range, a salinity interval of 0.2 ppt is used. Similar censuses of the odd numbered months of the year have been prepared separately for the portions of the shelf east and west of 95 degrees W.
KEYWORDS: Texas; Louisiana; physical; continental shelf; temperature; salinity;

01435

University of Southwestern Louisiana. 1977. Outer continental shelf impacts, Morgan City, Louisiana. Report to Louisiana Department of Natural Resources, Coastal Management Division, Baton Rouge, LA.

ABSTRACT: Impacts of OCS activities upon Morgan City, Louisiana described categorically by employment, income, occupational shifts, population increases, increased division of labor, changes in land use, strains on municipal services, destruction of the environment, shifts in tax base, and changes in recreation patterns.
KEYWORDS: Louisiana; oil and gas; socioeconomics; onshore facilities; recreation; environmental impact;

01436

Upshaw, G.F.; Creath, W.B.; Brooks, F.L. 1966. Sediments and microfauna off the coasts of Mississippi and adjacent states. Miss. Geol. Surv. Bull. 106-127.

ABSTRACT: None
KEYWORDS: Alabama; Louisiana; Mississippi; coastal waters; continental shelf; biology; geology; sediment;

01437

Van Andel, T.H. 1960. Sources and dispersion of Holocene sediments, northern Gulf of Mexico. , p. 34-55. In F.P. Shepard, F.B. Phleger, and T.H. Van Andel [ed.], Recent sediments, northwestern Gulf of Mexico. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: Principal sediment sources in the northern Gulf of Mexico are the Mississippi and Rio Grande basins, which supply subarkosic sands with highly unstable heavy mineral suites derived from mixed sedimentary, volcanic, plutonic, and metamorphic rocks. Components belonging to the last three groups predominate in the heavy mineral assemblages. Much of the detritus has been transported over very long distances. Tectonically, the source areas include both cratons and orogens. The distributive provinces are homogeneous, and sands, silts, and clays spread over the entire width of the shelf. The drainage basins of the rivers of western Louisiana, Texas, and the area east of the Mississippi represent less abundant sediment sources. With the exception of the metamorphic and sedimentary suite of the Colorado River, sediments are orthoquartzitic with stable heavy mineral suites, and are derived from the Cretaceous and Tertiary margins of the Gulf Coast basin. Sands from these sources are distributed mainly in the nearshore zone, whereas the clays are carried by Gulf residual currents and deposited on the middle and outer shelf together with fine-grained Mississippi and Rio Grande material. The distribution patterns of the two major textural groups, sand and silt-clay, are virtually independent, and in many instances the sand, silt, and clay modes of the same locality have different sources. The sequence of nearshore environments produced by the Holocene transgression has resulted in the deposition of a complex pattern of sediments form a variety of sources. Modification of the composition of the sand fraction by agents operating in the depositional basin appear to be of little significance except for the removal of pyroxenes by weathering from Mississippi and Rio Grande deposits exposed in the continental shelf during the Pleistocene. A review of Gulf sediments in the light of theories on tectonic control of sediment properties leads to the conclusion that the tectofacies of the source and depositional areas has little influence in sediment composition in this area. Sediment texture is controlled almost exclusively by depositional environment, which is only to a small extent dependent upon tectonics. Consequently, in the Gulf of Mexico both textural and compositional properties of the sediments are to a large degree independent of tectofacies.
KEYWORDS: Louisiana; Texas; continental shelf; continental slope; geology; mineralogy; sediment; sediment texture;

01438

Van Andel, T.H.; Curray, J.R. 1960. Regional aspects of modern sedimentation in northern Gulf of Mexico and similar basins, and paleogeographic significance. In F.P. Shepard, F.B. Phleger, and T.H. van Andel [ed.], Recent Sediments, Northwest Gulf of Mexico. Am. Assoc. Petrol. Geol., Tulsa, OK.

ABSTRACT: This paper summarizes some of the results of recent sediment studies in the northern Gulf of Mexico and Orinoco area in terms of their interest for stratigraphy and paleogeography. This discussion in limited to modern sediments forms in a broad, open basin with a vast hinterland, an abundant supply of terrigenous sediment, and a general predominance of sedimentation over tectonic effects.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; sediment; stratigraphy;

01439

Van Andel, T.H.; Poole, D.M. 1960. Sources of recent sediments in the northern Gulf of Mexico. J. Sed. Petrol. 30:91-122.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Mississippi River; geology; sediment; mineralogy;

01440

Van Beek, J.L.; Davis, D.J.; Emmer, R.E.; Hsu, S.A.; Mendelssohn, I.A.; Sabins, D.S.; Wax, C.L.; Wicker, K.M. 1979. An introduction to the environmental literature of the Mississippi Deltaic Plain region. U.S. Fish and Wildlife Service, Office of Biological Services, Washington DC. FWS/OBS-79/30. 208 p.

ABSTRACT: This report is a review of selected environmental literature of the Mississippi Deltaic Plain Region. This review introduces some of the major ecosystem components and processes, describes oil and gas production activities, and guides the reader to available literature. The seven chapters in this review and the number of references used for each are as follows: Introduction - 5; Geology - 147; Hydrology - 98; Climate and Air Quality - 78; Plants, Fish, and Wildlife - 277; Ecology - 135; and Oil and Gas - 70. The format of each chapter is not always the same, but consideration is given to data deficiencies and research needs. This report may serve as a general reference work and aid in the synthesis of more specialized subject material.
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; coastal waters; biology; geology; physical; oil and gas; ecology; environmental impact; wildlife; meteorology; air quality;

01441
Van Heerden, I.L. 1983. Deltaic sedimentation in eastern Atchafalaya Bay, Louisiana. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: None
KEYWORDS: Louisiana; Atchafalaya Bay; geology; sediment transport; sedimentation;

01442
Van Heerden, I.L.; Wells, J.T.; Roberts, H.H. 1983. River-dominated suspended-sediment deposition in a new Mississippi delta. Can. J. Fish. Aq. Sci. 4(suppl):60-71.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; geology; sedimentation; sediment;

01443
Van Sickle, V.; Barrett, B. 1976. Barataria Basin: Salinity changes and oyster distribution. Louisiana Sea Grant Pub. No. LSU-T-76-002. 22 p.

ABSTRACT: Trends in production and distribution of the American oyster in Barataria Basin are correlated with changing environmental conditions that affect spatfall, growth, reproduction and mortality.
KEYWORDS: Louisiana; estuary; marsh; biology; ecology; oyster; salinity;

01444
Van Siclen, D.C. 1984. Early opening of initially-closed Gulf of Mexico and central North Atlantic ocean. Trans. Gulf Coast Assoc. Geol. Soc. 36:265-275.

ABSTRACT: Regional structures beneath the northern Gulf of Mexico coastal plain clearly reveal the fit of the American continents following Late Paleozoic Appalachian-Ouachita orogeny. Most diagnostic is a wrench fault zone within the former Gondwana megacontinent, recognizable from the Florida panhandle to western Mississippi, along which future South America moved northwest against the southern edge of eastern North America to form the Ouachita foldbelt, while future Africa was already subducting that continent along the Appalachian belt. Extending westward from this in southwestern Alabama is the Wiggins arch, underlain by "granite" and phyllite of Late Pennsylvania into Early Permian age, apparently part of a volcanic arc. Along its north side and that to its counterparts farther west are shallow- marine strata of similar age. These appear to occupy a remnant ocean on North American oceanic crust, which was uncoupled by the close approach of future South America and subducted very briefly beneath North America, while the sediments on its leading edge were peeled off and thrust onto the continent. The inferred volcanic arc and remnant ocean, and the Late Triassic Interior rift system that separates them from the Ouachita foldbelt, terminate abruptly in East Texas against a wrench fault that transferred this rifting south-southwest to the Rio Grande embayment area.
KEYWORDS: Gulf of Mexico; geology; geologic history;

01445
Van Vleet, E.S.; et al. 1984. Distribution, sources, and fates of floating oil residues in the eastern Gulf of Mexico. Mar. Pollut. Bull. 15(3):106-110.

ABSTRACT: Spatial and temporal variations in the amount of pelagic tar (floating oil residues) in the eastern Gulf of Mexico indicate that environmentally sensitive coastal regions are relatively free of pelagic tar contamination. Chemical analysis of pelagic tar samples reveal a molecular composition characteristic of crude oil sludge, such as tanker wall washings: approximately half the samples collected for this study appear to have originated from tanker operations. Natural oil seeps, Mississippi River discharge, and oil rigs and drilling platforms in the area do not contribute a significant portion of this type of oil to the Gulf. An influx of 0.6-2.7 x 10 super(3) ton/yr, or about 10-50% of the pelagic tar found in the area, is transported in from the Caribbean Sea via the Gulf Loop Current. The remaining tar is assumed to originate within the Gulf.
KEYWORDS: Gulf of Mexico; chemistry; hydrocarbon; oil and gas;

01446

Vargo, S.; Lutz, P.; Odell, D.; Van Vleet, E.S.; Bossart, G. 1986. Study of the effects of oil on marine turtles. Volume 1. Executive summary. Report to Minerals Management Service, Reston, VA. Rep. No. OCS/MMS-86/0070-VOL-1. 28 p. Contract No. DI-14-12-0001-30063. NTIS order No. PB87-199923/XAB.

ABSTRACT: The objective of the study was to determine the effects of oil on marine turtles. An experimental program was carried out on 3-20 month old loggerhead and 3-16 month old green turtles to determine behavioral and physiological effects of oil using South Louisiana Crude Oil (SLCO) preweathered for 48 hrs. The behavioral experiments indicated that both species of marine turtles had a limited ability to avoid oil slicks, but experiments to determine avoidance/attraction to floating tar balls were inconclusive. The physiological experiments showed that the respiration, skin, some aspects of blood chemistry and composition, and salt gland function of 15-18 month old loggerhead sea turtles were significantly affected.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; continental shelf; biology; chemistry; oil and gas; turtle; hydrocarbon; oil spill; environmental impact;

01447

Vargo, S.; Lutz, P.; Odell, D.; Van Vleet, E.S.; Bossart, G. 1986. Study of the effects of oil on marine turtles. Volume 3. Appendices. Report to Minerals Management Service, Reston, VA. Rep. No. OCS/MMS-86/0070-VOL-3. 127 p. Contract No. DI-14-12-0001-30063. NTIS order No. PB87-199949/XAB.

ABSTRACT: The objective of the study was to determine the effects of oil on marine turtles. An experimental program was carried out on 3-20 month old loggerhead and 3-16 month old green turtles to determine behavioral and physiological effects of oil using South Louisiana Crude Oil (SLCO) preweathered for 48 hrs. The behavioral experiments indicated that both species of marine turtles had a limited ability to avoid oil slicks, but experiments to determine avoidance/attraction to floating tar balls were inconclusive. The physiological experiments showed that the respiration, skin, some aspects of blood chemistry and composition, and salt gland function of 15-18 month old loggerhead sea turtles were significantly affected.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; continental shelf; biology; chemistry; oil and gas; turtle; hydrocarbon; oil spill; environmental impact;

01448

Vargo, S.; Lutz, P.; Odell, D.; Van Vleet, E.S.; Bossart, G. 1986. Study of the effects of oil on marine turtles. Volume 2. Technical report. Report to Minerals Management Service, Reston, VA. Rep. No. OCS/MMS-86/0070-VOL-2. 197 p. Contract No. DI-14-12-0001-30063. NTIS order No. PB87-199931/XAB.

ABSTRACT: The objective of the study was to determine the effects of oil on marine turtles. An experimental program was carried out on 3-20 month old loggerhead and 3-16 month old green turtles to determine behavioral and physiological effects of oil using South Louisiana Crude Oil (SLCO) preweathered for 48 hrs. The behavioral experiments indicated that both species of marine turtles had a limited ability to avoid oil slicks, but experiments to determine avoidance/attraction to floating tar balls were inconclusive. The physiological experiments showed that the respiration, skin, some aspects of blood chemistry and composition, and salt gland function of 15-18 month old loggerhead sea turtles were significantly affected. Spills in the vicinity of nesting beaches are of special concern.
KEYWORDS: Gulf of Mexico; Atlantic Ocean; continental shelf; biology; chemistry; oil and gas; turtle; hydrocarbon; oil spill; environmental impact;

01449

Vetter, R.D. 1982. Seasonal metabolic compensation in sympatric seatrout: adaptation to the estuary. Trans. Am. Fish. Soc. 111 (2):193-198.

ABSTRACT: The standard metabolic rates of spotted seatrout Cynoscion nebulosus and sand seatrout C. arenarius were compared at different seasonal temperatures. During early summer at 25 degree C, when spatial overlap of the 2 species in Texas estuaries is greatest, their metabolic rates were similar. At 15 degree C in winter, the metabolic rate of spotted seatrout was twice that of sand seatrout: 50 and 25 mg O sub(2) multiplied by kg super(-1) hour super(-1), respectively. At peak summer temperatures of 30 degree C, the metabolic rate of spotted seatrout was less than that of sand seatrout: 124 and 170 mg O(2)/kg/hr. Spotted seatrout are permanent residents of estuaries, but sand seatrout migrate out to the Gulf of Mexico in late summer and overwinter there. Greater metabolic compensation on the part of spotted seatrout may be an adaptation to year-round exploitation of the estuarine habitat, which has more extreme temperatures than offshore waters.
KEYWORDS: Texas; estuary; coastal waters; continental shelf; biology; fish; seatrout; ecology;

01450

Viada, S.T. 1980. Species composition and population levels of scleractinian corals within the Diploria-Montastrea-Porites zone of the East Flower Garden Bank, northwest Gulf of Mexico. M.S. thesis. Texas A&M University, College Station, TX. 96 p.

ABSTRACT: None
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; benthos; reef;

01451

Vittor (Barry A.) and Associates, Inc. 1985. Tuscaloosa Trend regional data search and synthesis study. Volume 1. Synthesis report. Vol. 2. Supplemental report. Report to the Minerals Management Service, New Orleans, LA. Vol. 1, MMS report No. 84-0056, 503 p. Vol. 2, MMS report No. 84-0057, 374 p. NTIS order Nos. PB86-245941 and PB86-245958.

ABSTRACT: The report identifies and summarizes important information pertaining to the environmental and socioeconomic characteristics of this area of the Gulf of Mexico. The geographic boundaries of the Trend area are defined by South Pass on the west and by a line from the head of the DeSoto Canyon and the boundary between Alabama and Florida on the east. Information on the natural resources of the Tuscaloosa Trend OCS (south-eastern Louisiana-Mississippi, and Alabama), from coastal marshes to a depth of 200 m, were collected, annotated, and synthesized.
KEYWORDS: Alabama; Louisiana; Mississippi; continental shelf; coastal waters; estuary; barrier island; beach; marsh; bibliography; biology; chemistry; geology; oil and gas; socioeconomics; physical; fisheries; archaeology;

01452

Vries, D.A. De; Chittenden, M.E., Jr. 1982. Spawning, age determination, longevity, and mortality of the silver seatrout, Cynoscion nothus, in the Gulf of Mexico. Fish. Bull. 80 (3):487-500.

ABSTRACT: Cynoscion nothus females from the Gulf of Mexico off Texas matured at 140-170 mm SL as they approached age I. Spawning occurred from early May through late October but primarily in two periods, May and August-September. Greatest spawning occurred in the August-September period when two distinct spawned groups (intrayear class cohorts) were produced. This species reached 130-190 mm SL at age I. Only one year class occurred or dominated in any one month, and only two year classes were ever present at once. The largest specimen captured was 190 mm SL, and 99% were <160 mm. The maximum life span (t sub(L)) was only 1-1.5 years off Texas but might be 2 years in the north-central gulf. The total annual mortality rate was best estimated at 99.83%. Larger C. nothus almost disappeared during winter.
KEYWORDS: Texas; coastal waters; biology; fish; seatrout;

01453

Vukovich, F.M. 1982. A comparison of surface temperatures from HCMM infrared data with field measurements. Report to U.S. National Aeronautics and Space Administration. NAS 1.26:169530, E83-10046. Contract No. NAS 5-26442. NTIS Order No. N83-14555/7.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; temperature; remote sensing;

01454

Vukovich, F.M.; Crissman, B.W.; Bushnell, M.; King, W.J. 1979. Some aspects of the oceanography of the Gulf of Mexico using satellite and in situ data. J. Geophys. Res. 84:7749-7768.

ABSTRACT: Satellite infrared data and in situ data were combined to study synoptic- scale and mesoscale fronts in the Gulf of Mexico in the period 1973-1977. Deep northward penetrations of the Loop Current were noted in the winter, and a major warm gyre developed in the winter, 1974. Other major warm gyres were seen to develop in the early spring (1974 and 1977). In all cases, a very large meander developed off the southern part of the west Florida shelf prior to the development of the major warm gyre. Smaller meanders were seen to move along the Loop Current boundary at an average speed of 28 km/day and with an average wavelength of 210 km.
KEYWORDS: Gulf of Mexico; Loop Current; physical; meteorology; eddy; remote sensing;

01455

Wagner, P.P. 1973. Seasonal biomass, abundance and distribution of estuarine dependent fishes in the Caminada Bay system of Louisiana. Ph.D. dissertation. Louisiana State University, Baton Rouge, LA. 166 p.

ABSTRACT: Seven separate stations within Caminada Bay, Louisiana were sampled over a 15 month period beginning in March, 1971 to monitor fish populations. Physical parameters recorded during the study period included depth, air and water temperature, tidal period and salinity. Captured specimens were counted, weighed and measured.
KEYWORDS: Louisiana; estuary; biology; fish; ecology;

01456

Walker, H.J.; Coleman, J.M.; Tye, R.S. 1987. Wetland loss in Louisiana. Geografiska Annaler 69A:189-200.

ABSTRACT: None
KEYWORDS: Louisiana; marsh; geology; erosion; dredging; sea level; environmental impact;

01457

Wallace, R.H.; Kraemer, T.F.; Taylor, R.E.; Wesselma, J.B. 1979. Assessment of geopressured-geothermal resources in the northern Gulf of Mexico, p. 132-163. In L.J.P. Muffler [ed.], Assessment of geothermal resources of the United States - 1978. U.S. Geological Survey, Circular 790. 163 p.

ABSTRACT: This report estimates the geopressured-geothermal energy contained in pore waters of sedimentary rocks to a depth of 22,500 ft (6.86 km) in the northern Gulf of Mexico basin, both onshore and offshore. The total thermal energy in waters of both sandstone and shale is estimated to be 107,000 x 10(18) J, of which 11,000 x 10(18) J is in sandstone and thus represents the amount from which initial production will be drawn. Assuming saturation of the water with methane, the total methane dissolved in water within sandstone and shale is 59,000 x 10(12) standard cubic feet. Of this, 5700 x 10(12) standard cubic feet, equivalent to 6000 x 10(18) J of thermal energy, is contained in water within sandstone. Application of the recoverability analysis presented by Papadopulos and others (1975) in USGS Circular 726 suggests that recoverable thermal energy ranges from 270 x 10(18) J under plan 3 (controlled development with limited pressure reduction and subsidence) to 2800 x 10(18) J under plan 2 (depletion of reservoir pressure). The energy equivalent of recoverable methane ranges from 158 x 10(18) J under plan 3 to 1640 x 10(18) J under plan 2. The electricity producible from this thermal energy at a conversion efficiency of 8 percent ranges from 23,000 MWe for 30yr under plan 3 to 240,000 MWe for 30 yr under plan 2. As in Circular 726, the dissolved methane is not considered to be used locally, and, accordingly, no electrical energy is calculated.
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi; coastal waters; geology; socioeconomics; oil and gas; methane;

01458

Wallcraft, A.J. 1984. Gulf of Mexico circulation modeling study. Annual progress report, Year 1. Report by JAYCOR to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. Contract No. 14-12-0001-30073. 106 p.

ABSTRACT: An accurate understanding of circulation patterns in the Gulf of Mexico is essential when predicting dispersal of pollutants or any other transportable contaminants. Conventional methods of obtaining circulation data are time consuming and costly. Computer simulations obviate some of the time and expense involved in characterizing or predicting oceanic circulation patterns. The Minerals Management Service sponsored a study to upgrade and test an existing computer model of Gulf of Mexico circulation patterns that will provide management personnel with quick and reliable simulations of particular circulation patterns in the absence of field collected data.
KEYWORDS: Gulf of Mexico; physical; current; Loop Current; model; eddy;

01459

Wallcraft, A.J. 1986. Gulf of Mexico circulation modeling study. Annual progress report, Year 2. Report by JAYCOR to the Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. MMS report No. 86-0027. Contract No. 14-12-0001-30073. 94 p. NTIS order No. PB87-107421.

ABSTRACT: An accurate understanding of circulation patterns in the Gulf of Mexico is essential when predicting dispersal of pollutants or any other transportable contaminants. Conventional methods of obtaining circulation data are time consuming and costly. Computer simulations obviate some of the time and expense involved in characterizing or predicting oceanic circulation patterns. The Minerals Management Service sponsored a study to upgrade and test an existing computer model of Gulf of Mexico circulation patterns that will provide management personnel with quick and reliable simulations of particular circulation patterns in the absence of field collected data.
KEYWORDS: Gulf of Mexico; physical; current; Loop Current; model; eddy;

01460

Waller, R.S. 1979. Pelagic, epibenthic, and infaunal invertebrates of Timbalier Bay and offshore environment, p. 529-536. In C.H. Ward, M.E. Bender, and D.J. Reish [ed.], The Offshore Ecology Investigation: Effects of oil drilling and production in a coastal environment. Rice University Studies, Vol. 65, Nos. 4 & 5. Houston, TX.

ABSTRACT: None
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; biology; oil and gas; benthos; environmental impact; Offshore Ecology Investigation;

01461

Walters, R.D.; Buffler, R.T. 1985. Seismic stratigraphy of Pliocene-Pleistocene deposits, continental slope upper Mississippi Fan, northern Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 69(2):315. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; sediment; stratigraphy;

01462

Ward, C.H.; Bender, M.E.; Reish, D.J. [ed.]. 1979. The Offshore Ecology Investigation. Effects of Oil Drilling and Production in a Coastal Environment. Rice Univ. Studies, Vol. 65, Nos. 4 and 5. Rice University, Houston, TX.

ABSTRACT: This is a report on a multidisciplinary field study consisting of eight seasonal, synoptic data acquisition efforts carried out in 1972-1974. It was carried out in Timbalier Bay and adjacent nearshore environments in an area of south Louisiana that had been subjected to more than 25 years of intensive oil and gas drilling and production. The program was to investigate the possible cumulative ecological effects of oil drilling and production on coastal and nearshore ecosystems. Scientific measurements were designed to provide the basis for identifying any cumulative effects present and for discriminating any variability of habitat or inhabitants according to whether they resulted from natural events or from drilling and production activities.
KEYWORDS: Louisiana; Timbalier Bay; estuary; coastal waters; oil and gas; biology; geology; chemistry; physical; environmental impact; Offshore Ecology Investigation;

01463

Ward, E.G. 1974. Ocean data gathering program, an overview. Shell Development Company.

ABSTRACT: The ocean data gathering program resulted in the collection of oceanographic and meteorological data at six offshore sites in the Gulf of Mexico from 1968-1971. The primary goal of the program was to obtain data on extreme conditions generated by severe hurricanes in the Gulf of Mexico. Parameters continuously recorded are wave amplitude, wind speed and direction, and barometric pressure.
KEYWORDS: Gulf of Mexico; physical; hurricane; wave; meteorology; wind;

01464

Ward, G.H., Jr. 1980. Hydrography and circulation processes of Gulf estuaries, p. 183-215. In P. Hamilton and K.B. Macdonald [ed.], Estuarine and wetland processes with emphasis on modeling. Plenum Press, New York.

ABSTRACT: Gulf estuaries (excluding the Mississippi) are lagoonal embayments, which, although possessing qualitative features common to most estuarine circulations, frequently exhibit these in extreme ranges or altered importance. These hydrographic features must be considered in developing or applying transport models (and, hence, water quality models) for these systems. In particular, the following factors are generally the most important to bay hydrography: meteorological forcing, tides, freshwater inflow, and density currents. The bays are sensitive to meteorological forcing, especially relative to the feeble tidal effects. Among the important meteorological influences are wind waves; large-scale, wind-driven gyres; and flushing resulting from frontal passages. Freshwater inflows are highly transient and are important in establishing salinity gradients. Insofar as general water-quality considerations are concerned, the density current affects the large-scale circulation and transport within the bay and is extremely important when the bay is transected by deepdraft ship channels (as are most of the Gulf estuaries). Mathematical water quality (including salinity) models usually parameterize the density-current transport by an inflated dispersion coefficient; however, this approach is poorly founded theoretically, and, for bays, can lead to large errors in the water quality predictions. Examples are presented to display the characteristics and significance of each of these factors, and available modelling techniques (both physical and mathematical) are appraised with respect to each.
KEYWORDS: Gulf of Mexico; estuary; physical; current; model;

01465

Ward, G.H., Jr. 1983. Observation of episodic sedimentation in a tidal inlet, Sabine Pass, Texas and Louisiana. Tex. J. Sci. 35(2):101-108.

ABSTRACT: Time variation in sedimentation was monitored with a recording tipping-bucket sampler in Sabine Pass, the inlet connecting Sabine Lake (on the Texas-Louisiana boundary) and the Gulf of Mexico. Observed sedimentation was episodic, characterized by events widely spaced in time. There was no apparent relation to astronomical tide, even at maximum declination. Sedimentation seemed to be dictated by hydrometeorological factors. The most intense sedimentation episode of the study period (Oct. and Nov. 1978) was associated with the most energetic frontal passage.
KEYWORDS: Texas; Louisiana; Sabine Pass; physical; geology; sedimentation; tide;

01466

Ward, G.H., Jr. 1985. Dye diffusion experience in the Texas bays: Low-wave conditions. J. Geophys. Res. 90(C3):4959-4968.

ABSTRACT: Measurements of diffusion from slug releases of fluorescent dye performed in the bays of Texas are compiled along with attendant hydrographic and hydrometeorological data. These data sets are confined to conditions of low surface wave activity to better expose the effects of local currents on diffusion. Development of a dye patch is parameterized in terms of a lateral diffusivity, which measures "turbulent" diffusion, and a longitudinal dispersion, which measures the effect of vertical shear in the current. The former is found to follow a local 4/3-power dependence upon scale and has a noisy correlation with current speed. The latter is found to be consistent with a theoretical model predicting a variation with the square of current speed and inverse variation with the squared Chezy coefficient. These data are considered to be generally representative of the shallow lagoon environment typical of Gulf of Mexico bays.
KEYWORDS: Texas; estuary; physical; current; wave; model;

01467

Ward, G.H., Jr.; Armstrong, N.E.; Matagorda Bay Project Teams. 1980. Matagorda Bay, Texas: Its hydrography, ecology, and fishery resources. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-81/52. 230 p.

ABSTRACT: This document is the final report for Phase I of a projected three-year study of Matagorda Bay. The purpose of Phase I was to assemble and compile available information on the ecology of this system. The report presents the results of the Phase I effort, including discussions of hydrography, waterborne constituents, fish and wildlife resources, vegetation, shellfish and finfish, and human perturbations.
KEYWORDS: Texas; estuary; Matagorda Bay; biology; chemistry; physical; ecology; fisheries; water quality;

01468

Wascom, M. 1980. Legal aspects of potential fishery resources of the northern Gulf, p. 74-76. In M. Flandorfer and L. Skuplen [ed.], Proceedings of a workshop for potential fishery resources of the northern Gulf of Mexico. March 4-5, New Orleans, LA. Mississippi-Alabama Sea Grant Consortium, report No. MASGP-80-012.

ABSTRACT: The legal aspects of developing a fish export industry in those underutilized species of fish found in the Gulf off the Louisiana coast have been studied. U.S. government programs that offer incentives are reviewed. One such program is the Export-Import Bank, generally known as Eximbank, which provides financing for U.S. exports. Eximbank programs offer credit to foreign buyers and provision of insurance to the U.S. exporters. An experimental export credit program is being offered by the Small Business Administration to allow eligible U.S. companies to borrow up to $500,000 for current expenses. Two other potential developments at the Federal level could aid in the development of a fish export industry in underutilized species of the Gulf. Both involve the Fishing Vessel Obligation Guarantee (FVOG) and Capital Construction Fund (CCF) programs of the National Marine Fisheries Service. Tax incentives also are available for companies engaged in exporting.
KEYWORDS: Louisiana; coastal waters; fisheries; fishery management; socioeconomics;

01469

Watkins, D.J.; Kraft, L.M. 1978. Stability of continental shelf and slope off Louisiana and Texas: geotechnical aspects, p. 267-286. In A.H. Bouma, G.T. Moore, and J.M. Coleman [ed.], Framework, facies, and oil trapping characteristics of the upper continental margin. Am. Assoc. Pet. Geol., Tulsa, OK.

ABSTRACT: Mudflows, faults, surface scarps, and other deformational features, which indicate that the seafloor may be experiencing continuous or intermittent movements, are present on the outer continental shelf and upper slope offshore Louisiana and Texas. Possible mechanisms causing instability and soil movement include hurricane waves, various forms of gravity-driven slope failure, and other geologic phenomena. The magnitude and rate of soil movements and the forces these movements transmit to structures must be estimated for design of offshore production facilities. Lateral forces on offshore structures due to soil movement can exceed 20 million Newtons (20,000 kN). A quantitative analysis of soil deformation and structural loading requires a comprehensive interdisciplinary study of the geologic and oceanographic environment. Analytic procedures to evaluate the stability of a site include finite-element analyses and limit-equilibrium methods. Data for these analyses should be based on well-planned geophysical and geotechnical site investigations and engineering laboratory testing.
KEYWORDS: Louisiana; Texas; continental shelf; continental slope; geology; physical; sediment; faulting; hazard;

01470
Watkins, J.S.; Schneider, L.; Hilterman, F. 1987. Seismic characteristics of Pleistocene glacial cycles near shelf edge, offshore Louisiana, Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 71(5):625. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; geology; glaciation;

01471
Watson, R.L.; Behrens, E.W. 1970. Nearshore surface currents, southeastern Texas Gulf Coast. Contrib. Mar. Sci. 15:133-143.

ABSTRACT: Thirteen monthly releases of drift bottles at 18 stations along the Texas Gulf Coast offshore from Mustang and Padre Islands indicate that the nearshore surface circulation in depths of eight fathoms and less is strongly influenced by the local wind circulation. During the summer months of strong southerly winds, the bottles drift to the north along the shoreline. In the winter months characterized by alternating northerly winds of frequent winter storms and the prevailing southerly winds, bottles drift either north or south along the shoreline depending on the winds active during and immediately preceding their drift at sea. Anomalous southerly drift often occurs during times of transition between winter and summer wind regimes.
KEYWORDS: Texas; coastal waters; physical; continental shelf; meteorology; current;

01472
Wax, C.; Borengasser, M.; Muller, R. 1978. Barataria Basin: Synoptic weather types and environmental responses.
SOURCE: Louisiana Sea Grant Pub. No. LSU-T-78-001. 60 p.

ABSTRACT: Synoptic weather types and their properties are discussed; water surpluses in Barataria Basin are calculated; and the relationships between basin climatology and environmental responses are analyzed.
KEYWORDS: Louisiana; estuary; marsh; Barataria Bay; physical; meteorology;

01473
Wax, C.L.; et al. 1977. Climatology, hydrology, and hydrography of the Vermilion Basin. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

ABSTRACT: A study of synoptic weather types, environmental responses and hydrologic and hydrographic processes of the Vermilion Basin.
KEYWORDS: Louisiana; estuary; Vermilion Bay; physical; meteorology; current; tide;

01474
Weaver, P. 1951. Continental shelf of Gulf of Mexico. Am. Assoc. Petrol. Geol. Bull. 35(2):393-398.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; geology;

01475
Webb, J.W.; Tanner, G.T.; Koerth, B.H. 1981. Oil spill effects on smooth cordgrass in Galveston Bay, Texas. Contrib. Mar. Sci. 24:107-114.

ABSTRACT: Observations of the effects of number 6 fuel oil spilled into coastal waters and washed into Spartina alterniflora marshes were made near Galveston, Texas. Aboveground biomass of some fringing marshes was completely removed in November as part of a clean up operation. However, regrowth the following spring occurred with no noticeable effects on the plants. Oil also entered a larger marsh area, partly covering some plants and completely covering others. The oil killed the aboveground portion of a plant only when oil covered most of the plant. Plants, regardless of the extent of oil coverage, produced new growth in the following spring that appeared to be similar to other S. alterniflora communities of the area.
KEYWORDS: Texas; Galveston Bay; estuary; biology; marsh; vegetation; oil and gas; oil spill; environmental impact;

01476
Weimer, P.; Buffler, R.T. 1986. Seismic definition of fan lobe types of Mississippi Fan, Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 70(5):662. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; sediment;

01477

Weimer, P.; Buffler, R.T. 1987. Seismic stratigraphic comparison of DSDP leg 96 results with older Mississippi Fan lobes, Gulf of Mexico. Am. Assoc. Pet. Geol. Bull. 71(5):626. (Abstract only).

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; stratigraphy; Deep Sea Drilling Project;

01478

Wells, F.C. 1980. Hydrology and water quality of the lower Mississippi River. U.S. Geological Survey, Louisiana District, Baton Rouge, LA. Water Resources Tech. Rep. No. 21.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River; physical; chemistry;

01479

Wells, F.C.; Demas, C.R. 1977. Hydrology and water quality of the Atchafalaya River basin. U.S. Geological Survey, Louisiana District, Baton Rouge, LA. Water Resources Tech. Rep. No. 14.

ABSTRACT: None
KEYWORDS: Louisiana; Atchafalaya River; physical; chemistry;

01480

Wells, F.C.; Demas, C.R. 1979. Benthic invertebrates of the lower Mississippi River. Water Resour. Bull. 15(6):1565-1577.

ABSTRACT: In 1976-77, benthic invertebrates were sampled at four sites in a 410-kilometer reach of the lower Mississippi River to define the communities in the river and to determine differences between communities upstream and downstream from the industrial and municipal complexes of Baton Rouge and New Orleans, Louisiana. The most common and most numerous organisms collected were Corbicula and tubificid worms. The benthic community structure of the lower Mississippi River is influenced by substrate type and salinity. Sampling stations near the left and right banks had low velocities, and substrate types ranged from medium silt to very fine sand. Burrowing organisms such as tubificids, chironomids, and ephemerid-type mayflies dominated these environments. At the center, left-center, and right-center stations, velocities were higher and substrate materials were coarser than at the bank stations; only Corbicula was present in large numbers. Near the river mouth, salinity and aquatic vegetation greatly affect the benthic community structure. Differences in benthic community structure in the Mississippi River are due primarily to different hydrologic conditions. Industrial and municipal waste discharged into the river appear to have little or no widespread effects on benthic populations.
KEYWORDS: Louisiana; Mississippi River; biology; benthos; ecology;

01481

Wells, J.T.; Peterson, C.H. 1987. Restless ribbons of sand. Atlantic and Gulf coastal barriers. Institute of Marine Sciences, University of North Carolina at Chapel Hill, Morehead City, NC. 21 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; Atlantic Ocean; barrier island; beach; geology; erosion; sedimentation; sea level;

01482

Wells, J.T.; Roberts, H.H. 1980. Fluid mud dynamics and shoreline stabilization: Louisiana Chenier Plain. Louisiana State University, Baton Rouge, LA. Coastal Studies Inst. Rep. No. TR-339. 23 p. Also p. 1382-1401 In Proceedings of the International Coastal Engineering Conference, Sydney, Australia, 23-28 Mar 1980. NTIS order No. AD-A111 497/4.

ABSTRACT: None
KEYWORDS: Louisiana; beach; geology; sediment transport; erosion;

01483

West, D.L. 1979. Hydrocarbons, sulfur, and acrolein in the marine ecosystem associated with offshore oil production. M.S. thesis. Univ of Houston, TX.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; environmental impact; Buccaneer Field;

01484

Wheeler, R.B. 1979. Environmental trace metal geochemistry of the Buccaneer oil and gas field. M.S. thesis. Rice University, Houston, TX.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; trace metal; environmental impact; Buccaneer Field;

01485

Wheeler, R.B.; Schwarzer, R.R.; Anderson, J.B. 1978. Assessment of environmental impact of offshore oil production in the Buccaneer oil field: sedimentologic and geochemical results, p. 285-290. In Proceedings, 10th Annual Offshore Technology Conference. Paper No. OTC-3082.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; geology; sediment; trace metal; environmental impact; Buccaneer Field;

01486

Whelan, J.K. 1986. Geochemistry summary - Leg 96 - the Mississippi Fan. 691-695. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi Fan; continental slope; geology; chemistry; sediment; mineralogy; hydrocarbon; organic carbon; Deep Sea Drilling Project;

01487

Whelan, T.; Coleman, J.M.; Roberts, H.H.; Suhayda, J.N. 1976. The occurrence of methane in recent deltaic sediments and its effect on soil stability. Bull. Int. Assoc. Eng. Geol. 14:55-64.

ABSTRACT: River-mouth depositional patterns are modified by sediment deforming processes of sufficient magnitude to severely endanger bottom-supported structures. Several types of deformations are present, including (a) peripheral slumping, (b) differential weighting and diapirism, (c) radial tensional faulting, (d) mass wasting and flowage induced by wave motion and degassing, and (e) deep-seated clay flowage. The processes of bacterial methane production and the resulting effects on sediment deformation have been investigated in four cores taken in the Recent deltaic sediments of the Mississippi River. Dissolved methane in the interstitial waters ranged in concentration from 2 x 10-3 to 1.7 ml/l, whereas total CH4 (dissolved plus bubble phase) ranged from 5 x 10-3 to over 300 ml/l. High concentrations of methane corresponded to zones of low shear strength and were observed where dissolved sulfate was depleted. Calculations of maximum in situ methane concentrations, based on chemical reduction of excess total CO2, indicate that methane could be present above saturation levels (bubble phase). Classical anaerobic geochemical gradients were observed in sediment profiles where no movement had previously occurred. The pore water geochemistry of sediment profiles within peripheral mudflows suggests that coexistence of methane and sulfate indicate convective mixing of sediments and bottom seawater. Calculations using the equilibrium slopes of wave-induced mudflows indicate that shear strengths during movement must be less than the values measured before or after the flow. An improved model of mass movement is presented which relates the physical and geochemical properties of unstable sediments.
KEYWORDS: Louisiana; Mississippi River; continental shelf; geology; chemistry; sedimentation; sediment; methane; hazard;

01488

Whelan, T.; Coleman, J.M.; Suhayda, J.N.; Garrison, L.E. 1975. The geochemistry of recent Mississippi River Delta sediments: gas concentration and sediment stability, p. 71-84. In Proceedings, 7th Annual Offshore Technology Conference, May 5-8, 1975, Houston, TX. Paper No. OTC-2342.

ABSTRACT: River-mouth depositional patterns are modified by sediment-deforming processes of sufficient magnitude to severely endanger bottom-supported structures. Several types of deformations are present, including (a) peripheral slumping, (b) differential weighting and diapirism, (c) radial tensional faulting, (d) mass wasting and flowage induced by wave motion and degassing, and (e) deep-seated clay flowage. The processes of bacterial methane production and the resulting effects on sediment deformation have been investigated in four cores taken in the Recent deltaic sediments of the Mississippi River. Dissolved methane in the interstitial waters ranged in concentration for 0.002 to 1.7 ml/l. High concentrations of methane corresponded to zones of low shear strength and were observed where dissolved sulfate was depleted. Calculations of maximum in situ methane concentrations, based on chemical reduction of excess total CO2, indicate that methane could be present above saturation levels (bubble phase). Classical anaerobic geochemical gradients were observed in sediment profiles where no movement has previously occurred. The pore water geochemistry of sediment profiles within peripheral mudflows suggest that the coexistence of methane and sulfate indicate convective mixing of sediments and bottom seawater. Calculation using the equilibrium slopes of wave-induced mudflows indicate that shear strengths during movement must be less that the values measured before or after the flow. An improved model of mass movement is presented which relates the physical and geochemical properties of unstable sediments.
KEYWORDS: Louisiana; Mississippi River Delta; coastal waters; continental shelf; geology; chemistry; methane; hazard; submarine landslide;

01489

Whitaker, R.E. 1971. Seasonal variations of steric and recorded sea level of the Gulf of Mexico. M.S. thesis. Texas A&M University, College Station, TX.

ABSTRACT: Monthly mean steric sea levels (geopotential) relative to 150 db are computed for the Gulf of Mexico from monthly mean temperature fields and a constant salinity, 36.30 ppt. The temperature distributions for the upper 150 m of the Gulf are determined from some 17,000 BT observations. The monthly topographies of the 22 degrees C surface, which are roughly expanded mirror images of sea-surface geopotential relative to a deep reference pressure, exhibit a set of regular annual changes. The Loop Current and its seasonal variation and the western high-pressure region are clearly indicated.
KEYWORDS: Gulf of Mexico; physical; continental slope; deep sea; current; temperature; salinity; sea level; model;

01490

White, C.J. 1975. Effects of 1973 river flood waters on brown shrimp in Louisiana estuaries. Louisiana Wildlife and Fisheries Commission, Tech. Bull. No. 16. 24 p.

ABSTRACT: Brown shrimp data depicting larval occurrence, juvenile density and growth are presented for 1970 to 1973 during the period of January through June. Comparisons are made of brown shrimp populations occurring during periods of normal hydrological conditions and during flood conditions. The effects of a major flood upon survival, growth and production are discussed.
KEYWORDS: Louisiana; coastal waters; estuary; biology; shrimp; ecology;

01491

White, C.J.; Boudreaux, C.J. 1977. Development of an areal management concept for Gulf penaeid shrimp. Louisiana Wildlife and Fisheries Commission, Tech. Bull. No. 22.

ABSTRACT: This report presents information on occurrence, growth and movements of penaeid shrimp in Louisiana estuarine waters. Sampling was accomplished with a plankton net and otter trawl. Water parameters were also monitored at each station. Sample collection began in July, 1972 and lasted three years.
KEYWORDS: Louisiana; estuary; biology; shrimp; fisheries; fishery management;

01492

White, D.A. 1973. Productivity and decomposition of the dominant salt marsh plant species in Louisiana. Master's Thesis. Tulane University, New Orleans, LA.

ABSTRACT: None
KEYWORDS: Louisiana; coastal waters; marsh; biology; primary production; flora;

01493

White, M.E.; Kitting, C.L.; Powell, E.N. 1985. Aspects of reproduction, larval development, and morphometrics in the pyramidellid Boonea impressa (= Odostomia impressa) (Gastropoda: Opisthobranchia). Veliger 28(1):37-51.

ABSTRACT: Boonea impressa is an important ectoparasite of the American oyster, Crassostrea virginica. Here, the reproductive and larval life history, intraspecific variation in certain shell characters, and the internal anatomy of the feeding apparatus are described for populations of B. impressa from the western Gulf of Mexico (Texas) and, for the latter two subjects, the western Atlantic (North Carolina).
KEYWORDS: Texas; biology; oyster; taxonomy;

01494

White, W.A., T.R. Calnan, R.A. Morton, R.S. Kimble, T.G. Littleton, J.H. McGowen, H.S. Nance, and K.E. Schmedes. 1983. Submerged lands of Texas, Corpus Christi area. Bureau of Economic Geology, Univ. Texas at Austin.

ABSTRACT: Surface sediment textures, sediment geochemistry, and benthic fauna of the State-owned submerged lands in the Corpus Christi area were mapped and described using bottom samples collected at 1-mile (1.6-km) intervals from bays and estuaries and from the inner continental shelf. In addition, the distribution of wetlands in adjacent areas was mapped using color-infrared photographs.
KEYWORDS: Texas; estuary; coastal waters; marsh; biology; chemistry; geology; benthos; ecology; trace metal; sediment; sediment texture; remote sensing;

01495

White, W.A., T.R. Calnan, R.A. Morton, R.S. Kimble, T.G. Littleton, J.H. McGowen, H.S. Nance, and K.E. Schmedes. 1985. Submerged lands of Texas, Galveston-Houston area. Bureau of Economic Geology, Univ. Texas at Austin. 145 p. + maps.

ABSTRACT: Surface sediment textures, sediment geochemistry, and benthic fauna of the State-owned submerged lands in the Galveston-Houston area were mapped and described using bottom samples collected at 1-mile (1.6-km) intervals from bays and estuaries and from the inner continental shelf. In addition, the distribution of wetlands in adjacent areas was mapped using color-infrared photographs taken in 1979.
KEYWORDS: Texas; estuary; coastal waters; marsh; biology; chemistry; geology; benthos; ecology; trace metal; sediment; sediment texture; remote sensing;

01496

White, W.A., T.R. Calnan, R.A. Morton, R.S. Kimble, T.G. Littleton, J.H. McGowen, H.S. Nance, and K.E. Schmedes. 1986. Submerged lands of Texas, Brownsville-Harlingen area. Bureau of Economic Geology, Univ. Texas at Austin.

ABSTRACT: Surface sediment textures, sediment geochemistry, and benthic fauna of the State-owned submerged lands in the Brownsville-Harlingen area were mapped and described using bottom samples collected at 1-mile (1.6-km) intervals from bays and estuaries and from the inner continental shelf. In addition, the distribution of wetlands in adjacent areas was mapped using color-infrared photographs.
KEYWORDS: Texas; estuary; coastal waters; marsh; biology; chemistry; geology; benthos; ecology; trace metal; sediment; sediment texture; remote sensing;

01497

White, W.A., T.R. Calnan, R.A. Morton, R.S. Kimble, T.G. Littleton, J.H. McGowen, and H.S. Nance. 1987. Submerged lands of Texas, Beaumont-Port Arthur area. Bureau of Economic Geology, Univ. Texas at Austin. 110 p. + maps.

ABSTRACT: Surface sediment textures, sediment geochemistry, and benthic fauna of the State-owned submerged lands in the Beaumont-Port Arthur area were mapped and described using bottom samples collected at 1-mile (1.6-km) intervals from bays and estuaries and from the inner continental shelf. In addition, the distribution of wetlands in adjacent areas was mapped using color-infrared photographs taken in 1978.
KEYWORDS: Texas; estuary; coastal waters; marsh; biology; chemistry; geology; benthos; ecology; trace metal; sediment; sediment texture; remote sensing;

01498

Wicker, K.M. 1980. Mississippi Deltaic Plain regional ecological characterization: a habitat mapping study. A user's guide to the habitat maps. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-79/07. 45 p.

ABSTRACT: The Mississippi Deltaic Plain Region habitat mapping project identifies and measures habitats in the study area and illustrates change over a given period of time. Two sets of habitat maps, one for the mid-1950s and one for the late 1970s, were constructed and the habitat areas for each period were measured using an electronic digitizer (Numonics 1224). The habitat areas for each time period were tabulated by county/parish, state, and hydrologic unit in order to facilitate comparisons of habitat area change in these regional units.
KEYWORDS: Louisiana; Mississippi; Mississippi River Delta; biology; geology; remote sensing;

01499

Wicker, K.M.; et al. 1980. The Mississippi Deltaic Plain regional habitat mapping study. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, DC. FWS/OBS-79/07. 464 maps.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River Delta; estuary; barrier island; marsh; coastal waters; biology; geology; remote sensing;

01500

Wiese, J.D.; Slitor, D.L.; McCord, C.A. 1983. Gulf of Mexico summary report: outer continental shelf oil and gas activities in the Gulf of Mexico and their onshore impacts. Minerals Management Service, Gulf of Mexico OCS Regional Office, Metairie, LA. 106 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; continental shelf; geology; oil and gas; environmental impact;

01501

Wiesenburg, D.A.; Bodennec, G.; Brooks, J.M. 1981. Volatile liquid hydrocarbons around a production platform in the northwest Gulf of Mexico. Bull. Environ. Contam. Toxicol. 27:167-174.

ABSTRACT: None
KEYWORDS: Texas; continental shelf; oil and gas; chemistry; hydrocarbon; petroleum platform; Buccaneer Field;

01502

Wiesenburg, D.A.; Brooks, J.M.; Bernard, B.B. 1985. Biogenic hydrocarbon gases and sulfate reduction in the Orca Basin Louisiana brine. Geochim. Cosmochim. Acta 49(10):2069-2080.

ABSTRACT: The composition of light hydrocarbon gases in the Orca Basin, an anoxic, hypersaline intraslope depression on the continental slope of the northern Gulf of Mexico, indicates that both methane and ethane and biogenic in nature with a C1/(C2 + C3) ratio of 730 and delta-13C of methane of -73.permill. relative to the PDB standard. The concentration of methane (750 mM) and ethane (1300 mM) in the Orca Basin brine are higher than any other marine anoxic basin. These high levels result not from high rates of productivity, but from the long residence time of the brine in the basin, due to its high stability toward mixing with overlying seawater (.DELTA.sigma.t/.DELTA.Z = 3.2/m). Both methane and ethane show well mixed distributions in the brine. These distributions probably result from convective mixing of the isohaline brine pool due to normal heat flow from the basin sediments. Methane and ethane maxima above the pycnocline at the brine/seawater interface reflect in situ production and/or consumption in the aerobic water column. Concurrent maxima in suspended particulate material distributions in this region suggest methane may be produced there in anaerobic microenvironments associated with the suspended matter. Reduced rates of anaerobic decomposition (including sulfate reduction) in the brine sediments are inferred from preserved Sargassum fronds in the sediments, vertical sulfate profiles in most cores, and the sediment organic carbon content which is two to three times higher in sediments below the high salinity brine than in the normal Gulf sediments nearby.
KEYWORDS: Louisiana; continental slope; chemistry; hydrocarbon; methane; sediment; organic carbon;

01503

Wiesenburg, D.A.; Brooks, J.M.; Burke, R.A., Jr. 1982. Gaseous hydrocarbons around an active offshore gas and oil field. Environ. Sci. Technol. 16:278-282.

ABSTRACT: Low molecular weight hydrocarbons (LMWHs, C_1-C_4) were measured from the water column and sediments around an oil and gas field. No significant differences in mean methane levels were observed between platforms that were and were not discharging brine. However, in the 20-station grid, the relative standard deviations were greater and the highest individual methane and ethane concentrations were found in surface waters near the platform discharging brine. Higher methane values at all depths observed during summer coinciding with decreased ethane/ethene ratios in a near-bottom nepheloid layer provided direct evidence of in situ biological production associated with increases in zooplankton and bacterial biomass in the water column. The sediment LMWHs are predominantly of thermogenic origin probably due to seepage from the subsurface, as evidenced by high levels of methane and elevated ethane/ethene ratios. The LMWH input from brine discharge in the field is estimated at 283 g/day.
KEYWORDS: Texas; continental shelf; chemistry; oil and gas; hydrocarbon; Buccaneer Field;

01504

Wilder, W.R. 1987. An electrophoretic analysis of Texas Gulf coast red drum (Sciaenops ocellata): identification of possible stocks and implications for fisheries management. Ph.D. dissertation. Rice University, Houston, TX. 132 p. (Diss. Abs. 48/05-B:1240).

ABSTRACT: Red drum (Sciaenops ocellata) from seven of the nine major embayments of the Texas Gulf Coast were electrophoretically analyzed for genetic variability. Indices of genetic similarity and distance were derived, as well as estimates of genetic divergence between bays. Cluster analysis phenograms were developed, and possible causes for population structure were addressed. Forty presumptive loci were screened, of which 30 proved to be of value for genetic population analysis. Percent polymorphic loci and heterozygosity/locus/individual ranged from 6.7%-13.3% and 0.025-0.042 respectively. These values were lower than those reported in similar studies, including some dealing specifically with Sciaenidae, but remained within the range reported for teleosts in general. A total of thirteen tests of genetic similarity/distance were performed. Of these tests, no segregation below a genetic identity of 0.95 was detected in those samples large enough to statistically satisfy the analysis. Upon exclusion of the small samples, no differentiation below 0.97 was demonstrated. Contingency chi-square tests and F-Statistics found only extremely low levels of divergence. Indeed, none of the divergence indicated was significant in terms of distinction of subpopulations among bays. This lack of differentiation in spite of apparently low levels of interbay migration was explained as a function of the dichotomus life stages. While juveniles are geographically isolated, adults occupy the open waters of the Gulf of Mexico, and have yet to be thoroughly described from either a life history or reproductive strategy viewpoint. The indicated single stock of reproductively active red drum in the Gulf requires further investigation, in order to accurately determine migrational habits as well as breeding success. The implications for management of the fishery at present are to regulate the resource as a single stock; as well as institute a comprehensive physical and biochemical study for future policy formulation.
KEYWORDS: Texas; estuary; biology; fish; genetics; drum;

01505

Wilhelm, O.; Ewing, M. 1972. Geology and history of the Gulf of Mexico. Geol. Soc. Am. Bull. 83:575-600.

ABSTRACT: The principal aim of this study has been directed toward a comprehensive interpretation of the historical development of the Gulf of Mexico. The initial stage was analysis and correlation of seismic profiler records obtained over a considerable period, followed by an endeavor to correlate the results with the surface ecology of the land areas surrounding the Gulf. Indication of simatic oceanic crust beneath the abyssal Gulf has led to the assumption that it had been a permanent ocean basin. A concept developed in this study proposes that the simatic crust was formed in late Paleozoic time. Subsequent environmental conditions remained epicontinental-including the environment of Jurassic salt deposition. Proceeding from this viewpoint, the origin of the Gulf of Mexico is proposed to be related to the extensive regional subsidence of more than 10,000 ft during Cretaceous time, and its isolation came about by the continuous contemporaneous carbonate growth of the Florida and Yucatan platforms. Minimum rates of sediment deposition, compared to the rate of platform growth, led to consistent deepening which accordingly, must be underlain by a thin Cretaceous section. Hypothetically, the Straits of Florida and the Yucatan Channel originated from erosion at the front of the Laramide tectogene when carbonate growth was halted, following the inundation by seaways. The Gulf of Mexico had been reduced to its present size by the invasion from the north and southwest of the huge Cenozoic mass of deposits-referred to as the Gulf Coast geosyncline. The last major volume of clastic sediments was deposited on the Mississippi cone as early Holocene time. However, the latest deposits from the Mississippi and other rivers were laid down on the continental shelves and a minimum of terrigenous material has been reaching the abyssal Gulf by turbidity currents.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; deep sea; geology; geologic history; stratigraphy;

01506
Williams, D.F.; Kohl, B. 1986. Isotope chronostratigraphy and carbonate record for Quaternary Site 619, Pigmy Basin, Louisiana continental slope, p. 671-676. In K.L. Turner [ed.], Initial Reports of the Deep Sea Drilling Project, Volume 96. Government Printing Office, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; continental slope; geology; chemistry; stratigraphy; sediment; stable isotope; Deep Sea Drilling Project;

01507
Williams, G.N.; Hann, R.W., Jr.; James, W.D. 1975. Predicting the fate of oil in the marine environment. In Proceedings of the 1975 Conference on the Prevention and Control of Oil Pollution, March 25, San Francisco, CA.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; coastal waters; continental shelf; oil and gas; oil spill;

01508
Wilson, B.W. 1957. Hurricane wave statistics for the Gulf of Mexico. Dept. of Oceanography, Texas A&M Univ. Ref. No. 57-10F.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; meteorology; hurricane;

01509
Wilson, W.B.; Ray, S.M. 1956. The occurrence of Gymnodinium brevis in the western Gulf of Mexico. Ecology 37(2):388.

ABSTRACT: Seawater samples collected from the western Gulf of Mexico between the Rio Grande and a point 10 miles north of Port Isabel contained Gymnodinium brevis. Concentrations ranged from 50 to 500 cells/ml. A fish kill was observed along the coast, south of the Rio Grande, for about 120 miles.
KEYWORDS: Texas; coastal waters; continental shelf; biology; plankton;

01510
Wilson, W.B.; Ray, S.M. 1956. The occurrence of Gymnodinium brevis in the western Gulf of Mexico. Ecology 37:388.

ABSTRACT: None
KEYWORDS: Texas; biology; plankton; ecology; taxonomy;

01511
Wiseman, W.J.; Bane, J.M.; Murray, S.P.; Tubman, M.W. 1976. Small scale temperature and salinity structure over the inner shelf west of the Mississippi River Delta. Mem. Soc. R. Sci. Liege 6(10):277-285.

ABSTRACT: More than 400 STD profiles collected during a single year immediately west of the Mississippi River Delta were used to determine the fate of the effluent plume from Southwest Pass. The dominant surface drift pattern within the plume is anticyclonic (westward and toward the coast). Vertically, the plume mixes intermittently with ambient coastal water, and a series of steps in the temperature and salinity profiles is produced.
KEYWORDS: Louisiana; Mississippi River; Southwest Pass; coastal waters; continental shelf; physical; chemistry; temperature; salinity;

01512
Wiseman, W.J.; Murray, S.P.; Bane, J.M.; Tubman, M.W. 1982. Temperature and salinity variability within the Louisiana Bight. Contrib. Mar. Sci. 25:109-120.

ABSTRACT: Waters from three different sources, with identifiable temperature and salinity characteristics, appear to mix locally to form the waters of the Louisiana Bight. The seasonal variations of the characteristics of these source waters are described and related to meteorological and riverine forcing. Strong stratification caused by Mississippi River runoff isolates the surface layers from the deeper waters and the latter from air-sea interaction. Winter cold fronts force internal near-inertial oscillations, which affect the breakdown of the Mississippi plume.
KEYWORDS: Louisiana; Mississippi River; coastal waters; continental shelf; chemistry; physical; salinity; temperature;

01513

Wiseman, W.J.; Murray, S.P.; Bane, J.M.; Tubman, M.W.; Chuang, W.S. 1983. Collection of reprints (Temperature and salinity variability within the Louisiana Bight. Summer current observations off the Alabama coast. Sediment transport on the central Louisiana continental shelf: implications for the developing Atchafalaya River Delta. Coastal sea level response to frontal passages on the Louisiana-Texas shelf. Lagoon sediment transport: the significant effect of Callianassa bioturbation). Louisiana State University, Coastal Studies Institute, Baton Rouge. Includes technical rept. Nos. TR-376, TR-377, TR-378, TR-379, and TR-380. 69 p. NTIS order No. AD-A137 440/4.

ABSTRACT: None
KEYWORDS: Louisiana; Texas; Alabama; Atchafalaya River Delta; coastal waters; continental shelf; chemistry; physical; biology; geology; temperature; salinity; current; sediment transport; sea level; shrimp;

01514

Wiseman, W.J.; Rouse, L.J.; Huh, O.K. 1978. Mixed layer models for coastal waters, p. 2619-2632. In Proceedings of the 16th Coastal Engineering Conference, August 28-September 1, 1978, Hamburg, West Germany. American Society of Civil Engineers.

ABSTRACT: The applicability of oceanic mixed-layer models to the case of wind mixing in a coastal region dominated by river runoff is explored. Two-dimensional effects and the propagation of internal-inertial waves out of the mixed layer are seen to be extremely important. Modification of the boundary conditions changes the appearance of the solutions as well. Further field work will be necessary to determine if additional terms, ignored in the oceanic models, might become important in the coastal region.
KEYWORDS: Louisiana; physical; model; wind; wave;

01515

Wiseman, W.J., Jr.; Turner, R.E.; Kelly, F.J.; Rouse, L.J., Jr.; Shaw, R.F. 1986. Analysis of biological and chemical associations near a turbid coastal front during winter 1982. Contrib. Mar. Sci. 29:141-151.

ABSTRACT: An intense front separates the waters of the nearshore region from those of the Louisiana inner shelf. Horizontal salinity gradients often exceed 0.25 ppt/km. Data from hydrographic cruises and moored instruments are used to characterize the variability in and around the front during winter/spring, when the structure is most changeable. A modified empirical orthogonal function analysis explains 88% of the data variability with three basic patterns: (1) high nitrate and silicate concentrations are strongly associated with the low-salinity nearshore waters; (2) an association between high chlorophyll a concentration and low temperature reflects, we believe, both parameters' relationship with turbid shallow depths rather than a direct interaction; (3) coincidental high ammonia and zooplankton concentrations are, presumably, due to excretion. In contrast to oceanic fronts, these shelf fronts do not lead to regional boundary zones of increased biologic activity.
KEYWORDS: Louisiana; physical; biology; continental shelf; chlorophyll; nutrient; zooplankton; salinity; nepheloid; turbidity; temperature; water quality;

01516

Wiseman, W.J.; Wright, L.D.; Rouse, L.J.; Coleman, J.M. 1976. Periodic phenomena at the mouth of the Mississippi River. Contrib. Mar. Sci. 20:11-32.

ABSTRACT: Time series of temperature fluctuations, as well as aerial and satellite imagery, indicate the presence of periodic phenomena within the effluent from South Pass, Mississippi River Delta. Time scales on the order of 1 min and 15 min recur in both remotely sensed and in situ data, a fact which suggests that the same phenomenon is being measured. Vertical coherence estimates indicate this to be internal wave motion. Estimates of gross Richardson numbers are near critical; instabilities in the wave field are a possible mechanism for entrainment, but cannot account for all the required entrainment.
KEYWORDS: Louisiana; Mississippi River; South Pass; coastal waters; physical; temperature; remote sensing; wave;

01517

Wissing, T.E.; Darnell, R.M.; Ibrahim, M.A.; Berner, L. 1973. Caloric values of marine animals from the Gulf of Mexico. Contrib. Mar. Sci. 17:1-7.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; biology; fish; plankton;

01518

Wood, E.J.F. 1963. A study of the diatom flora of fresh sediments of the south Texas bays and adjacent waters. Publ. Inst. Mar. Sci. Univ. Tex. 9:237-310.

ABSTRACT: This paper gives a list, with illustrations and short descriptions, of the principal diatoms found in surface sediments of the Texas bays from Port Isabel to Galveston. From annotation on occurrences in collections made in the summer of 1961, it will be seen that the synoptic diatom flora changes in some respects in the different bays and also differs from that of more easterly Gulf ports. Some 252 diatom species are listed, of which some appear to be new.
KEYWORDS: Texas; estuary; coastal waters; biology; flora; sediment;

01519

Woodbury, H.O. 1977. Movement of sediment on the Gulf of Mexico, continental slope and upper continental shelf. In Marine Geotechnology, Vol. 2. Marine Slope Stability.

ABSTRACT: Grain size, coarse fraction analyses, and depositional environment as interpreted from microfauna are related to the character of sparker reflections at the location of core holes drilled by Exxon, Chevron, Gulf, and Mobil on the continental slope of the northern Gulf of Mexico. Continuous sparker reflections are correlated with slowly deposited, evenly bedded sediments containing bathyal faunas. The coarse fraction is dominated by the tests of foraminifera. Discontinuous, discordant reflections and diffractions are correlated with sediments more rapidly emplaced in the bathyal environment of the continental slope by slumping and sliding from the continental shelf. Their coarse fraction is dominated by terrigenous sand grains. A large portion of the volume of continental slope sediments appears to consist of these "displaced" sediments, including an area 3-24 km wide and 80 km long, southeast of Corpus Christi, Texas. Comparable processes of movement of sediments are interpreted on the continental shelf south of the Southwest Pass of the Mississippi River. Bathymetry in this area is characterized by a series of subaqueous "gullies" radiating from the river mouth and leading to terraces at their southern extremities. Side-scan sonar and PDR surveys show a rough bottom in these "gullies" and terraces, as contrasted with a relatively smooth bottom elsewhere. The rough bottom in interpreted as indicative of slump and creep of the sediments from shallower water. Some foundation soil borings in this area south of Southwest Pass find a low-strength material gradually increasing in strength with depth. Other borings find a "crust" of anomalously strong material 8-15 m below the mudline. The microfauna recovered from the "crust" has moved to its present position by slump or creep from shallower water along a pattern comparable to the gullies shown in the present-day bathymetry.
KEYWORDS: Louisiana; Southwest Pass; Texas; continental shelf; continental slope; geology; sediment; sediment texture; sediment transport;

01520

Worzel, J.L.; Watkins, J.S. 1973. Evolution of northern Gulf Coast deduced from geophysical data. Trans. Gulf Coast Assoc. Geol. Soc. 23:84-91.

ABSTRACT: Seismic refraction data from the western part of the northern Gulf Coast of the United States indicate that the uppermost crust of the Gulf region consists of a thick sequence of sedimentary rocks with thicknesses locally ranging up to 17 km. Beneath the sedimentary sequence a layer with velocities ranging from 5.2 to 6.0 km/sec probably consists of high velocity sedimentary rocks comprised mainly of evaporites and carbonates. The combined thickness of the sedimentary sequence and the 5.2-6.0 km/sec layer is between 15 and 20 km. The igneous and metamorphic continental crust has a velocity of 5.8-6.0 km/sec, and is 12-20 km thick beneath the interior of the coastal plain. It thins seaward and disappears beneath the shelf. The lower crust is 15-20 km thick beneath the coastal plain, has a velocity of 6.45-6.9 km/sec and grades into normal oceanic crust somewhere beneath the shelf or slope. From all available data, we have constructed three profiles from the north Gulf Coastal Plain to the Sigsbee deep. From these profiles, making what we consider reasonable interpolations where data is sparse or missing, we have derived structure cross sections of the former Gulf Coast at the end of Cretaceous, Oligocene and Pliocene. Our reconstructions are based on the assumption that the region has remained closely in isostatic equilibrium as it is today. We have thus arrived at a first order approximation to the post-Mesozoic evolution of the Gulf Coast geosyncline, the continental shelf and the transition from continental crust to oceanic crust at this continental margin.
KEYWORDS: Gulf of Mexico; continental shelf; continental slope; geology; geologic history;

01521

Wright, L.D. 1970. Circulation, effluent diffusion, and sediment transport, mouth of South Pass, Mississippi River Delta. Louisiana State University Press, Coastal Studies Series No. 26. Baton Rouge, LA.

ABSTRACT: This study was conducted at the mouth of South Pass, Mississippi River, to ascertain the influence exerted by interaction between effluent and ambient fluids, tides, waves, winds, bottom topography and channel mouth geometry, regional coastal currents, horizontal and vertical density gradients, and hydrologic regime of the Mississippi River. Samples were collected between February, 1969 and March, 1970.
KEYWORDS: Louisiana; Mississippi River; South Pass; coastal waters; physical; current; tide; wave; wind;

01522

Wright, L.D. 1971. Hydrography of South Pass, Mississippi River, p. 491-504. In Journal of the Waterways, Harbors and Coastal Engineering Division. American Society of Civil Engineers Volume 97(ww3): Proc. Paper 8290.

ABSTRACT: This paper is based on field observations and analyses made over the period February, 1969-March, 1970. The field program consisted primarily of measurements of current velocity and direction, and water salinity and temperature. A Marine Advisers Roberts -type Model B-3c current meter was used to determine current velocity and direction. Water salinity and temperature were measured in the field. In the South Pass channel, current velocity and direction were measured at the surface and at 5-foot depth intervals. Salinity and temperature were measured at depth intervals of 1 foot.
KEYWORDS: Louisiana; Mississippi River; South Pass; coastal waters; physical; current; salinity; temperature;

01523

Wright, L.D.; Coleman, J.M. 1975. Mississippi River mouth processes, effluent dynamics and morphologic development. J. Geol. 82:751-778.

ABSTRACT: None
KEYWORDS: Louisiana; Mississippi River; geology; physical;

01524

Wright, L.D.; Coleman, J.M.; Suhayda, J.N. 1973. Periodicities in interfacial mixing. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA. Bull. No. 7:127-135.

ABSTRACT: Freshwater effluents from river outlets spread and diffuse into ambient marine water; the interactions which take place between these water masses at and immediately seaward of the river mouth are critical in controlling the dissemination of sediment and water transported by the river. Mixing between these water masses, each characterized by differing properties, takes place in many ways and is affected by various mechanisms. These mechanisms control the outflow patterns and hence fundamentally determine the pattern of sediment dissemination, accumulation, and distribution of the bars that form at river mouths. Thus greater understanding of the behavior of the effluent plume would significantly aid charting navigation, and similar operations in these constantly changing areas of strategic importance. In addition, several types of density gradients occur between the water masses which drastically affect acoustical transmission and reflections in various search operations, swimmer defense techniques, and mining operations. If the density contrasts are understood, they can be favorably utilized as an acoustical barrier for hiding or to provide safe upstream penetration for swimmers. This paper utilizes various remote-sensing techniques to analyze the behavior of the river plume under varying conditions.
KEYWORDS: Louisiana; Mississippi River; South Pass; physical; remote sensing;

01525

Yamamoto, T. 1981. Wave-induced pore pressures and effective stresses in inhomogeneous seabed foundations. Ocean Eng. 8(1):1-16.

ABSTRACT: Stability analyses of homogeneous and inhomogeneous seabed foundations under attack by storm waves are made by calculating the wave-induced effective stresses. Effective stresses in inhomogeneous seabeds induced by waves are calculated by approximating an inhomogeneous bed by many layers of homogeneous soils each of which has different geotechnical soil properties. A good agreement is obtained between the theory and the pore pressure data from in situ field measurements. For a given wavelength, it is found that there exists a most unstable thickness of homogeneous seabed when the seabed thickness is one-fifth of the wave length. As a realistic example of an inhomogeneous bed, the effective stresses in a typical seabed formation at the Mississippi Delta area of the Gulf of Mexico under the attack of design storm waves are calculated. The numerical results indicate that the storm waves induce a continuous submarine landslide which extends as deep as 9 m from the mud line. Numerical calculations also indicate that such landslides and liquefaction of seabeds can be prevented by placing a layer of concrete blocks or rubble on top of the seabeds.
KEYWORDS: Gulf of Mexico; Louisiana; Mississippi River Delta; physical; geology; wave; submarine landslide; hazard;

01526

Yamazaki, H.; Herbich, J.B. 1985. Monthly wave characteristics, December 1979-May 1982. Texas A&M Univ., Sea Grant Program. Rep. No. TAMU-SG-86-205. 3 vol.

ABSTRACT: The Data Office of the National Oceanic and Atmospheric Administration deployed a number of buoys around the U.S. coast. Monthly wave characteristics are summarized for the data, as well as air temperature and the Statistical Analysis System (SAS, 1979) was employed to perform the monthly statistical summaries. The SAS has been used in a wide variety of fields not only for statistical manipulations but also for graphical representations.
KEYWORDS: Gulf of Mexico; physical; continental shelf; wave;

01527

Yingst, J.Y.; Rhoads, D.C. 1985. The structure of soft-bottom benthic communities in the vicinity of the Texas Flower Garden Banks Gulf of Mexico. Estuar. Coast. Shelf Sci. 20(5):569-592.

ABSTRACT: Biological and sedimentological samples were obtained in June 1980 from box cores taken in 100-200 m of water on sandy-mud sediments near the East and West Flower Garden Bank [FGB] reefs, on the Texas-Louisiana Continental Shelf [USA]. The objective was to obtain baseline information about sedimentary parameters and organisms adjacent to the FGB environments in order to allow inferences to be made about potential effects of physical disturbance of the seafloor on the resident benthos. Most infaunal organisms are found in the upper 3-5 cm of the bottom. Permanent meiofauna dominate in both numbers and biomass. X-radiographs of sediment fabrics show all stations to be reworked by head-down deposit-feeders or errant bioturbators. Taxa responsible for this bioturbation were not quantitatively sampled. Macrofaunal densities range from 3000-25,000 m-2 and total meiofauna from 221-892 .times. (10 cm-2). Nematodes dominate followed in equal abundance by foraminiferans, polychaetes, and copepods. Of the total sediment ATP in the top 3 cm 75% is contributed by meiofauna. These benthic assemblages are hypothesized to represent a mixture of pioneering and high-order successional stages. Bacterial abundances are positively correlated with organic content and inversely correlated with macro- and meiofaunal densities. This inverse relationship may reflect consumer cropping intensities. Both microbial ATP and bacterial biomass are lower than reported for the Georgia Bight Shelf, Cape Blanc, West African Shelf, western coast of Norway, and Long Island Sound. Bacterial counts are lower than those recorded for the East China Sea and the Amazon River shelf. Moderate to low standing stocks of benthos, dominated by meiofaunal-sized taxa, further suggest that this area of the Gulf of Mexico is a relatively oligotrophic system for infaunal benthic consumers. Higher order successional stages are, in general, adversely affected to a greater extent than pioneering stages by physical disturbance. In the Texas-Louisiana shelf region, dilution of an already food limited system by inert barium sulfate would be expected to result in even lower standing stocks of benthic infaunal invertebrates.
KEYWORDS: Texas; Flower Garden Banks; continental shelf; biology; benthos; bacteria; ecology; reef;

01528

Zein-Eldin, Z.P. 1961. Plankton pigments in East Lagoon, Galveston, Texas. Trans. Amer. Fish. Soc. 90:32-41.

ABSTRACT: None
KEYWORDS: Texas; estuary; Galveston Bay; biology; plankton; chlorophyll;

01529

Zetler, B.D. 1980. Tides at Port Mansfield, Laguna Madre, Texas. Mar. Geodesy 4(3):237-248.

ABSTRACT: None
KEYWORDS: Texas; Laguna Madre; estuary; physical; tide;

01530

Zetler, B.D.; Hansen, D.V. 1972. Tides in the Gulf of Mexico, p. 265-275. In L.R.A. Capurro and J.L. Reid [ed.], Contributions on the physical oceanography of the Gulf of Mexico. Gulf Publishing Co., Houston, TX. 288 p.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; physical; tide;

01531

Zimmerman, R.J.; Minello, T.J. 1984. Fishery habitat requirements: Utilization of nursery habitats by juvenile penaeid shrimp in a Gulf of Mexico salt marsh, p. 371-383. In B.J. Copeland, K. Hart, N. Davis, and S. Friday [ed.], Research for managing the nation's estuaries. Univ. North Carolina Sea Grant Pub. No. UNC-SG-84-08.

ABSTRACT: None
KEYWORDS: Texas; estuary; marsh; Galveston Bay; biology; fisheries; shrimp; ecology; flora;

01532

Zimmerman, R.J.; Minello, T.J. 1984. Densities of Penaeus aztecus, P. setiferus, and other natant macrofauna in a Texas salt marsh. Estuaries 7:421-433.

ABSTRACT: None
KEYWORDS: Texas; estuary; marsh; Galveston Bay; biology; fisheries; shrimp; ecology; flora;

01533
Zimmerman, R.J.; Minello, T.J.; Zamora, G. 1984. Selection of vegetated habitat by brown shrimp Penaeus aztecus, in a Galveston Bay salt marsh. Fish. Bull. 82:325-336.

ABSTRACT: None
KEYWORDS: Texas; estuary; marsh; Galveston Bay; biology; fisheries; shrimp; ecology; flora;

01534
Zingula, R.P. 1975. Effects of drilling operations on the marine environment, p. 433-449. In Conference proceedings: environmental aspects of chemical use in well drilling operations, May 1975, Houston, TX. U.S. Environmental Protection Agency, Washington, DC.

ABSTRACT: None
KEYWORDS: Louisiana; continental shelf; oil and gas; biology; cuttings; environmental impact;

01535
Zingula, R.P.; Larsen, D.W. 1977. Fate of drill cuttings in the marine environment, p. 553-556. In Proceedings, 1977 Offshore Technology Conference. Paper No. OTC-3040.

ABSTRACT: None
KEYWORDS: Gulf of Mexico; oil and gas; physical; cuttings; environmental impact;

APPENDIX

KEYWORD LIST

APPENDIX
KEYWORD LIST

The number of occurrences in the bibliography is listed next to each keyword. The total number of references in the bibliography is 1,535.

Major Topic Keywords:

22	ARCHAEOLOGY
737	BIOLOGY
342	CHEMISTRY
296	FISHERIES
391	GEOLOGY
356	OIL AND GAS
309	PHYSICAL
162	SOCIOECONOMICS

Major Geographic Keywords:

76	ALABAMA
51	ATLANTIC OCEAN
68	FLORIDA
404	GULF OF MEXICO
699	LOUISIANA
22	MEXICO
95	MISSISSIPPI
10	PACIFIC OCEAN
553	TEXAS
27	UNITED STATES

Habitat Keywords:

74	BARRIER ISLAND
52	BEACH
430	COASTAL WATERS
501	CONTINENTAL SHELF
118	CONTINENTAL SLOPE
26	DEEP SEA
303	ESTUARY
131	MARSH
66	REEF

Special Studies:

45	BUCCANEER FIELD
2	CENTRAL GULF PLATFORM STUDY
13	DEEP SEA DRILLING PROJECT
26	IXTOC
29	OFFSHORE ECOLOGY INVESTIGATION
32	STOCS
35	STRATEGIC PETROLEUM RESERVE

Other Geographic Keywords:

1	ARANSAS BAY
2	ARANSAS PASS
5	ATCHAFALAYA BAY
3	ATCHAFALAYA RIVER
8	ATCHAFALAYA RIVER DELTA
19	BARATARIA BAY
1	CAMINADA BAY
10	CORPUS CHRISTI BAY
43	FLOWER GARDEN BANKS
28	GALVESTON BAY
5	LAGUNA MADRE
3	MATAGORDA BAY
2	MISSISSIPPI CANYON
22	MISSISSIPPI FAN
43	MISSISSIPPI RIVER
107	MISSISSIPPI RIVER DELTA
3	MUSTANG ISLAND
4	PADRE ISLAND
1	SABINE PASS
4	SAN ANTONIO BAY
11	SOUTH PASS
7	SOUTHWEST PASS
26	TIMBALIER BAY
2	TRINITY BAY
9	VERMILION BAY

Other Topic Keywords:

3	AIR QUALITY
1	ALLIGATOR
1	ANCHOVY
11	BACTERIA
125	BENTHOS
15	BIBLIOGRAPHY
3	BIOCHEMICAL OXYGEN DEMAND
6	BIOGEOGRAPHY
24	BIRD
10	BLUE CRAB
32	BRINE DISPOSAL
5	BROWN PELICAN
2	CATFISH
8	CHEMOSYNTHESIS
15	CHLOROPHYLL
11	CROAKER
84	CURRENT
19	CUTTINGS
1	DEBRIS
2	DIAGENESIS
12	DIAPIR
13	DISSOLVED OXYGEN
31	DREDGING

Other Topic Keywords (continued):

40	DRILLING FLUID
18	DRUM
236	ECOLOGY
6	EDDY
26	ENDANGERED SPECIES
280	ENVIRONMENTAL IMPACT
50	EROSION
2	EXPLOSION
7	FAULTING
173	FISH
40	FISHERY MANAGEMENT
73	FISHERY STATISTICS
11	FISHING GEAR
43	FLORA
3	FLOUNDER
7	FORAMINIFERA
4	GENETICS
57	GEOLOGIC HISTORY
5	GLACIATION
3	GROUPER
29	HAZARD
1	HERRING
3	HISTORIC
28	HURRICANE
114	HYDROCARBON
9	HYPOXIA
1	KINGFISH
13	LOOP CURRENT
8	MACKEREL
7	MANAGEMENT
3	MANGROVE
15	MARINE MAMMAL
21	MENHADEN
61	METEOROLOGY
18	METHANE
17	MINERALOGY
65	MODEL
5	MULLET
10	NEPHELOID
1	NEUSTON
3	NITROGEN
29	NUTRIENT
9	OCEAN DUMPING
2	OCEAN INCINERATION
60	OIL SPILL
6	ONSHORE FACILITIES
23	ORGANIC CARBON
19	OYSTER
8	PCB
17	PESTICIDE
33	PETROLEUM PLATFORM

Other Topic Keywords (continued):

3	PHTHALATE
31	PHYSIOLOGY
1	PIGFISH
10	PIPELINE
87	PLANKTON
2	POMPANO
1	PORGY
10	PREHISTORIC
15	PRIMARY PRODUCTION
5	RADIONUCLIDE
52	RECREATION
42	REMOTE SENSING
53	SALINITY
14	SEA LEVEL
8	SEAGRASS
16	SEATROUT
185	SEDIMENT
23	SEDIMENT TEXTURE
35	SEDIMENT TRANSPORT
44	SEDIMENTATION
22	SEEP
5	SHARK
16	SHIPPING
2	SHIPWRECK
148	SHRIMP
7	SNAPPER
8	SPOT
3	SQUID
20	STABLE ISOTOPE
1	STONE CRAB
39	STRATIGRAPHY
17	SUBMARINE LANDSLIDE
8	SULFUR
42	TAXONOMY
46	TEMPERATURE
30	TIDE
5	TOURISM
70	TRACE METAL
4	TRANSPORTATION
1	TUNA
6	TURBIDITY
22	TURTLE
3	VEGETATION
28	WATER QUALITY
29	WAVE
18	WILDLIFE
37	WIND

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. The includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.