

Technical Announcement

U. S. Department of the Interior
Bureau of Ocean Energy Management
Gulf of Mexico OCS Region

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Contact: Caryl Fagot
(504) 736-2590

Integrated Bio-Physical Modeling of the Louisiana-Texas (LATEX) Shelf

OCS Study BOEM 2012-108

The Bureau of Ocean Energy Management (BOEM), Gulf of Mexico OCS Region, announces the availability of a new study report, *Integrated Bio-Physical Modeling of the Louisiana-Texas (LATEX) Shelf*.

The circulation of the Louisiana-Texas shelf and the configuration of the hydrodynamical, wave, water column biogeochemical, and sediment transport models are examined. Numerical simulations from the model years 1990 to 2008, model skill assessment, biogeochemical simulations, sediment and wave model output and observation comparisons were also completed. The coupled hydrodynamical-biogeochemical-sediment/wave model of the LATEX shelf showed good skill at reproducing distributions of temperature, salinity, and current velocity at multiple time and spatial scales. The model also reproduces the seasonality, duration, severity, and time of onset of low oxygen variability of this shelf. The biogeochemical model describes the spatial and temporal patterns of nitrate and phytoplankton in agreement with observations. The coupled sediment transport-wave model reproduced both hydrodynamic conditions and sediment dispersal on the Louisiana-Texas shelf for the year 1993. Appendices of surface and bottom salinity fields, bottom dissolved oxygen fields, surface nitrate concentration fields, and surface chlorophyll concentrations for the years 1992–2007 accompany this report.

This report is available on CD from the Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, for \$15.00, and free of charge as a pdf file downloaded from the BOEM website. Copies can also be viewed at selected Federal Depository Libraries. The addresses are listed below.

To order a CD, use the Gulf of Mexico OCS Region contact information below and reference OCS Study BOEM 2012-108. To download a PDF copy, use the [Environmental Studies Program Information System](#) (ESPIS) and search on the study report number. In the near future, you will also be able to get this report also from the National Technical Information Service.

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U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Rd.

Public Information Office (MS 5034)
1201 Elmwood Park Blvd.
New Orleans, Louisiana 70123-2394
Phone: (504) 736-2519, 1-800-200-GULF
Fax: (504) 736-2620

Springfield, Virginia 22312
Phone: (703) 605-6000, 1-800-553-6847
Fax: (703) 605-6900
Website: <http://www.ntis.gov/>

BOEM Main website: <http://www.boem.gov/>