

University Research Initiative

# A Social Science Research Agenda for the Minerals Management Service in the Gulf of Mexico



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



Cooperative Agreement  
University Research Initiative  
Louisiana Universities Marine Consortium

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# **A Social Science Research Agenda for the Minerals Management Service in the Gulf of Mexico**

Conference Conveners

Robert Gramling  
Shirley Laska

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## ABSTRACT

On September 9th, 10th, 11th, and 12th, at a workshop in New Orleans funded by Minerals Management Service (MMS) through the Louisiana Universities Marine Consortium (LUMCON), a group of social scientists from all over the U.S., Canada, and Norway met with representatives of MMS and LUMCON, to design a social science research agenda for MMS in the Gulf of Mexico. This report describes the process by which the workshop was organized and conducted, and (in Appendix D) presents the descriptions of the recommended projects to implement that agenda.

## ACKNOWLEDGEMENTS

We would like to thank all who participated in the workshop for their contributions and just plain hard work. In three days, starting with a blank slate, we had the essential elements of an entire research agenda sketched out, an impressive accomplishment. The makeup of the group who participated was certainly the key to that success.

In addition to the direct participants we would like to thank Paul Sammarco, Jennifer Lo, and Rebecca East from LUMCON and Ken Adams and Rick Defenbaugh from MMS, and the staff from the Environmental Institute at the University of New Orleans and the Center for Socioeconomic Research at the University of Southwestern Louisiana.

The volunteer facilitators/participants Glen Daigre, Linda Durant, and Darryl Malek-Wiley deserve a special thanks for donating their time, energy and expertise. Their participation was essential to our success.

From Minerals Management Service there are three people who, in addition to being participants, were very important in another way in the success of the workshop, Bob Rogers, John Greene and Harry Luton. When it became obvious that the format to do what we needed to do wasn't around, they became active participants in creating one. It worked.

Finally, Ed Goodell deserves special thanks. Not only was he a participant, one of the volunteer facilitators, and involved in the meetings to design the workshop, he was involved in every aspect of the workshop from its initial conception through its eventual conclusion. Ed's energy and insights were invaluable.

Bob Gramling  
Shirley Laska  
February 17, 1993

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## BACKGROUND

The northern Gulf of Mexico is easily the most developed offshore area in the world. Today there are over 3,900 production platforms on the federal waters (beyond three miles offshore) of the Outer Continental Shelf (OCS) alone, with over 18,000 development wells in place linked to these platforms.<sup>1</sup> Production platforms are in place in water depths of over 1,700 feet, and over a hundred miles offshore. Very little of OCS oil, and none of the gas is tankered ashore, which means that virtually the entire offshore production system is connected to onshore facilities via a network of thousands of miles of subsurface pipelines. Unlike some of the new offshore regions of the world,<sup>2</sup> because offshore development evolved in the Gulf, almost all of the fabrication of offshore facilities was done locally. The end result of this massive development scenario, and of its evolution over almost 50 years, has been to significantly alter the physical, social, economic, and cultural environment of the coastal Gulf of Mexico (see National Research Council 1992; Gould et al. 1991).

Since the passage of the Outer Continental Shelf Lands Act in 1953, offshore oil and gas leasing on the Outer Continental Shelf (generally beyond three miles offshore) has fallen to the Department of the Interior. Initially this task was divided between the Bureau of Land Management (BLM) and the U.S. Geological Survey (USGS). The two primary impetuses for social science research came from the passage of the National Environmental Policy Act (NEPA) in 1969, which requires "utilization of a systematic interdisciplinary approach which will ensure the integrated use of the natural and social sciences" (42 U.S.C. 4321 *et seq.*) for analysis of the impacts of proposed federal actions and projects, and amendments to the Outer Continental Shelf Lands Act in 1978, which required assessment and monitoring of the impacts of OCS activities on the "human, marine, and coastal environments," (43 U.S.C. 1802 *et seq.*).

In response to these requirements the Environmental Studies Program was created in the Department of Interior, to provide needed information for decision making and monitoring. In 1982 the offshore leasing and regulatory functions performed by BLM and USGS were combined, and Minerals Management Service (MMS) was created, which included the Environmental Studies Program. Since its inception, the program has spent approximately \$539 million on targeted research. Approximately 12% of the funding has gone to studies in the Gulf of Mexico. Socioeconomic research has accounted for approximately 4% of the ESP research budget, and over 70% of that was spent in

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<sup>1</sup> In contrast, as of 1988, on the Pacific Outer Continental Shelf there was a total of 21 production platforms and 669 development wells. There is no other production on the remainder of the U.S. Outer Continental Shelf.

<sup>2</sup> Because offshore platforms must be constructed onshore, and be moved offshore they are inherently mobile, and can theoretically be constructed in virtually any coastal region of the world, and moved to any other. For example of the 21 production platforms in place on the Pacific OCS in 1988 nine were constructed in Japan, two in Malaysia, and one in Korea. Even more remote, for a while Mobil was considering constructing the platform for the development of the Hibernia field off the coast of Newfoundland, in Taiwan. Political, not technical considerations were probably more important in the decision to construct the platform locally.

Alaska. In addition part of that 4% was spent on the funding of scientific meetings that had more ecological and oceanographic content than socioeconomic, and some of the studies specifically identified as socioeconomic had substantial components (sometimes a majority) that were natural science in content (National Research Council 1992). This has meant that only a small percentage of this research has addressed impacts in the Gulf of Mexico, where all but 21 of the approximately 4,900 OCS production platforms are sited, and only a small percentage of this has addressed impacts on the human environment.

In 1989, a report prepared by the National Research Council found that socioeconomic information in the Gulf of Mexico Region's Environmental Impact Statement (EIS) for Sale 116 off southwestern Florida was not sufficient for informed decisions concerning OCS oil and gas activities. Briefly stated, the report found that "[S]tandard social and economic analyses have been inadequate" and that "[S]ignificant types of social and economic impacts have been ignored." (National Research Council 1989: 56).

Other sources also began to question the adequacy of the Gulf of Mexico Region's socioeconomic analyses for informed decision making. For several years the Scientific Advisory Committee of the MMS has urged funding of more social and economic studies in order to understand more fully long term social and economic implications of the OCS oil and gas program. In 1991, the State of Louisiana sued the Department of the Interior to stop leasing of blocks off the Western Gulf of Mexico (Lease Sale 135). One basis for this lawsuit was the alleged lack of adequate information of social and economic impacts of the OCS oil and gas program (State of Louisiana versus Lujan).

In response to the growing concern for socioeconomic issues in the Gulf of Mexico Region, the MMS began taking certain steps toward solving the problem. Among the steps taken by the MMS were expansion of the issues analyzed in the EIS to include impacts on public services and infrastructure and impacts on social patterns; the creation of a "Socioeconomic Working Group" within the region; the funding of some socioeconomic research through the Universities Research Initiative established three years ago with the Louisiana Universities Marine Consortium (LUMCON); and the funding of the "Socioeconomic Research Agenda Workshop" described in this document, to recommend studies which will assist in the understanding of socioeconomic impacts of OCS oil and gas activities.

The intent of the workshop was to recommend a social science research agenda for the MMS's Service's Environmental Studies Program for the Gulf of Mexico, at a sufficient level of detail to describe specific studies, the justification for those studies, and the methods required to perform the stated objectives of each project.

## **DESIGNING AND RUNNING THE WORKSHOP**

The workshop was funded through the MMS Universities Research Initiative. Once the goals of the workshop were agreed on, the two co-conveners of the workshop, and representatives from MMS and LUMCON met periodically to design the workshop. The two primary areas of discussion were the participants in the workshop, and the schedule and structure of the workshop. The ultimate selection of structure and participants--a small workshop comprised of researchers expert in the impact of extractive development--was based on the objective of accomplishing a detailed description of key and appropriate studies.



## **Workshop Participants**

From the onset the goal for the selection of participants was to end up with a pool of individuals which had four characteristics: 1) the group represented the disciplinary diversity within the social sciences; 2) within that diversity the group contained significant expertise for each of the germane research traditions (resource economics, social impact assessment, marine policy, etc.) within those disciplines; 3) to the extent possible (with the limited past focus on the impacts of offshore energy production), participants had familiarity with the specific OCS development activity in question, and 4) the group was small enough to be manageable and still meet criteria 1-3 above. Discussions which took place in developing the workshop made it evident that in addition to these academic scholars, MMS socioeconomic specialists, as well as other Gulf of Mexico officials responsible for the development of the socioeconomic research initiatives, should participate fully in the workshop as well. Two objectives required this: First, it is important that the research agenda which was proposed by the workshop be practical, i.e. one which would serve the needs of MMS as they increase their consideration of socioeconomic impacts of OCS activity. Second, it is important that MMS personnel benefit from exposure to perspectives offered by the academic researchers which they might not have considered in the past, and that the academic researchers likewise be exposed to perspectives from agency personnel that they might not have considered in the past. The list of participants and a short biographical sketch of each are included in Appendix A.

## **Workshop Structure and Schedule**

There were five main elements agreed upon for the scheduling and structure of the workshop (see Appendix B for a detailed schedule of the workshop). First, approximately one month before the workshop was to take place each of the participants received an information packet prepared by the co-conveners and MMS personnel. The packet contained:

1. Background and rationale for the workshop.
2. Agenda.
3. A brief overview of MMS social and economic data needs.
4. A history of OCS activity in the Gulf of Mexico and its socioeconomic impact, by Bob Gramling.
5. A bibliography of existing research on socioeconomic impacts of OCS activity in the Gulf.
6. A review by Ruth Seydlitz of the availability of secondary data for analysis of OCS socioeconomic impact.
7. An example of a Request for Proposals from MMS for use by the workshop participants in modeling their proposal.
8. A list of the participants.

Second, the workshop itself was run by professional facilitators (see Appendix A). Use of facilitators allowed the co-conveners to become participants in the intellectual work of the meeting, and provided the necessary skills to ensure that the group remained focused, and ensure that the sessions ran smoothly. Once the facilitators were chosen, they also became part of the planning process. In addition, five local professionals--three University of New Orleans graduate students and two Louisiana state officials--were trained as auxiliary facilitators.

Third, the facilitators interviewed (by telephone) about a third of the workshop participants, and produced extensive notes on the background of the participants, their ideas for research themes, and

their general concerns about, and advice for, the workshop. These interviews provided information for planning the workshop. Some of the concerns expressed in the phone conversations were addressed in the plenary sessions; in addition, the ground rules proposed to the group reflected some of the concerns expressed in the phone interviews.

Fourth, a field trip was planned as the first on-site experience of the workshop. It was designed to immerse the participants in the OCS oil and gas industry. The field trip took the participants by boat through the coastal environment of Louisiana (where most of the support activity for OCS activity exists) and then offshore to see some of the development. Not only did this give the participants an opportunity to see how unique the OCS resource extraction activities are, but also it allowed the participants to meet one another, to begin networking and to discuss the OCS activities that would be the focus of the workshop. By the first day of actual workshop activities, the participants were prepared both interpersonally and topically to begin collaboratively to develop the agenda.

Fifth, three plenary sessions were established. The beginning session introduced the project, set the ground rules and determined the broad sub-area topics for the four or five breakout groups. No attempt was made to set the themes of the breakout groups beforehand. To do so would have caused the workshop co-directors to have interjected their perceptions of the broad topics. It was the intent of the project to have the workshop participants--key experts in the field--do that. This was recognized as a risky design but essential to have the workshop product be truly the result of the workshop.

In practice, establishing the broad subtopical areas proved problematic as had been anticipated. The first attempt to do so resulted in a list of over 30 ideas, many of which were individual projects as opposed to components of an overall organizing system for a full research agenda. After extensive dialogue and listing of relevant research issues, several typologies for organizing the work groups around the research issues were discussed. Gramling presented a typology of socioeconomic impacts, and methodologies, which was discussed extensively (Appendix C). Eventually, a simple typology that focused on scale of analysis (see methodologies, Appendix C) was agreed on. It was proposed that organizing the work into breakout groups was not necessarily the same task as developing a definition of the subareas of socioeconomic research important to assess OCS impact. In the last plenary session, more effort was directed toward grouping and linking the projects according to different criteria. See below for the results of this effort. Finally, in addition to a simple typology to divide the labor between the work groups, a set of guiding principles emerged from the first plenary session to provide focus across groups.

These principles were:

1. Be practical. Focus on issues that are significant--to the agency, to affected publics, and/or as identified in the existing social science research literature. Provide the kinds of information that, according to scientific standards, ought to be included in an EIS, and also the kinds of information called for under the Outer Continental Shelf Lands Act Amendments (OCSLAA) of 1978.

2. Use a long-term perspective. In doing studies, take advantage of the time frame of accumulated experience in the Gulf (e.g., the ability to consider the full boom-bust cycle, the changing levels of government capacities over time, etc.) to understand the underlying processes, and to provide useful input to other communities and OCS regions. Focus on compiling what we know, but doing so in a way that helps us have a better idea of what to expect in the future.

3. Identify the generic vs. the specific. To the extent possible, identify underlying causes and processes in such a way as to be able to separate out the experiences that are unique to the time (e.g., pre-1969, post-1973, etc.) or region (e.g., coastal Louisiana, Morgan City, etc.) from those that can be expected in other times and places.

4. Learn from surprises as well as from "the expected." Discuss the lessons to be learned from strategies that were thought to be adaptive but failed; from cases where planning was helpful vs. helpless in ameliorating impacts; from unexpected changes in price, technology, industrial practices, even global politics (e.g., the sudden eagerness for oil development in the former Soviet Union).

5. Be realistic. Explicitly consider technology, changes taking place in the industry, influence of commodity/price trends, federal approaches to leasing, and other "external" factors that affect socioeconomic impacts.

6. Be balanced and thorough. Consider positive as well as negative impacts; deal with the full range of significant socioeconomic impacts, and not just those that fall within the traditional subject-matter interests of one or more social science disciplines.

7. Focus on distribution of impacts. Explicitly consider who wins and who loses, and whether impacts that are negative (or positive) in the short run may prove to be positive (or negative) in the long run.

8. Ascertain the ways in which OCS activities have a socioeconomic impact. Consider the process whereby the extraction activity results in impacts. Such considerations will facilitate impact assessment and mitigation.

Following a review of these guiding principles, the breakout work groups were formed. The groups ranged in size from five to seven members and contained a variety of participants from different socioeconomic disciplines (e.g., an economist, anthropologist, sociologist, geographer--and representative of MMS). Each group met in an individual room, with a local facilitator, to design what they felt were the most immediately relevant projects for the research agenda. The professional facilitators moved from room to room to assist in inter and intra group communication.

Three of the work groups focused on the research needed to assess and monitor impacts on **1) individuals and families, 2) communities and 3) regional/state entities**. The fourth group examined the needed research concerning the role of **policy** in monitoring and mitigating socioeconomic impacts, and the fifth group (**other**) worked on the issues that had been raised in the plenary session, but that did not fit neatly into the typology. After deciding what the most important projects were within their specific charge, the work groups broke into smaller groups, or assigned individuals to provide the first draft of the proposed project description.

A second plenary session was planned for the middle of the workshop to assess the progress of the breakout groups and to determine how to address any problems were being encountered which could be addressed. This session resulted in a clarification of the expected project description outcomes. Additionally, some groups discovered that they were producing similar proposals. Two of the breakout groups combined for the final breakout effort and other smaller groups evolved with members from more than one group. At the end of the workshop a third plenary session evaluated and ranked the projects (see below for description of the last plenary session).

## **Format of the Project Descriptions**

In order to ensure that the work groups considered, and provided input for similar project elements, a structure for the write-up for individual projects was suggested and agreed upon by the participants. The elements were:

- Title
- Region
- Proposed Period of Performance/Level of Effort
- Applicable Planning Areas
- Description of Proposed Project
  - Objectives:
  - Methods/Study Design:
- Products
- Justification
- Current Status of Information on this Topic
- Applicability of Information to Issues of Regional or Programmatic Concern
- Qualifications

## **RESULTS**

### **Proposed Projects and Their Rankings**

The number of project descriptions produced by each breakout work group ranged from two to five. The project descriptions were collected and copies were reproduced for each of the workshop participants. On the last day of the workshop each of the 18 proposed projects was presented by a member of the work group that had designed that project.

Following the presentations, criteria for ranking the projects were developed (concerns and issues surrounding the ranking process are discussed below). After a number of suggestions were proposed by the workshop participants, the facilitators suggested three criteria for ranking them:

1. Immediacy/time sequence. How important is it to get the project under way?
2. Practicality/fit with MMS needs. How important is the project for MMS's decisionmaking and monitoring responsibilities?
3. Scientific importance. How important is the project for understanding and/or monitoring the phenomena.

Other criteria which were mentioned included:

4. Mix of methodological approaches. Will the findings be more encompassing if a variety of research methods are used?
5. Utility of findings to governmental entities in the Gulf of Mexico region in addition to MMS.

Does OCSLAA permit consideration of needs of regional and local governments to be considered when research is conducted on social impacts?

6. Marketability of research idea. What initial research projects will be seen as central to the MMS mission and thus constitute a good base for establishing a socioeconomic research program in the Gulf of Mexico region?

7. How the research findings will be used in the preparation of EISs.

#### Voting Procedures

Each participant was given a ballot with the projects listed, in the order they were presented. Each participant had a total of ten points which could be allocated among the 18 projects, no more than three points to any one project. Following voting, the results were tallied and the projects were ranked as follows:

#### Proposed Studies and Their Rankings by Participants

1. An Assessment of the Historical, Social and Economic Impacts of OCS Development on Gulf Coast Communities. (31 votes)
2. Consequences of OCS Oil and Gas Activities for Individuals and Families. (21 votes)
3. Socioeconomic Issues Analysis on Gulf of Mexico Activity. (20 votes)
4. Case Studies of Gulf Communities. (17 votes)
5. Mitigation Strategies for Addressing Socioeconomic Impacts. (16 votes)
6. MMS Policies and Processes Affecting Socioeconomic Impacts. (15 votes)
7. Estimates of OCS Development in the Gulf of Mexico Since 1954: Comparison Between Two Accounting Methods. (14 votes)
8. Decline. (13 votes)
9. Local Government Capacity to Manage Development. (11 votes)
10. Regional Forecasting/Simulation Model. (10 votes)
11. Monitoring Socioeconomic Impacts of OCS Activities in the Gulf of Mexico Region. (9 votes)
- 12a. (tie) Perceptions of Risk. (8 votes)
- 12b. (tie) Adaptations of Local Oil-Support Businesses to Change in OCS Activities. (8 votes)
- 13a. (tie) Factors Influencing Industry Restructuring. (7 votes)

- 13b. (tie) Development of "Appropriate Technologies" in the Petroleum Industry. (7 votes)
- 14. Outer Continental Shelf Activities and the Human Environment. (6 votes)
- 15. A Comparative Analysis of the Socioeconomic Impacts of Mineral Extraction Communities. (5 votes)
- 16. Socioeconomic Survey of the Gulf of Mexico. (2 votes)

## **CONSTRUCTING A RESEARCH PROGRAM FROM WORKSHOP RESULTS**

The ultimate success of using a workshop of experts to "quick start" a socioeconomic impact research program for the MMS will not be known for several years. While the response to the workshop on the part of both the researchers and MMS staff who participated was very positive, the contribution of the workshop will rest on how the recommendations are implemented. Conference participants saw several more steps as necessary. The implementation of several of these recommendations is presented below in a prescriptive fashion for succinctness and to demonstrate that the participants felt very strongly about the importance of them in producing a successful socioeconomic impact research program. Without serious consideration of these issues, the contribution of the workshop toward beginning a socioeconomic impact research program might be minimal. The issues fall into the categories of funding, packaging, and capacity building.

### **Selecting Projects For Funding**

There was considerable concern expressed publicly and privately to the co-conveners that the ranking of the proposals be kept in perspective.

There are several issues here:

1. The process of ranking individual proposals does not necessarily result in a balanced program of research. As one participant wrote afterwards, "There needs to be a much smaller group of people who look at the array of possibilities, the relative costs involved, the type of balance that would be appropriate, and then work up, in interaction with one another, an appropriate game plan."
2. The ranking process does not necessarily address how the studies are to be used. In order to select projects based on this criteria, it would be necessary to ascertain MMS specific objectives with regard to implementing a socioeconomic impact assessment research program. Determination of program objectives could also be "quick started" by holding an in-house workshop similar to this one which was held with the scientists and by producing a similar document which can then be referred to as the program is implemented. The reason for the importance of this effort is that the projects proposed in this document will serve different MMS objectives.

In the final plenary session some attempt at combination of the projects was discussed. The group reached a number of conclusions:

1. The group noted that there was no clear interval separating the higher ranked studies and other studies, and rejected the idea of setting a line between top ranked studies and other studies.
2. The group noted that more broadly stated baseline studies tended to get more support than more specialized studies. Several members noted that while there is a need for basic projects, there are important, more focused, studies in the pool of those recommended that should be considered.
3. The group also noted that some of the more specialized studies could be linked methodologically or topically with some of the higher ranked ones, and therefore might be included with them in establishing a program of study.
4. The group agreed that some of the more specialized studies might be given a higher priority in terms of achieving a balanced research program, or because they might have a high promise of developing new methodologies, answering specific relevant questions, or were needed for administrative decisions, or policy considerations. It was also noted that some of the more focused studies were very innovative, and that MMS does not have a history of funding innovative studies.
5. The group agreed that there was some overlap in some of the studies, and consequently a potential for combination.
6. But the group reached no consensus on alternative ways to cluster the projects, other than noting that the rank order or scores of the projects should not be considered as the sole criteria in establishing a research program.

Since the workshop a number of participants have written suggesting possibilities for combining projects, and reducing overlap. While some of these appear to have considerable merit, the co-conveners have refrained from including them in the report, or from interjecting their own suggestions for combinations. We will note that there is some overlap and there appears to be excellent possibilities for combining some of the projects. This should be carefully considered as implementation proceeds.

### **Packaging the Projects**

In addition to concerns about funding priority, workshop participants suggested that MMS consider carefully the packaging of the project components, using both theoretical and methodological criteria as well as practical criteria in place at MMS with regard to preparing and distributing RFPs. "How things have always been done" for the biophysical environmental studies projects may not work for the socioeconomic impact assessment research. Carefully considering what should be changed in the way the projects are packaged--while difficult to do because the process is well in place--may have a very positive payoff in terms of implementing a socioeconomic impact research program.

Certain projects may be easily packaged with others (e.g., #6 and #13a). Certain projects may be of sufficient magnitude to warrant a single project. Consideration must be made of the utility of the bringing together of various researchers and research activities and whether they must be brought together within the research project or by the MMS social scientists who will oversee the program's implementation. Again, deliberate consideration of the implications of the way in which the projects are implemented may be crucial to a successful socioeconomic impact research program.

## **Capacity Building**

A final concern of the workshop participants was that MMS did not currently have the capacity in place to implement the recommendations of the workshop. Several specific recommendations were made:

1. Minerals Management Service needs to increase staff to successfully administer a social science research agenda. The specific recommendation was made that MMS add two Ph.D.-level social scientists in the Gulf region. It should be noted that one participant specifically objected to the limitation of the recommended positions to Ph.D level. However, many felt the research and theoretical training associated with the doctorate was necessary for the management of a research program. Additionally, the people should be trained and have experience in the application of social science research to social problems and issues; they should have the management skills to draw on the resources of the in-house social scientists for advice about developing a clear sense of the objectives of the program and how to implement them.

2. Facilitate responses to requests for proposals from academic researchers. While consultants play an important role in the biophysical environmental studies program, this may be possible because the research issues are much better defined. In its first years, the program will benefit from funding academic researchers who have, as a constant requirement of their craft, theoretically and methodologically robust research. Private consultants have more difficulty implementing such efforts because they are not subsidized by institutions which have peer-reviewed research as an objective. Again, careful attention to the way in which the research is carved into requests for proposals will permit an assessment of which components are best completed by the consultant sector.

One way to enhance academic submissions is to have a longer period of time between the announcement of the RFP and the submission deadline. Due to the way in which the university operates, quick responses are difficult because a funding procurement component is not fully in place in the academic setting as it is in the consulting firm. The responsibility for almost all of the proposal preparation often falls on the researcher.

3. Develop a sound, systematic process of obtaining reviews, from both in-house and academics, of the research proposals. Other federal agencies do not select the reviewers until after the submissions are made; as a result individuals who do not submit proposals can be utilized as reviewers. By ascertaining how these other agencies have developed their review processes, modifications of the current MMS system should not be so difficult. A systematic review process which is seen as credible is paramount for keeping the best researchers in the research game. Recent problems with RFP announcements and reviews have badly soured some of the key researchers of resource extraction and economic development.

## **DESCRIPTION OF THE PROJECTS**

The proposed projects fell into three basic categories: baseline studies, policy related studies, and those projects which focused on some specific aspect of OCS development. Appendix D provides a description of the projects in these three groups in the order they were ranked by the participants in the workshop.



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## APPENDIX A: PARTICIPANTS

**Mary R. Bartz** is a Supervisory Environmental Specialist/Chief Coastal Unit at Minerals Management Service in New Orleans, La. She graduated summa cum laude from American University with a degree in Public Administration in 1974 and also graduated with a Master Public Administration from University of New Orleans in 1977. She has worked for MMS since 1977 and for the past nine years has been a supervisor in Leasing and Environment. Within the Unit she has six interdisciplinary staff members, all of whom are responsible for analyzing impacts of the oil and gas industry on area resources, in environmental impact statements, required under NEPA.

Prior to becoming a supervisor, she had responsibility for analyzing "Community Infrastructure" and "Land Use" in these documents. This required developing data on industry capacity-use in coastal areas and its relationship to projected needs resulting from a lease sale. She also analyzed current use of the community infrastructure, and projected any future needs which correlated with scenarios developed for the environmental analyses.

**C. Hobson Bryan** is Professor of Sociology at The University of Alabama. He served as Chair of the Department from 1983 to 1992. In 1983 he was awarded a Senior Fulbright Research Fellowship to New Zealand to provide leadership in the development of social impact assessment and natural resource policy in that country. From 1979 to 1981 he served as National Program Leader for Social Impact Assessment in the Washington office of the U.S. Forest Service and helped develop guidelines for social impact assessment with that agency. He has published numerous articles in the area of social impact assessment and natural resource policy, including a recently co-authored book with Nick Taylor and Colin Goodrich, Social Assessment (1990). Dr. Bryan received his B.A. in sociology from Vanderbilt University and his M.A. and Ph.D. in sociology from Louisiana State University.

**Raymond J. Burby** is DeBlois Professor of Urban and Public Affairs in the College of Urban and Public Affairs at the University of New Orleans. Dr. Burby received his doctoral training in city and regional planning at the University of North Carolina at Chapel Hill, where he was a member of the faculty for twenty-four years prior to coming to New Orleans. He is the author or co-author of twelve books (including New Communities USA, D.C. Heath, 1976; Energy and the Community, Ballinger, 1978; Energy and Housing, OGH, 1980; and Sharing Environmental Risks, Westview Press, 1990) and nearly 100 other published works. Burby was co-editor of the *Journal of the American Planning Association* from 1983 to 1988 and has pursued an active research agenda, serving as principal or co-principal investigator on over thirty funded projects. Over the past decade his research has focused on the evaluation of state and local policy options for maintaining environmental quality and the quality of life.

**Don Callaway's** educational background includes a doctorate in anthropology from the University of Michigan, a post-doctoral fellowship in statistics at the University of California, Berkeley and a Senior research fellowship at Oregon Health Sciences Center in Portland. Dr. Callaway has worked as Director for Research and Health Statistics for the Navajo Health authority, directed social impact research for the Southern Ute Tribe and has lived for several years on the Navajo and Ute reservations. Don moved to Alaska in 1985 and worked for the Minerals Management Service directing research into the possible consequences of offshore oil development on coastal Native communities. During the summers of 1990 and 1991 Don conducted research in the Russian Far East and with Even reindeer brigades in Evensk. Don began working as an anthropologist for the Subsistence Division of the National Park Service in July of 1992.

**Linda Castaño-Vèlez** is an economist with the Leasing Activity Section of the Minerals Management Service, Gulf of Mexico OCS Region. Prior to her association with the Minerals Management Service, Ms. Castaño-Vèlez worked as a planning engineer and as a forecast analyst for Energy Corporation in New Orleans. She earned a B.S. degree in engineering from Tulane University in 1984.

**Biliana Cicin-Sain** is currently a Professor of Marine Studies in the Graduate College of Marine Studies at the University of Delaware where she also holds joint appointments in the Department of Political Science and in the College of Urban Affairs and Public Policy. Professor Cicin-Sain also serves as Co-Director of the Center for the Study of Marine Policy at the University of Delaware and as Editor of *Ocean and Shoreline Management*, an international journal devoted to the analysis of all aspects of ocean and coastal management. Professor Cicin-Sain is a member of the Ocean Studies Board of the U.S. National Academy of Sciences and is currently serving on a number of Academy panels. She also serves as Co-Chair of the Marine Affairs and Policy Association.

Dr. Cicin-Sain has written extensively on a range of marine policy issues, including fisheries management, marine mammal management, offshore oil development, multiple use conflicts, and international marine policy. Her international experience includes work on marine resources management in Colombia, Ecuador, Mexico and the South Pacific, and research on international negotiations related to the United Nations Conference on Environment and Development.

**Scott Farrow** is a resource economist and currently Associate Professor of Economics and Public Policy at the Heinz School of Public Policy and Management at Carnegie Mellon University. He is the chair of the socioeconomics panel of the OCS Scientific Advisory Board and has authored a book and numerous publications on the management of OCS lands. His recent policy experience includes two years as the Associate Director for Pollution Control and Prevention with the President's Council on Environmental Quality. He is listed in a number of Who's Who publications and is a member of the Marine and Coastal Ecosystem Directorate of the U.S. Man and Biosphere Program.

**William Freudenburg** is A Professor of Rural Sociology at the University of Wisconsin-Madison. He has devoted some fifteen years to studying the social impacts of environmental and technological change, focusing on societal management of technological risk. He has written several dozen papers on the social impacts of coal, oil shale, nuclear power, and other forms of energy development. His articles have been published in interdisciplinary journals such as *Science*, *Social Science Quarterly*, and *Technological Forecasting and Social Change*, and in numerous sociological journals, including *American Journal of Sociology*, *American Sociological Review*, *Annual Review of Sociology*, *Rural Sociology*, and *Social Forces*. His books include Public Reactions to Nuclear Power: Are there Critical Masses? and Paradoxes of Western Energy Development, both of which were published in a series by the American Association for the Advancement of Science. He served for six years as a member (and for three as Chair of the Socioeconomic Committee) of the Scientific Advisory Panel on Outer Continental Shelf oil and gas leasing for the U.S. Department of the Interior. In recent years, he has worked as an advisor to the States of Washington, Nevada, Mississippi and Maine, helping them to assess the socioeconomic impacts of potential repositories for storing the nation's high-level nuclear wastes.

**John K. Gamman** is currently a principal of CONCUR, the collaborative for Environmental Analysis and Conflict Resolution, with offices in Berkeley and Santa Cruz, California. Dr. Gamman received his doctorate in Environmental Planning and Policy Analysis from the Department of Urban Studies and Planning at Massachusetts Institute of Technology, where he specialized in the use of facilitation

and mediation skills to resolve complex public policy disputes. As a practicing facilitator and mediator, Dr. Gamman has recently completed several projects similar to the development of the MMS Social Science Research Agenda. These projects include mediation and policy analysis for the state-wide Louisiana Environmental Action Plan, a comparative risk project sponsored by the U.S. EPA; facilitation and policy analysis for the Land Use, Land Use Monitoring and Wetland Monitoring elements of the Comprehensive Conservation and Management Plan for the San Francisco Estuary Project, and strategic planning consulting for the U.S. Army Corps of Engineers and Aquatic Habitat Institute regarding their roles in the long term management of the San Francisco Bay. Dr. Gamman also trains public and private agencies how to use mediation to resolve complex environmental disputes throughout the United States and in several countries. His international experience includes dispute resolution training for the governments of New Zealand and Australia, preparation of a National Coastal Plan for the Caribbean Island nation of St. Kitts/Nevis, and research for the Organization of American States and National Institute for Dispute Resolution examining the obstacles in donor agencies and developing countries to implementing national environmental protection programs.

**Bob Gramling** is a professor of sociology at the University of Southwestern Louisiana, and the director of the Center for Socioeconomic Research. His research interests lie in the area of environmental sociology. For the last 15 years a part of those research interests has been focused on the socioeconomic impacts of offshore oil and gas development, and on the differential perceived risks of offshore development in the United States and Canada. He was a member of the National Academy of Sciences, Committee to Review the Outer Continental Shelf Environmental Studies Program.

**John R. Greene** received his BA in Anthropology from the University of New Orleans (UNO) in 1979. In 1980, he was employed by the Archaeological and Cultural Research Program (ACRP) of the University of New Orleans. Following continued work at the ACRP, he was promoted to Research Assistant in 1982 and Research Associate in 1984. While working for the ACRP, Mr. Greene completed undergraduate and graduate course work for a MS in Geology at UNO. Mr. Greene began working for the MMS Gulf of Mexico Region in November 1988 for the Environmental Operations Section.

**Jan Erik Karlsen** is director of Rogaland Research-Social Sciences and an adjunct professor of petroleum business administration and economics at Rogaland University Center, both in Stavanger, Norway. His current research interests are split between the exchange of sustainable, small scale technology and business concepts between industrialized and industrializing countries and economic, political and social aspects and impacts of Norwegian petroleum activities. Recent publications are "Work," in E. Oyen (ed.) Sociology and Inequality (Norwegian University Press, forthcoming) and Myths and Symbolic Management in the Petroleum Business (Norwegian University Press, 1990). He holds a M.Phil. in sociology from the University of Bergen, Norway, and an MBA and a Ph.D. in business administration from the Norwegian School of Economics and Business Administration.

**Judith T. Kildow** is an Associate Professor of Ocean Policy in the Department of Ocean Engineering at MIT, specializing in Marine Environment, Technology and Policy issues. Dr. Kildow has served on several U.S. National Academy of Sciences National Research Council Boards and committees, and was a member of The National Presidential Advisory Committee on Oceans and Atmosphere (NACOA). She also served as a member of the technical advisory committee of the Massachusetts Office of Environmental Affairs, is currently a member of the Board of Directors of the

Massachusetts Audubon Society, and serves as Vice Chair for Environment of the Board of FlexES, an environmentally driven corporation to serve the waste management needs of large municipalities. Her past research has focused on offshore marine technology policy issues, including OCS developments. Her current research interests focus on integrating political, economic, technological and scientific information in the formation of a methodology to assess coastal resources, living and non-living, more accurately.

**Larry Leistriz** is a Professor of Agricultural Economics at North Dakota State University. He has been a faculty member since 1970. He has directed a number of research projects assessing the economic, demographic, and fiscal impacts of large scale projects. He is the author or editor of nine books, including The Socioeconomic Impact of Resource Development: Methods for Assessment (Westview 1981), Socioeconomic Impact Management: Design and Implementation (Westview 1984), Social Impact Assessment and Management: An Annotated Bibliography (Garland 1986). Dr. Leistriz received his B.S., M.S. and Ph.D. in agricultural economics from the University of Nebraska-Lincoln.

**Scott McCreary** teamed with John Gamman to help design and to facilitate the Minerals Management Workshop. Scott earned his doctorate at MIT in Urban and Regional Planning with an emphasis in environmental policy analysis and dispute resolution. As a partner in CONCUR, Dr. McCreary has served as a facilitator or mediator in public policy dialogues on a variety of marine policy and land use disputes. His research has focusses on the effective design of decision making processes to resolve science-intensive public policy disputes.

**Harvey Molotch** is Professor of Sociology at the University of California, Santa Barbara. His books include Managed Integration: Dilemmas of Doing Good in the City (University of California Press); Impacts of Growth (Praeger) and Urban Fortunes: The Political Economy of Place (University of California Press). His primary research interests are news media, urban development, and the sociology of environmental intervention.

**Steve H. Murdock** is Professor and Head of the Department of Rural Sociology at Texas A&M University. He has been a member of the MMS OCS Scientific Advisory Committee for three years and has published four books and more than 100 other publications on the socioeconomic impacts of resource development in the United States.

**Jim Opaluch** has worked extensively in the area of environmental impacts of oil development and transportation, particularly with regard to natural resource damage assessments of oil spills. He has served on National Academy of Sciences panels that focused on adequacy of environmental information for OCS oil leasing decisions. Dr. Opaluch was recently named Research Scientist of the Year at the University of Rhode Island College of Resource Development. He has served in a number of professional roles, including President of the Northeast Agricultural and Resource Economics Association, Vice President of the Association of Environmental and Resource Economists, Associate Editor of the Journal of Environmental Economics and Management, on the Editorial Board of the Northeastern Journal of Agricultural and Resource Economics, on the Governing Board Associate of the American Agricultural Economics Association Foundation and on the Board of Directors of the Northeastern Agricultural and Resource Economics Association. Dr. Opaluch has numerous publications in refereed journals.

**John H. Peterson** is Professor of Anthropology at Mississippi State University. He helped write the first guide to social impact assessment for the Army Corps of Engineers, advised the Department of Interior and the Library of Congress on cultural conservation, and chaired a National Academy of Sciences panel on cultural aspects of water resource development. Peterson has directed twenty projects in social aspects of resource development for the U.S. Forest Service, the Army corps of Engineers, and the Department of Interior. He serves on the Scientific Committee of the Minerals Management Service.

**Roy Rappaport** (Ph.D. Columbia, 1966) is Walgreen Professor for The Study of Human Understanding at the University of Michigan, where he has been a member of The Anthropology Department since 1965. He has done ecologically oriented field work in Papua New Guinea and has worked on the socioeconomic impacts of both Nuclear Waste Disposal and Outer Continental Shelf Oil Development in the United States. He has served as president of the American Anthropological Association. Ecology, Meaning and Religion, (1979) and Pigs for the Ancestors (sec. ed., 1984) are among his publications.

**Claudia Rogers** is a social anthropologist with the Corps of Engineers in Mobile, Alabama. She is responsible for all socioeconomic impact studies used to evaluate the district's proposed civil works' projects and to meet NEPA guidelines on potential military realignments. A proponent of inter-agency cooperation, she authors and contributes to reports for audiences as diverse as local economic development councils in Mississippi and Alabama and the U.S. Agency for International Development in Bolivia, South America. She holds a Ph.D. in applied anthropology from Columbia University in New York City.

**Robert M. Rogers** is an oceanographer with the Environmental Studies Staff. He is the Contracting Officer's Technical Representative (COTR) on the Universities Research Initiative, an MMS-sponsored contract encompassing a wide variety of coastal studies including those of a socioeconomic nature. He received his BS in Zoology and Physiology from Louisiana State University and PhD in Marine Biology from Texas A&M University.

**Mark Shrimpton** (Principal, Community Resource Services Ltd.) has undertaken work related to resource development impacts and their management for clients in government, industry and the community. Representative projects include a scoping study of oil impacts in Atlantic Canada, an analysis of the affects of rotational work patterns on family life, a handbook on the management of large-scale construction projects, and assessments of, and environmental protection plans for, the Hibernia offshore oilfield. Mark edited Woman, Work and Family in the British, Canadian and Norwegian Offshore Oilfields (Macmillan, 1988) and has written a variety of reports and papers on resource development issues. He is an Adjunct Professor at Memorial University of Newfoundland, providing advice and teaching on offshore oil and resource management issues.

**Stanley K. Smith** is Professor of Economics and Director of the Bureau of Economic and Business Research at the University of Florida. He also directs the Bureau's Population Program, which produces population estimates and projections for Florida and its counties and cities. He has a doctorate in economics from the University of Michigan, with a specialization in economic demography. His current research interests include the methodology and analysis of population estimation techniques; the evaluation of population forecast errors; and the determinants and consequences of interstate migration.

**Keith Storey** (Professor, Department of Geography, Memorial University of Newfoundland) is Director of the Institute of Social and Economic Research Offshore Oil Research Project. His principal research interests include social and economic impact assessment methodologies, monitoring practices and systems, the management of major construction projects and the impacts of rotational work systems. Keith Storey is also a Principal of Community Resources Services Ltd., in which capacity he has undertaken work related to offshore oil development impacts and their management for clients in government, industry and community.

**Kenneth P. Weber** is presently a sociologist in the Environmental Studies Section, Pacific Outer Continental Shelf Region, Minerals Management Service. Weber has extensive field research experience in the American West and has completed field research projects in Montana, New Mexico, Utah, and Colorado on Native American, Hispanic, Mormon, and rural Anglo populations. His research topics have included ethnohistory, socioeconomic organization, demography, energy development-related community studies, and the local impacts of out-of-basin irrigation water transfers on water exporting communities. Ken holds a Ph.D. in organizational management and human resources from the University of Colorado.

## **APPENDIX B: SPECIFICS OF THE SCHEDULE**

Five months in advance: Begin planning meetings with representatives of MMS and LUMCON.

Two months in advance: Begin teleconferences with the facilitators.

One month in advance: Packet for participants mailed.

Three weeks in advance: Telephone interviews by facilitators with one third of participants.

Tuesday night/Wednesday morning: Participants arrive in New Orleans.

Wednesday, 11:00-11:30 am: Participants picked up by bus at designated locations travel to LUMCON (coastal Louisiana) for field trip.

Wednesday, 2:00-6:00 pm: Offshore field trip.

Wednesday, 10:00 pm: Participants arrive at conference center.

Thursday, 9:00 am: Plenary session to decide division of labor for work groups, and guiding principles.

Thursday, 2:00 pm: Work groups meet.

Friday, to 1:30 pm: Work groups meet.

Friday, 1:30 pm: Plenary session to provide feedback to work groups.

Friday, 3:30 pm: Work groups meet.

Saturday, to 10:00 am: Work groups meet.

Saturday, 10:00 am: Plenary session to present projects and rank.



**APPENDIX C: IMPACTS, TEMPORAL PHASES, AND IMPACTED SYSTEMS<sup>1</sup>**

	TEMPORAL PHASE		
SYSTEM IMPACTED	OPPORTUNITY/THREAT	DEVELOPMENT/EVENT	ADAPTATION/POST-DEVELOPMENT
PHYSICAL	Anticipatory construction or lack of maintenance, decay of existing structures and facilities	Potential massive alteration of the physical environment, construction of new, and upgrading of existing, facilities.	Loss of some uses due to the exploitation of others, deterioration of alternative productive facilities
CULTURAL	Initial contact, new ideas, potential for loss of cultural continuity	Suspension of activities which assure cultural continuity, e.g. subsistence harvest	Culture change, loss of unique knowledge and skills, loss of alternative perspectives
SOCIAL	Organization, investment of time money energy for support or resistance, initial construction of risk	Population increases, influx of outsiders, decline in density of acquaintance-ship, social change	Alteration of human capital, through refocus on skills with limited optional applications, organization loss
POLITICAL/ LEGAL	Litigation to force or block proposed development	Intrusion of development activity into community politics, litigation and conflict over activity impacts. Decreasing capacity of community facilities and services.	Zoning and regulatory changes as development dependent communities seek new development, new legislation as a result of impacts
ECONOMIC	Decline or increase in property values, speculation, investment	Traditional boom/bust effects, inflation, and entrance of "outsiders" into local labor market	Loss of economic flexibility, specialization of businesses
PSYCHO-LOGICAL	Anxiety, stress, anger, gains or losses in perceived efficacy	Stress associated with rapid growth, "social Pathology" family violence, loss of efficacy	acquisition of coping strategies potentially mal-adaptive in the future

**METHODOLOGIES  
TEMPORAL DIMENSIONS AND SCALE**

TIME	INDIVIDUAL/FAMILY	COMMUNITY	REGIONAL	INTERNATIONAL
FORECASTS OF FUTURE IMPACTS				
PRESENT CONDITIONS				
ANALYSIS OF PAST IMPACTS				

<sup>1</sup> Adapted from Gramling and Freudenburg 1992

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## BASELINE STUDIES

These broad baseline studies provide the fundamentals upon which a research program can be built. They are listed in the order of ranking by the workshop participants.

### Title

**An Assessment of the Historical, Social and Economic Impacts of OCS Development on Gulf Coast Communities.**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 3 Years/ 6,000 professional person hours<sup>1</sup>

Applicable planning area: Gulfwide

### Description of Proposed Project

#### Objective:

To provide an assessment of the past effects of OCS development on the economic, demographic, public service, fiscal and social dimensions of counties in the Gulf Coast Region.

#### Methods/Study Design:

The contractor shall conduct a thorough analysis of the impacts of hydrocarbon related developments, including separate analyses of OCS developments, on the socioeconomic characteristics and conditions of counties and parishes throughout the Gulf Coast area. The study area will include all counties and parishes along the Gulf Coast. The analyses will be conducted using primarily secondary data sources. The study period over which impacts are to be assessed is the period from 1930 through 1990. Data sources will include (but not be limited to) the decennial censuses, censuses of business and governments, County Business Patterns, employment data from state employment agencies, tax and revenue records from state and local employment offices, data on service facilities, equipment and personnel in counties from state and local sources, data from state and/or local energy-related agencies, newspaper records and other data sources appropriate for content and/or other forms of qualitative analysis, data from Federal Agencies including the Minerals Management Service, the U.S. Department of Energy (and their predecessors), and other applicable sources.

Potential impacts to be assessed will include those in five broad areas--economic, demographic, public service, fiscal, and social. In the area of economic impacts, an assessment should be made of the impacts on employment, income and business activity. In the area of demographic impacts, the analysis should include an examination of changes in population size, impacts on the population processes of fertility, mortality and migration and impacts on the characteristics of the population including age, sex, race/ethnicity, and household composition. Public service impacts to be assessed should include impacts on service facilities, equipment and personnel for such services as police, fire, water and sewer, education, health and medical care (including hospital and emergency services), transportation, social services, and other relevant services. The fiscal impacts examined should include revenues by source and expenditures by type for county, city and school districts. The social

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<sup>1</sup> The "Proposed Period of Performance/Level of Effort" for each project description assumes a stand alone project. In an integrated program of research, where studies could build on the information collected during previous studies, these levels of effort could appropriately, in some cases, decline.

impacts to be assessed will be limited due to the form of data to be used but should include an examination of secondary sources in an attempt to discern residents' perceptions and/or reactions to oil-related developments and the changes that occurred in such social institutions as churches, schools, governments, and businesses as a result of oil-related activities. Due to the nature of the social analysis, the contractor may wish to limit this phase of the analysis to a sample of communities within counties which have been selected to be representative of key social and economic characteristics of the Gulf Coast.

The contractor should clearly specify the methodological and statistical procedures to be utilized to identify the unique effects of gas and oil related activities over the course of the study period. Such techniques might include (but need not be limited to the use of) comparisons of oil-impacted and non-impacted counties, time series analysis techniques and other multivariate forms of analysis, multidimensional modelling techniques and other techniques. The contractor should also specify the time periods for which impacts will be reported and the exact types of impacts to be assessed, as well as the exact and detailed methods to be used in each part of the analysis. It is assumed that the contractor will be thoroughly familiar with the literature on socioeconomic impacts, the impacts of oil-related developments and the Gulf Coast area and will use this knowledge to design the proposed project. The contractor should include analysts with appropriate experience from such areas as economics, sociology, demography, anthropology, and related fields.

### **Products**

Deliverables should include a comprehensive report analyzing the impacts of oil-related development with separate sections on each of the economic, demographic, public service, fiscal, and social dimensions. Results shall be described separately for onshore, State offshore, and OCS related impacts. In addition, historical time series data sets should be prepared for dissemination and use by MMS along with appropriate documentation for the use of such data. These data sets shall be prepared to provide data at the county and other appropriate levels and must be accessible using widely available public or commercial software.

### **Justification**

There is insufficient information about the past impacts of oil-related and OCS development on the Gulf Coast. A first step toward the development of effective decisions about current and future leasing is to obtain information about the past impacts of such developments. The proposed analysis is essential to establish baseline data for more in-depth analysis of socioeconomic impacts of OCS development and will allow MMS to identify impacts, both positive and negative, on the Gulf Coast.

### **Current Status of Information on this Topic**

No comprehensive assessment of the past socioeconomic impacts of oil-related and OCS activities has been completed. Although studies have been completed for selected communities, most have been EIS-related analysis of projected, rather than actual impacts. As a result, it is impossible to discern the full range of impacts and the magnitude of the positive and negative impacts resulting from such activities.

### **Applicability of Information to Issues of Regional or Programmatic Concern**

The proposed study will provide essential data for decision making. Without knowledge of the past impacts of developments, it is impossible to have the data base essential to accurately project the future impacts of such developments and to design programs to enhance the positive and avoid the negative impacts of development efforts.

**Qualifications**

Sociologists, anthropologists, economists, with appropriate credentials in socioeconomic impact assessment.

**Title****Consequences of OCS oil and gas activities for individuals and families**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 3-5 years/8,000 professional person hours

Applicable Planning Areas: Gulfwide

**Description of Proposed Project****Objectives:**

1. To provide a review and analysis of information on the impacts of OCS oil and gas activities on individuals and families, giving special consideration to the historical aspects of change in the Gulf of Mexico oil and gas industry, including technological change, resource depletion and the overall patterns of boom and bust.
2. To design a system to monitor impacts.

**Methods/Study Design:**

The research will have six main components:

1. A comprehensive review of the literature on the impacts of offshore oil and gas activities (including the international literature on other resource industries and other commute work systems) (Est. 5% effort)
2. Review and analysis of secondary data (from such sources as social services, census, tax rolls, employment, and other official statistics), and key informant interviews on the effects of offshore oil activity, and especially boom and bust, on individuals and families. (Est 15% effort)
3. Ethnographic study to identify and explore in depth key issues and concerns. (Est. 35% effort)
4. A questionnaire survey to establish the responses and adaptations of individuals and families to involvement with the offshore oil and gas industry. (Est. 25% effort)
5. Analysis of ethnographic and quantitative data. (Est. 10% effort)
6. Synthesis of findings and review of policy implications of the above research; this will include the design of a monitoring system to track the ongoing implications of changes in industry activity. (Est. 10% effort)

The sampling strategy will ensure the selection of representative communities and the use of a variety of techniques (e.g., random and snowball) to select individuals/families/households within communities. Special attention will be paid to the selection of a strata of OCS and non-OCS workers.

Issues to be addressed will include the implications of OCS oil and gas activity for:

Migration (including attitudes towards migration)

Socialization

Social Problems

Public and Social Services

Individual and Familial Adaptation

Employment (both OCS involved and non-OCS involved)

Education and Training

Marriage Patterns

Family and Individual Health

Explicit consideration will be given to variations in impacts over time and between regions, and the distribution of benefits and costs among families and individuals.

**Products**

The deliverables will include a comprehensive report describing the research findings and describing the implications for future action. In addition, contractors will be required to provide anonymous, disaggregated data sets in a format specified by MMS, and to produce no fewer than four professional papers that will be submitted to peer-review journals.

**Current Status of Information on this Topic**

While there is a range of international studies on this topic, from such areas as the Gulf Region, Norway, Scotland, and Atlantic Canada:

- few of these address the particular responses of individuals and families to uncertainties with respect to changes in industry activity;
- few of these contain adequate time depth to describe the impacts through the cycle of fluctuations which occur in the offshore oil and gas industry;
- many of them focus on the particular impacts of the commute work system and pay insufficient attention to the broader impacts on individuals and families involved with conventional work patterns; and
- the Gulf Coast is unique in terms of the scale and intensity of operations, but has been subject to very limited research efforts.

**Applicability of Information to Issues of Regional or Programmatic Concern**

Recent changes in activity of the offshore oil and gas industry highlight the need to understand the implications of such change on families and individuals, and hence, on governmental systems. The present study is seen as essential to the establishment of such an understanding.

The study will improve decisionmaking by providing essential information on impacts of the offshore oil and gas industry on families and individuals. The study will have implications for communities, states, and other jurisdictions concerned with the provision of human services, infrastructure, and labor market planning. This information will be valuable in the improvement and enhancement of Environmental Assessment documents produced by the Agency.

**Qualifications**

Anthropologist, Economist, Sociologist, Geographer and Human Services professionals with appropriate skills and familiarity with the issues and/or area.

**Title****Socioeconomic issue analysis of Gulf of Mexico OCS Oil and Gas Activity**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 1 year/2,000 professional person hours

Applicable Planning Area: Gulfwide

**Description of Proposed Project**

If the research program and individual initiatives developed at the Socioeconomic Research Agenda Workshop are going to be truly effective in enhancing the research and policy initiatives of MMS they must be timely and grounded in the perception and realities of stakeholders throughout the Gulf of Mexico region. For this reason, an essential complementary study to the preparation of this research agenda is an issues analysis which consults with the stakeholders. This research will serve to reinforce some initiatives and redirect others, and may also result in the identification of additional study requirements.

**Objectives:**

- To identify the socioeconomic issues and concerns related to the Gulf of Mexico oil and gas activity that are seen as being important by different major stakeholders and other knowledgeable individuals.
- To focus research and management efforts effectively on issues of public policy significance.
- To further enhance research and management initiatives by ensuring their relevance to stakeholders concerns.

**Methods/Study Design:**

The research will have five major components:

1. A review of existing information on key stakeholder groups and their concerns. This will involve both a literature review and key informant interviews.
2. The selection of sample communities. Developed out of the previous component, this will use a stratified sampling technique to identify communities to be studied. These will be selected on the basis of such things as: proximity to OCS activity; nature of activity; and size of community.
3. The identification of key informants: In each of the selected communities key stakeholder informants will be identified using a 'snowballing' technique.
4. Key informant interviews. These interviews will solicit opinions as to the important issues and concerns with respect to OCS activity, and potential studies to address these.
5. Analysis and reporting.

**Products**

A final report reviewing information from the key informant interviews, identifying the issues and concerns and their implications for research and policy initiatives.



**Justification**

This project will involve consultation with all major stakeholders at the onset of the overall research program. It will ensure that key issues and highest priorities are identified by those most affected by OCS activities. The results will serve to provide MMS with future guidance and justification in the choice of a specific research agenda.

**Current Status of Information on this Topic**

To date no comprehensive attempt has been made to determine stakeholders' concerns regarding socioeconomic implications of OCS activities.

**Applicability of Information to Issues of Regional or Programmatic Concern**

The project will ensure that MMS research and policy initiatives focus on issues of real concern to the individuals, communities and other stakeholders. In addition, social science research has demonstrated that the most effective means of public/agency/industry interaction to facilitate the completion of projects with socioeconomic and biophysical impacts is to involve the public and other stakeholders in the process from the beginning, including the identification of their concerns.

**Qualifications**

This study will require social scientists with demonstrated experience with issues identification and familiarity with socio-economic impact issues, especially related to offshore oil and gas.

**Title****Case Studies of Gulf Communities: Analytic and Comparative History of Gulf Impacts of OCS Development Alternatives**

Region: Gulf of Mexico

Proposed Period of performance/Level of Effort: 2 years

Case Studies: 4 person months of fieldwork and 4 months for write-up per case study for a total of 56 person months. Community ethnographers with experience in using archival/historical sources and secondary socioeconomic data. MA with 6 months of field research experience.

History: 6 months for research and writing. Ph.D social or economic historian with experience in modern Gulf coast history and interpretation of socioeconomic data.

Supervisory: 2 years half-time supervising and report preparation for a total of 10 professional months. PhD social science or historian with experience in community ethnography and/or local history.

Total: 72 professional months, 12,000 hours.

Applicable Planning Area(s): Western Gulf, Central Gulf, Panhandle Florida

**Description of Proposed Project:****Objectives:**

To provide an analytical history including six to eight case studies that represent the range of community adaptations through time to the effects of OCS activities. This analysis can be used to (A) assess the socioeconomic effects of past OCS activities, (B) project potential future effects of OCS activities in the Gulf Region and other areas, and (C) guide the development of possible monitoring and mitigation activities.

**Methods/Study Design:**

Analytic framework: This study, while focusing on events and developments (social, economic, demographic, and political) unfolding in the sample communities, will set them in the larger field of events and processes, national and international.

As an historical effort the study will be chronological. The principle organizing this chronology is causal. It will emphasize what may initially be assumed to be the causes of effects that constitute the impacts experienced by the sample communities. These causes may include not only local offshore oil activities but more distant matters as, for example, WW II, the Arab-Israeli War of 1973 and the ensuing oil embargo, and the Exxon Valdez spill and its effects on American attitudes toward OCS development. Impacts on the affected communities will be articulated to a time-line composed of such events. While focusing on the impacts on the sample communities, it is recognized that these effects spread out from the localities in which they were first felt to the state and even to the nation. Although the study is ultimately concerned with socioeconomic and not physical impacts, the distinction is not a clear one. For example, the proliferation of canals, especially when combined with subsidence, has effects upon interactions between salt and freshwater which, in turn, have socioeconomic effects. These interactions must also be considered. The dimensions of impacts, to the extent that they can be ascertained, must also be included. Among these are the magnitude, duration and reversibility of impacts.

An account of the responses of the sample communities to the impacts identified will also be set in the chronology. Inter-community similarities and differences will be compared and an effort will be

made to account for them. Attention will be paid to differences in the impacts experienced in various sectors of each community-- individuals, families, classes and ethnic groups, businesses, community services, and governments. The responses of various components of the communities, as well as communities as wholes, will be examined.

An analytic conclusion will identify the general classes of causes, and differences in the ways they play out in different social cultural, political and environmental settings. An attempt will also be made to identify the classes of responses, and differences in their availability and effectiveness. On the basis of these generalizations, recommendations will be made for mitigation, and strengthening the adaptive capacity of the communities, and components of communities for monitoring and for planning.

Ethnographic fieldwork will be the primary method used. The study envisions approximately 4 to 6 months of fieldwork in each community. We anticipate that write-up of this fieldwork will take between 2 to 3 months. While it may be necessary to assign one ethnographer to each community, the comparative aspects of this study will be optimized by assigning each field worker to two communities.

Fieldwork among the communities will be coordinated to ensure that the 6 to 8 community ethnographies are comparable (e.g., they cover the same topics in detail, they will employ the same protocols and the same data sources when available). A mix of methodologies will be employed that will balance more formal approaches (e.g., random-sample questionnaires, structured protocol-based interviews) that provide statistically valid generalizations with the more ethnographic approaches that provide contextual understanding.

This study will provide the historical background on how the study communities responded to offshore oil development. While focusing on the experience of each community, this history will also consider regional, national, and international events and processes that contextualize or, even caused, community reactions. However, the research will focus on the periods after the beginning of offshore oil exploration (1930s).

Topics to be addressed in this research will include:

- formal history of community development including the significant economic and social processes that led to community incorporation.
- significant genealogical investigation to determine the role that kinship plays in community recruitment.
- historical profile of employment within the community that details changes in employment by occupation over time.
- the business and purchasing patterns of the community over time. What are the links of the retail sector with the regional economy.
- the history of significant community organizations, including churches, school organizations and so forth.
- the social services the community receives and what level of problems they address.
- the communities administrative entities, how people are recruited to serve and what has been their success in planning for the vicissitudes of OCS development.
- the activities of everyday life, how these activities vary by gender, age, ethnicity, occupation and other factors.
- the population of the community over time, factors influencing migration and stability.

**Scope:** The geographical range of the study is from Texas to the Florida Panhandle. Six to eight representative communities will be selected based on criteria related to the levels and nature of OCS involvement. The typology will be developed using the findings of prior studies (i.e., Assessment of Social and Economic Effects, Issues Analysis of Community Concerns) and a secondary literature review. The criteria for selection may include such issues as: study design criteria (e.g., affected communities vs control communities); intensity of involvement with offshore oil activities; community specialization of response to OCS activities (e.g., staging area, administrative center, mixed fishing/support facilities); regional and historical differences (e.g., state in which located, legal regimes).

### **Products**

1. Historical overview of community impacts
2. 6-8 case studies of community adaptation
3. Analytical comparison of community adaptation, with recommendations for monitoring and intervention.

### **Justification**

This study will provide the first systematic understanding of the community level effects, and responses to those effects, of offshore oil development. As such, it will lead to a better understanding of future developments in this region as well as others with OCS hydrocarbon development potential. It will also provide important data to support the design of a social and economic monitoring system.

### **Applicability of Information to Issues of Regional or Programmatic Concern**

The community is one of the key contexts for social and economic activity. It is the primary arena in which people collectively respond to the challenges of change stemming from OCS activities. For this reason, this study provides an understanding and evaluation of these community based processes. It will provide an information base to guide decision making, mitigation and monitoring activities in the Gulf and will shed light on projected community processes and impacts elsewhere.

### **Qualifications**

MA with 6 months of field research experience for case studies; PhD social or economic historian for historical study; PhD in social science or local history for project director.

**Title****A Study of the Impacts of Decline in OCS Activities in the Gulf of Mexico**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 2 years/6,000 professional person hours

Applicable Planning Areas: Central and western Gulf

**Description of Proposed Project****Objectives:**

1. To examine in a detailed fashion the effects of the decline of OCS activities on a sample of Gulf coastal communities;
2. To delineate how these effects change over the phases of OCS operation;
3. To design a monitoring program to follow these effects in the future.

**Methods/Study Design:**

The methods will be primarily ethnographic and historical combined with appropriate quantitative analysis of secondary data. The methods will follow the process outlined below:

**Sample Selection**

1. The sample should represent, to the extent possible:
  - a. The community specializations concomitant to OCS gas and oil activity, e.g. staging areas, onshore oil and gas processing centers, supply and support areas, administrative centers, communities maintaining mixed economies;
  - b. Regional differences (Texas, Louisiana, Mississippi);
  - c. Possibly phases noted below;
  - d. Sample size depends on funding available
2. To the extent possible the communities included in the project description entitled "Case Studies of Gulf Communities:..." should be the communities included in the sample for this project.

**General Discussion of Decline**

1. Complexity of process (overlapping phases)
2. Phases
3. Partial reversibility of process in response to exogenous factors.

**Community Characterization**

Community profiles emphasizing degrees of specialization and factors bearing on vulnerability to impacts and capacities of communities and components of communities to respond to them.

**Examination of Phases**

Phase 1 - Changes from a predominantly exploratory/development phase to a predominantly production phase.

1. Events and processes
  - a. forces driving these events and processes
2. Effects in communities on:
  - a. demographics
  - b. employment
  - c. governance and public revenues

- d. public services
- e. businesses
- f. social organization
- g. individuals
- h. health
- i. physical environment, both natural and constructed
- j. aesthetic
- k. etc.

3. Responses of individuals, families, businesses, communities, local governments, state and federal governments, and comparative effectiveness of responses

Phase 2. Effects of change from production dominated by major operators to production dominated by small operators.

1,2,3 as in D, with appropriate additional matters (such as increased possibilities of platform abandonment) also considered.

Phase 3 - Decommissioning and Termination

1,2,3 as in D and E, with appropriate additional matters considered.

#### Analysis and Recommendations

1. What characteristics make for adaptive responses
2. Recommendations
  - a. Building adaptive capacity into community structure?
  - b. Retraining individuals?
  - c. Alternating uses of existing infrastructure and plant?
  - d. etc.

#### Designing a Monitoring Program

A monitoring program should be designed which considers:

1. The socioeconomic variables discovered to be important in Section III above.
2. Staffing for the monitoring program, e.g.:
  - a. A local person in each community trained to monitor key variables and to transmit information to a key person at MMS Regional office.
  - b. Key MMS personnel charged with analyzing and synthesizing monitoring information and either
    1. Bringing deviations of variables from desired values to the attention of MMS and other designated decision makers;
    2. Initiating Pre-planned response;
    3. Taking other appropriate action.

#### Products

1. Community Studies
2. Overview report summarizing and comparing community studies and generalizing from them, following outline from I-III above.
3. A design for a monitoring program.
4. Periodic monitoring summaries.

**Justification**

Outer Continental Shelf activities in the Gulf of Mexico increased between their inception in 1947 and 1981, remained more or less constant until 1985, and have been declining ever since. This decline has had and will continue to have significant consequences for communities, for businesses, for individuals, and for state, regional and even national economies. It is important, therefore, to ascertain, as precisely as possible, the dimensions, rate and general nature of the decline, what its effects have been for individuals, families, businesses, demands on public services, local governments, etc., how they, and perhaps outside agencies (e.g. state governments), have coped with them, and how they have fared. Such information is necessary

1. to develop ways to mitigate impacts now being experienced;
2. to plan for decline in areas not yet experiencing decline, both inside and outside the Gulf;
3. to develop and get into operation a system for monitoring socioeconomic variables.

**Current Status of Information on this Topic**

There is almost no information on this topic.

**Applicability of Information to Issues of Regional of Programmatic Concern**

Since all indications are that OCS activity is declining in the Gulf, this is an extremely relevant topic.

**Qualifications**

One graduate level social scientist with ethnographic training for each two communities.

One Ph.D. level social scientist with administrative experience for project director and synthesizer.

Monitoring Personnel as indicated above.

**Title****Regional Forecasting/Simulation Model**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 2 years/4,000 professional person hours.

Applicable Planning area: Flexible. Can be applied in any number of planning areas.

**Description of Proposed Project:****Objectives:**

To develop a regional forecasting/simulation model which will provide estimates of potential economic, demographic, public service, and fiscal impacts associated with proposed OCS leasing activities and their respective development scenarios.

**Methods/Study Design:**

The Contractor shall conduct a thorough review and analysis of techniques utilized in predicting/estimating the socioeconomic impacts of resource development in other regions (Alaska, western energy states). The Contractor also shall prepare a detailed conceptual design report outlining the proposed structure of the impact assessment model, including specific methods and data bases to be used in each major module. Following review and approval of the conceptual design, the Contractor shall develop appropriate data bases and a computer software system to implement the model. The modeling system must have the capability of addressing impacts at both regional and community levels. The model should possess the flexibility to be used for any desired region, i.e. group of counties, state, planning area. The model should be a long-term simulation tool capable of estimating impacts 35 years into the future. The Contractor will provide a listing of all data sources to be used in the model. The model should be user-friendly and enable easy data updates.

Impacts to be addressed shall include at least the following:

- Economic - employment, income
- Demographic - population by age and gender, migration
- Public and quasi-public services - including housing, health care, primary/secondary schools, water, sewer, solid waste, etc...
- Fiscal - public sector revenues and costs for counties/parishes, municipalities, and school districts.

Output reports will be produced at a number of pre-specified levels of detail including county, state, planning area, and/or any other grouping of counties. The model's projections should be on an annual basis.

**Products**

Deliverables shall include a conceptual design report, a technical description/documentation report, appropriate software, and a User's Manual.

**Current Status of Information**

Several integrated impact assessment models have been developed and used to predict/estimate impacts of resource development in rural areas of the Western U.S. (Murdock and Leistritz 1980, Leistritz and Murdock 1981, Mountain West Research 1982) and in Alaska (Leistritz et al 1985, ISER 1984). Some projects aimed at developing models and data bases that can be useful in projecting socioeconomic impacts have been funded by the MMS Gulf Region.



**Applicability of Information to Issues of Regional of Programmatic Concern**

The Regional Forecasting/Simulation Model will assist in the assessment of potential socioeconomic impacts resulting from proposed OCS leasing activities. It will serve as a basis for the socioeconomic analysis necessary for the EIS, which is a key decision making document for the MMS.

**Qualifications**

The Contractor should demonstrate substantial experience/expertise in (1) assessing/modeling economic, demographic, public service, and fiscal impacts, and (2) developing computer software systems. The Contractor's proposal should demonstrate substantial familiarity with previously developed socioeconomic impact assessment models.

## **POLICY RELATED STUDIES**

The following studies focus on the implications of, or ways to derive and refine, policy. They are presented in the order of ranking by workshop participants.

### **Title**

**Mitigation Strategies for Addressing Socio-economic Impacts From Offshore Oil and Gas Activities**

Region: Gulf of Mexico

Proposed Period of Performance: 2 years/5,000 professional person hours

Applicable Planning Areas: Gulfwide

### **Description of Proposed Project**

Objectives:

Mitigation approaches are an important element in the management of the socioeconomic impacts of OCS activities-- they can help local, state, and federal decision makers to offset and alleviate negative consequences and to enhance positive socio-economic benefits.

There is little available information on the extent to which and how effectively mitigation approaches have been used in the past in the Gulf region. In other nations, however, mitigation approaches have been extensively used and have helped in maximizing positive benefits and avoiding or alleviating negative ones in both the growth and decline phases of oil extractive activities.

Lessons learned from these comparative experiences can be useful to Gulf decision makers at the local, state, and federal levels as they address problems of decline in offshore activities in the Western/Central Gulf and potential growth in the Eastern Gulf Region.

### **Methods/Study Design**

The major purposes of the study are fourfold:

1. To examine the range of mitigation approaches that have been used in the Gulf region by federal, state, and local decisionmakers since the inception of OCS activities in 1954 to present, with particular emphasis on the post 1969 period following the passage of the National Environmental Policy Act and other relevant federal laws which affect the conduct of OCS activities, such as the Coastal Zone Management Act.
2. to examine and assess the range of mitigation approaches that have been utilized in other cases of offshore oil development, such as in other regions of the U.S. OCS (e.g., California, Alaska), and in other nations (e.g., Canada, the North Sea).
3. to focus specifically on a set of cases of mitigation efforts in situations of decline in resource extraction activities to gain insight into the kind of measures that can be utilized to alleviate problems associated with decline conditions.
4. to critically assess the extent to which and how various mitigation strategies can be specifically tailored to fit Gulf of Mexico conditions and needs in both decline and potential growth contexts.

More specifically:

1. Study of past use of mitigation measures in the Gulf region

This part of the study will examine the extent to which and how effectively strategies and practices have been implemented by decision makers (federal, state, local) to mitigate negative socio-economic consequences and to maximize benefits in the Gulf Region. The research would rely on: analysis of key documents (such as lease sale stipulations), and informal interviews with key informants at the state level (e.g., Governor's staff responsible for commenting on OCS leases, coastal zone management personnel responsible for making federal consistency determinations) and with key local informants in a number of selected communities most affected by offshore development.

2. Examination and assessment of mitigation strategies employed in other offshore oil cases

This part of the study would examine and assess the range of mitigation approaches that have been utilized in other cases of offshore oil development in other regions of the U.S. OCS (e.g., California, Alaska), and in other nations (e.g., Canada, and those bordering the North Sea). Examples of such mitigation strategies include:

- measures to encourage employment of locals
- building of local schools, housing, other infrastructure
- sharing of revenues with local communities
- compensation or offsets to other users of the marine environment (such as commercial fishermen)
- training programs
- purchase of lands for recreational use
- financial support to ensure the survival of traditional industries

The study would examine the way in which these mitigation strategies were adopted, the role of local, state and federal authorities in this process, the mechanisms utilized to impose mitigation measures (e.g., binding negotiated agreements, permit conditions, memoranda of understanding), the extent to which monitoring enforcement systems of compliance with mitigation agreements have been established and their effectiveness. The study would also differentiate the types of mitigation measures that can be used at different stages of the OCS leasing, exploration, development, production, and termination process.

3. Specific studies on mitigation to alleviate problems associated with decline conditions

Because decline conditions currently prevail in the Central Gulf region, this part of the study will examine the experience with mitigation measures in a number of cases of decline in the extraction of energy resources such as oil. Considering the offshore oil situation around the world, it is difficult to find examples of large scale decline, although some experience with termination of offshore activity after the exhaustion of particular oil fields may be found in state waters in the U.S., both in California and Alaska. These decline and termination experiences, however, may not be truly analogous to the current situation in the Central Gulf which represents much larger scale and broadly based decline phenomena. Hence, it may be more appropriate to consider the experience of cases related to the decline of energy extractive activities onshore. Possible cases include the decline in the exploitation of Williston Basin (North Dakota/Montana), oil shale development in Western Colorado, uranium development in Wyoming and New Mexico. Mitigation strategies that can be applied in cases of decline include such measures as:

- education and retraining of workers
- assistance with job searches and relocation
- local and state planning for economic diversification
- encouragement of alternative uses of existing hydrocarbon related infrastructure

- encouragement of the development of suitable alternative coastal dependent enterprises
- revenue assistance to communities undergoing decline
- forgiveness of loan payments
- establishment of community insurance funds

#### 4. Application--"tailoring" of mitigation approaches to the Gulf situation

The final part of the study would critically assess the extent to which and how various mitigation strategies can be specifically tailored to fit Gulf of Mexico conditions and needs (of both growth and decline scenarios). A specific set of approaches would thus be presented for consideration to local state, and federal decision makers in the Gulf of Mexico.

#### **Products**

Four major products would be prepared through the project: 1) a summary of past mitigation measures in the Gulf region; 2) analysis of the range of mitigation measures (for both growth and decline) which have been utilized in other offshore oil cases; 3) analysis of the specific mitigation measures which can be utilized to alleviate problems associated with decline conditions; and 4) analysis of the range of mitigation measures that would be of most use to meet specific Gulf of Mexico conditions and needs. These products would be prepared in two versions: as documents targeted to local, state, and federal decision-makers in the Gulf of Mexico, and as articles to be published in peer-reviewed journals.

#### **Justification**

Through the adoption and implementation of appropriate mitigation strategies, federal, state, and local decision-makers can effectively maximize positive socioeconomic benefits flowing from offshore oil development and alleviate negative consequences. This project would be very useful to decision-makers through the analysis of the range of mitigation alternatives that is potentially available and the subsequent tailoring of appropriate approaches to the Gulf of Mexico situation (covering both situations of potential growth in the Eastern Gulf Region and of decline in the Western/Central Gulf Region).

#### **Applicability of Information to Issues of Regional or Programmatic Concern**

The Study would be of use to Gulf decision makers (state, federal, local) in their efforts to address scenarios of both growth and decline in different Gulf subregions.

The Study would also be of interest to the national MMS office, to other MMS regional offices and to other federal agencies concerned with offshore management facing similar problems of growth and decline.

The assessment of mitigation approaches would be of interest, as well, to local, state and federal decision makers in other regions of the U.S. OCS. Recent evaluations of the MMS Environmental Studies Program by the National Academy of Sciences have stressed the need for "learning" among regions in the U.S. and from comparative experience where appropriate. This comparative study of mitigation measures would fill an important gap in understanding of the range of mitigation measures that can be used in different stages of the offshore oil and gas development process and their likelihood of success.

**Qualifications**

Expertise in political science/public administration/policy analysis with suitable background in marine policy and comparative experience on offshore oil development.

**Title****MMS Policies and Processes Affecting Socioeconomic Impacts**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: Initial documents 1 year 2,000 hours. Later deliverables 2-3 year/2,000 professional person hours.

Applicable Planning Areas: Gulfwide

**Description of Proposed Project****Objectives:**

To identify for the MMS those existing policies that are related to socioeconomic effects. The products will provide an available reference on the breadth of policies potentially considered in further analyses. Three short documents will summarize: 1) the existing policy levers used by MMS that are proximately related to socioeconomic impacts, 2) the existing MMS models for analyzing the socioeconomic impacts of their policies and 3) the current status of monitoring and enforcement of the identified policy levers. A fourth document will be a pilot study of one of the policy levers identified in the first catalog of MMS policies.

**Methods/study design:**

The four documents are based on review and analysis of MMS materials, and interviews with MMS, state, local and other personnel.

**Products**

The first document, a short catalogue of existing policy levers, will require social scientists to identify those specific MMS regulations, stipulations, and policies that are proximately related to socioeconomic impacts. For each specific policy a short description will identify the probable links to socioeconomic issues. For instance, regulations, lease stipulations and policies related to worker safety, to recreation, to bid acceptance, to state, local and public participation and to the level of industry activity would be identified along with corresponding socioeconomic issues.

The second short document will survey the existing status of monitoring and enforcement of the policies identified as relevant. This will require interviews and access to MMS data to describe the current status. The third short document will survey the MMS modeling and data bases available for socioeconomic analysis in the Gulf. Other MMS regions will be contacted to determine the transferability of socioeconomic models that may be available.

The fourth document will select one of the key policy levers in order to conduct an assessment of current practice and proposed alternatives. An example might be to assess the historical implications of the allocation of funds produced from the Gulf of Mexico region. The socioeconomic implications of different allocations of funds such as revenue sharing with the states could be investigated.

**Justification**

Both MMS and public audiences can benefit from a scoping identification of those current MMS policies and processes that affect socioeconomic impacts. Such an identification may sensitize the responsible official to consider the socioeconomic implications of existing and proposed changes in policy. This scoping process will also identify the existing socioeconomic analysis capacity of the Gulf of Mexico region. The process will identify both significant and more minor policy levers of the MMS.

A pilot study will illustrate the socioeconomic implications of an existing policy and consider the socioeconomic implications of alternatives. The example mentioned, past uses of revenue and the implications of revenue sharing, can identify the direct beneficiaries of past Government revenues from the OCS and consider how that may change with alternative proposals. Decisions that could conceivably be changed include the details of revenue sharing proposals and the design of national leasing programs that address the OCSLA consideration of equitable sharing of costs and benefits.

**Current Status of Information on this Topic**

No targeted compendium of this sort exists. Implicit in discussions in the 5-year plan, lease sale documents, regulations, the OCS National compendium and books by Mead and Farrow, et al. are policies and regulations with proximate socioeconomic impacts.

**Applicability of Information to Issues of Regional or Programmatic Concern**

Because socioeconomic research is a relatively new area of concern to the MMS, it is important to understand those existing policies and regulations that have socioeconomic impacts. A variety of socioeconomic impacts will be found to be already addressed while others may not have been considered. The information will be useful to identify actions and policy levers for which MMS can or has taken responsibility.

**Qualifications**

Multi-disciplinary but to include a regional impact economist, a industry organization or environmental economist, and a sociologist. A steering committee may be able to guide the work of a more general staff researcher.

**Title**

**Monitoring Socio-economic Impacts of OCS Activities in the Gulf of Mexico Region.**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 1 year, 1,500 professional person hours.

Applicable Planning Areas: Gulfwide

**Description of Proposed Project**

Objectives:

To provide a review and analysis of socio-economic monitoring practices which could be used as the basis for similar monitoring programs in the Gulf Region.

Methods/Study Design:

Conduct a thorough review, analysis and synthesis of monitoring practices, specifically designed for impact management purposes, in the Gulf Region, other OCS regions and other jurisdictions such as Canada and the North Sea. The review would include, but not be limited to, an examination of monitoring rationale; responsibility for monitoring; organizational structures; choice of variables monitored; frequency of monitoring; information reporting process; ownership of, and access to data collected; monitoring effectiveness and; the effects of monitoring on management activities.

**Products**

Deliverables shall include a written report summarizing monitoring experience and recommending monitoring practices appropriate to the Gulf Region.

**Justification**

The study would provide data relevant to MMS in:

- the preparation of environmental assessments; and
- assisting state and local authorities in designing monitoring programs to manage impacts of OCS activities in their respective regions.

**Current Status of Information on the Topic**

There have been a number of studies documenting monitoring programs in various jurisdictions (e.g., Alaska, New Zealand, Canada). One conclusion is that, while there have been numerous examples of monitoring programs, relatively few have been effective in providing useful and timely data for management purposes. The present study would provide information on a process that would help maximize the utility of data collected for impact management in the Gulf Region.

**Applicability of Information to Issues of Regional or Programmatic Concern**

The study would review actions taken by federal, state and local authorities in the Gulf Region and provide comparisons with experiences in other OCS jurisdictions and elsewhere in order to inform MMS about the effectiveness and effects of such monitoring actions to date and to provide recommendations with respect to future actions. Such information will be of direct use to those responsible for the preparation of environmental impact statements and, in addition, will provide assistance to states and local authorities directly affected by OCS activities.

**Qualifications**

Social scientists with experience with oil and gas activities and with monitoring processes, programs, and practices.



**Title**

**Factors Influencing Industry Restructuring in the Gulf of Mexico, and Government Regulation of OCS activities.**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 2 years/6,000 professional person hours.

Applicable Planning Areas: Gulfwide.

**Description of Proposed Project**

**Objectives:**

1. Examine the factors that inform decisions by the oil companies (large and small) to invest (i.e. gather geophysical data, bid on tracts, etc.) in the Gulf of Mexico (GOM).
2. Model these factors to provide projections of industry restructuring (the proportion of independents to multinationals that will be active in the Gulf).
3. Examine the regulatory and leasing structure of offshore activities in the Gulf (MMS, EPA, USCG, NMFS).
4. Assess the points at which the regulatory and leasing structure will come under pressure due to the projected changes in industry restructuring.

**Methods/Study Design:**

**I. Review of literature concerning;**

- A. industry restructuring
- B. the regulatory and leasing structure of the GOM.

**II. Using loosely structured interviews with industry and agency personnel, and a snowball sampling technique, assess the relative importance of the various factors in industry decision making. Using such factors as:**

- A. Resource supply and price
  1. in the Gulf
  2. in other regions of the world
- B. Available technology
  1. for deeper water operations
  2. for 2nd and 3rd recovery of oil
- C. Government regulations
  1. in the U.S.
  2. in other regions of the world
- D. Public opinion
- E. Leasing schedule

**III. Develop an index of industry structure (e.g., percent of activity captured by the major players).**

**IV. Develop a conceptual model of industry decision making.**

**V. Explore the extent to which such a model can be quantified and standard predictive methods (regression, etc.) can be used to inform projections of industry restructuring (the multinational/independent mix).**

**VI. Using the information gathered under 1-5 above, project the trends in multinational/independent mix in the GOM over the next decade.**

**VII. Assess the extent to which the projected trends in industry restructuring will affect:**

- A. the regulatory environment of OCS activities in the Gulf (where will the pressures on the current regulatory structure come, e.g., need for more monitoring, etc.)
- B. the need to restructure the leasing procedure (i.e., focus the offerings to accommodate the

more limited ability of the independents to gather geophysical data).

C. the need to restructure the bidding procedure for lease sales (e.g., allow for smaller bonus bids, but larger percentage of production profits to accommodate the more modest capital available to the independents).

### **Products**

Deliverables will include a comprehensive report describing both the research findings and the implications for future action. All data collected for model building will be provided in a format specified by MMS. In addition, the contractor will produce no less than 4 professional papers that will be submitted to peer-review journals.

### **Justification**

The multinational oil corporations are currently leaving the Gulf. This raises a number of questions that MMS will have to deal with, concerning future operations in the Gulf:

1. How will this trend affect MMS's regulatory responsibilities, and the regulatory responsibilities of other federal agencies in the GOM?
2. Will it be necessary to alter current (area-wide) leasing procedures in order to accommodate the more modest capital potential for the collection of geophysical data of the independents?
3. Will it be necessary to modify the current bidding procedure for lease sales, allowing a smaller up-front bonus bid, and compensate with a larger percentage of production profit, to accommodate the reduced capital available for investment in the GOM?

This study will provide guidance on these basic issues.

### **Current Status of Information on this Topic**

While there is existing information concerning corporate decision making, which will guide the initial investigation associated with this study, there is little or no information concerning the specific impacts of industry restructuring on the regulatory structure of OCS activities in the Gulf.

### **Applicability of Information to Issues of Regional or Programmatic Concern**

Minerals Management Service is directly responsible for a variety of regulatory functions concerning production in the Gulf of Mexico, and has flexibility in determining the leasing and bidding structure for OCS activities. Knowing where the regulatory structure will come under pressure will allow for planning by Minerals Management Service, and a more flexible leasing and bidding structure may well allow for more optimal continuation of OCS activities under conditions where the multinationals are leaving the Gulf.

### **Qualifications**

Two social scientists with marine policy and industrial organization qualifications.

## **FOCUSED STUDIES**

The following studies focus on one specific aspect or problem associated with OCS activities. They are presented in order of ranking by workshop participants.

### **Title**

**Estimates of OCS Development in the Gulf of Mexico Since 1954: Comparison Between Two Accounting Methods**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: Three years/6-8,000 professional person hours.

Applicable Planning Areas: Western and central Gulf of Mexico.

### **Description of Proposed Project**

Objectives:

Calculate the financial and resource flows that accrued from offshore oil and gas developments in the Gulf of Mexico since 1954 and determine the distribution of those flows.

Apply an alternative method to traditional economic calculations using alternative accounting systems to estimate the financial flows for the same period.

Compare the differences between traditional valuation results and alternative accounting system results (such as the World Resources Institute recalculation of the GNP contribution from Indonesia's offshore oil and gas and timber industries) for offshore activities in the Gulf since 1954.

Methods/Study Design:

1. Develop standard balance sheets, income statements and flow of funds data to report financial and resource flows associated with oil and gas production from the Gulf since 1954.
2. Create a research program to identify appropriate alternative valuation methods for natural resources.
3. Undertake an historical case study of the Gulf over the past fifty years, applying the results of task two. Provide alternative estimates of costs and benefits using these accounting systems to determine the value of the offshore activities as a net contributor to the states and the nation. Of course, a similar study would have to be carried out as a comparison using the traditional methods of valuation.
4. Determine where the benefits went and where the costs occurred; who were the winners and losers.
5. Carry out a prototype study of the proposed offshore leasing areas in the Gulf using the alternative accounting systems to determine the value of the oil and gas resources and the potential costs incurred to the other resources that could be affected as an alternative metric to the traditional method of estimating. Include any new metrics that seem appropriate to give value to those things for which monetary value can not be attributed.

## **Justification**

Offshore oil and gas development has existed on the OCS in the Gulf of Mexico since 1947, yet no systematic accounting has been done to determine the actual value that has resulted from these activities to public, corporate and government groups. Costs, financial and otherwise as well as benefits should be calculated, particularly in view of new public sensitivities about potential health, safety, environmental and socio-economic dislocations.

New types of accounting systems for resource valuation have emerged in recent years. Rather than attributing absolute or gross value to the production of a resource, some economists depreciate its value according to the loss it represents to the resource base and future use of the nation. Hence, one could calculate the net value of oil and gas according to a formula similar to the way industries depreciate physical capital, but instead you are depreciating natural capital.

Another change to resource valuation relates to attribution of dollar values for commodities that have not in the past lent themselves to monetary metrics, but begin to provide some hints of dollar value with greater scientific understanding. In the case of offshore oil development, we are learning how to value the functions of estuaries, for example, so that we can attribute certain value to them as flood control barriers, as water pollution filters, and as the spawning grounds for many marine birds and fish, when determining the costs of carrying out the development. All of these functions have intrinsic values that vary according to location and conditions, but at least provide some estimates of monetary value that can realistically be calculated in the equation with the value of an offshore oil development.

In other instances, aspects of coastal habitats and human uses do not lend themselves to these monetary metrics and are often left out of the value calculations. Other measures of value should be estimated to account for the more aesthetic and casual appreciation that access, views, and other amenities might have for coastal users. These measures are far more difficult to argue for in light of the large sums that are involved in valuing offshore oil, yet seem to be important in the discussions of the leasing process.

## **Products**

A Handbook that explains the new valuation methods.

A Report on OCS developments in the Gulf using traditional financial accounting, cost-benefit estimates, and the new accounting systems.

## **Current Status of Information on this Topic**

Farrow (1990), in his plenary talk to the 11th annual GOM ITM meeting, reported results for the traditional analysis for a single year and suggested that extended forms of accounting be considered. The U.S. Dept. of Commerce (Bureau of Economic Analysis) is developing alternative accounting frameworks for natural resources that are to be consistent with satellite accounts in the U.S. (and international) System of National Accounts.

## **Applicability of Information to Issues of Regional or Programmatic Concern**

A clear statement of financial flows is important to communicate the status and changes in policy. The primary current metrics are production and government revenue. This framework links the two.

## **Qualifications**

Resource economist, Marine biologist, Sociologist/Anthropologist, Accountant

**Title****Local Government Capacity to Manage Development**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: Two years/4,000 professional person hours.

Applicable Planning Areas: Central and western Gulf.

**Description of Proposed Project****Objectives:**

Successful management of OCS socioeconomic impacts requires local government capacity and commitment to plan for and manage OCS-induced development and decline. OCS legislation, in fact, mandates capacity building through the provision of data and other assistance to affected states and, through states, to local governments. MMS, other federal agencies, and the states have developed and employ a variety of capacity-building approaches, including provision of data, financial assistance, training, and others. But, little systematic information is available about the capacity-building needs of local governments, the degree to which they have taken advantage of assistance available from federal and state agencies, or the capacity-building techniques which, in fact, are most effective in meeting local needs.

This study would include, but not be limited to, the following questions:

1. To what extent have MMS, other federal agencies, and the states, in fact, undertaken efforts to build local capacity to manage development and decline? Which factors have eased or hindered the development and implementation of such programs?
2. Which capacity-building techniques have been employed? Where? When? How?
3. What is the current capacity of local governments to manage development?
  - a. To what extent has local capacity been enhanced by past and existing MMS and other programs designed to improve their capacity to manage OCS-induced development and decline?
  - b. Which techniques have proven most effective in enhancing capacity? In which local circumstances? At which stages of the OCS development process?
4. What can MMS do in the future further to enhance local capacity to manage the socioeconomic impacts of development?

**Methods/Study Design:**

1. Identify capacity-building programs/efforts of MMS and other federal agencies that have been developed to deal with OCS impacts?
2. Identify capacity-building programs and efforts of Gulf state governments stimulated by OCS development and its impacts.
3. Select a representative sample of local governments from the Gulf states.
4. Gather data on local capacity, local participation in federal and state capacity-building

programs/efforts, and local perception of capacity and need for enhanced capacity through a survey of key informants in the sampled local governments and from documentary evidence, as available.

5. Analyze associations, if any, between MMS and state capacity-building programs and outcomes in terms of local government organizational capacity indicators (financial resources, personnel, data, etc.).

6. Analyze the extent to which programs meet the needs identified by local government personnel.

7. Hold a workshop of federal, state, and local officials to review the study's results and discuss ways that MMS and other federal agencies can respond to capacity-building needs of local governments.

### **Products**

Deliverables include two reports. One is a review and analysis of the capacity of state and local governments to manage the impacts associated with OCS development, state and local officials' perceptions of capacity deficiencies and needs for assistance, and capacity-building techniques used in the Gulf by federal and state agencies (with particular attention to techniques that appear to have been successful). The second is a report of the findings and recommendations of the workshop convened to examine building needs in the Gulf and workshop proceedings.

### **Justification**

Positive socioeconomic impacts may be amplified and adverse impacts mitigated by the actions of state and local governments. For that to occur in beneficial ways, local governments must have the capacity to manage development and redevelopment. Capacity includes adequate and appropriate personnel and financial resources, but it also includes the following aspects of capacity that may or may not flow from adequate personnel and financing: degree of understanding of potential beneficial and adverse effects and of local governments' roles and opportunities in dealing with those effects; knowledge of specific federal and state requirements; knowledge of and ability to implement specific mitigation techniques, and of sources of federal and state assistance; data on local environmental and socioeconomic constraints; and planning and development management processes to work with the private sector to avoid adverse effects and capitalize on development opportunities that will provide community benefits. Because capacity in all of its dimensions is often deficient in communities experiencing OCS impacts, federal and state policy makers have mounted various efforts to augment local capacity. But, the effectiveness of those efforts is unknown, as is the efficacy of specific capacity-building techniques, and for that matter, the perceived needs of local governments. This project would fill those gaps and contribute to the effectiveness of local governments' efforts to cope successfully with the impacts and opportunities associated with OCS development.

### **Current Status of Information on This Topic**

Previous research has identified various deficiencies in local governments' capacity to manage impacts of OCS development, but no comprehensive assessments of past efforts to improve capacity, the efficacy of specific capacity-building techniques, or local governments' perceived needs for augmented capacity exist. As a result, local needs go unmet or are addressed in an ad hoc, trial-and-error fashion; and, opportunities to deal with capacity issues in the EIS process are largely unrealized.

### **Application of Information to Issues of Regional or Programmatic Concern**

This study will improve the process for preparing environmental impact assessments in two ways. First, it will provide additional information on the role of local government capacity in the generation

of socioeconomic impacts from OCS development activities. Since we view capacity as an important factor that may magnify or suppress adverse and beneficial effects, better understanding of variation in local government capacity in the Gulf region should lead to better prediction and assessment of socioeconomic impacts in future environmental impact assessments. Second, because capacity-building is an important class of mitigation techniques, this study will improve the government's ability to use capacity-building as a condition for approval of future OCS development activity.

**Qualifications**

Personnel should have training in planning, public administration, or policy analysis.

**Title****Successful Adaptations of Local Offshore Support Businesses to Changes in OCS Activities**

Region: Gulf of Mexico

Proposed Period of Performance: 2 years, 3,000 professional person hours

Applicable Planning Areas: Western Gulf, Central Gulf

**Description of Proposed Project:****Objectives:**

To identify the factors leading to successful business adaptability in an environment of declining oil and gas-based resources, and to recommend mitigation measures to enhance such success.

**Methods/Study Design:**

The Contractor shall:

1) Conduct a literature search by examining past studies which demonstrate patterns of successful business adaptation to externally-caused declines;

2) Identify trends in relevant data sources (e.g., decennial census counts, Bureau of Economic Analysis, Bureau of Labor Statistics) to discern sectors most effected by declines in particular parishes/counties along the Louisiana and Texas Gulf Coast.

3) Select specific study areas based on 2) above.

4) Pinpoint a series of firms exhibiting a range of adaptive behaviors, over sampling instances of successful adaptation.

5) Determine factors associated with success and those linked to less adaptive strategies paying particular attention to diversification into other industrial sectors and expansion into other geographic regions, to ensure survival or growth.

Explanatory factors to be considered include:

a. Type of product or service. Firms involved in one particular type of business activity (e.g., supply boats, pipe welding) may have greater adaptive capacity than others;

b. Nature of the market;

c. Access to local support networks and/or political influence centers;

d. Regulatory environment. For some firms, tightening regulations may stimulate expansion opportunities (e.g., designing conformance technologies and monitoring procedures); for others, regulation may be deleterious.

e. Changing OCS activities; and

f. Available technologies. For example, substitution of automated equipment for personnel may offer new opportunities for firms with capacities to repair and maintain sophisticated hardware, but hurt firms based on deploying unskilled labor.

6) Synthesize factors identified through research, evaluating the significance and range of applicability of each.

7) Using the findings from above, develop a plan suggesting mitigating measures to facilitate successful business adaptations. These measures might include:

a) Altering regulations;

b) Tax incentives;

c) Information transfer sessions;

d) Work force training programs; and

e) Permitting requirements which anticipate the costs of such mitigation.



**Products**

Deliverables will be an Annotated Bibliography and Data, in addition to an Inclusive Technical Report of 5 through 7 above, bound in hard copy as well as in digital format (Wordperfect 5.1)

**Justification**

Declines in local off-shore support industries represent an important factor in undermining employment and community fiscal health. By identifying factors that would help local business successfully adapt, the negative socioeconomic effects of the OCS development cycle could be mitigated. Acting on the information from a study such as this, MMS could encourage new permits to include provision for such eventual mitigation. MMS may wish to sponsor, coordinate, or collaborate with other governmental and NGO units to facilitate such mitigation.

**Current Status of Information on this Topic**

Although there are extensive data and numerous case studies on general business success found in the business management literature, there are few if any published materials on the factors that facilitate survival or growth of firms in this particular sector and in response to industry-wide declines. The relatively specialized circumstance of oil in the Gulf means that special analytic attention is needed. Separate preliminary studies by Gramling (using the Gulf site) and Molotch (using off-shore California) suggest the feasibility of the proposed project.

The decline of local business as part of the OCS cycle provides a major challenge for affected regions. NEPA requires documentation of such effects and their mitigation. This study will facilitate an effective response to the NEPA guidelines, and alert local and MMS officials to ways for maintaining a healthy business environment.

**Application of Information to Issues of Regional or Programmatic Concern**

Businesses in the Gulf have varied widely in their ability to adapt to marked declines in OCS activities. This proposed project would allow identification of successful strategies, and that information would be very valuable to enterprises still in the process of adapting.

**Qualification of Team Members**

Sociologists and anthropologists familiar with social networks, qualitative interview methods, data-base searches, and bibliographic research. Competence in community studies, organizational analysis, and business dynamics.

**Title**  
**Perceptions of Risk**

Region: Gulf of Mexico  
Proposed Period of Performance: 2 years/3,000 professional person hours  
Applicable Planning Areas: Gulfwide

**Description of Proposed Project**

**Objectives:**

Document salient differences in concerns toward OCS development in different areas of the Gulf of Mexico region and develop an understanding of the underlying factors.

**Methodology/Study Design:**

The study will combine qualitative and quantitative methods. The research will have 4 major tasks.

Task 1... the contractor will compile a review of existing literature having relevance to an understanding of risk perceptions in the Gulf of Mexico region. (Est. 5% effort)

Task 2... will begin to develop the sampling frame for the risk perception survey, and will begin qualitative work intended to identify the key questions to be considered in greater detail through survey research. The qualitative research will include a combination of in-depth interviews, the use of focus groups, direct or participant observation, and the monitoring of current and historic media reports on risk-related topics. The contractor will outline the mix that is intended of the various qualitative methods, and will provide an initial rough draft of the general topic areas tentatively intended for the survey, and will provide the rationale for this particular mix of topics and methods. (Est. 30% effort)

Task 3...survey research - based on what has been learned, the contractor will implement a risk-perception survey. The survey sample will be stratified to ensure the adequate representation of groups or regions that are of particular interest, and those that, based on the qualitative research, appear to have unique or special concerns. (Est. 45% effort)

Task 4...Incorporating information from previous tasks, the contractor will provide an integrated and synthetic analytical document. (Est. 20% effort)

The study will be designed to document what people view as threatened; how they value these things; what they see as potential threats; what they see as the potential capability to mitigate those threats (avoiding, ameliorating, or compensating for any losses); what they see as the level of credibility and fiduciary responsibility of institutions that are expected to institute any safeguards; and what recommendations can be made for improved risk management. A major emphasis will be placed on understanding the ways in which people actually think about risks, the ways in which they make their decisions, and the implications for decision making and impact assessment.

**Products**

The deliverables will include a comprehensive report describing the research findings. In addition the review of the literature should be presented in an annotated bibliography.

**Justification**

There is a need for further information that focuses more specifically on the factors that underlie the differences in risk perceptions across the Gulf of Mexico region. In addition, there is a need for more extensive, quantitative data. This would permit for the first time the use of quantitative,

multivariate analysis, which could identify more precisely the underlying factors, and to make it possible to suggest constructive alternatives for responding to these realities.

#### **Current Status of Information on this Topic**

There is by now a substantial body of literature on the risks that are perceived for a range of controversial technologies, ranging from relatively small or localized facilities to proposals for a national-level repository for high-level radioactive wastes. In addition, MMS headquarters has already supported a largely qualitative reconnaissance study, comparing the risk perceptions related to offshore oil development, focusing on the differences between southern Louisiana and northern California.

#### **Applicability of Information to Issues of Regional or Programmatic Concern**

It is increasingly being recognized that perceptions of risk are formed through a complex process. These perceptions have real consequences; the fears, uncertainty, and mistrust often motivate behaviors, and all of the above are actual impacts of OCS development on the human environment. As the literature makes clear, these impacts can precede physical or biological impacts, and they can be amplified by inappropriate procedures.

It is essential to understand not just the risk perceptions that currently exist, but also the processes by which individuals form their perceptions. Only then will it become clear what changes in procedures or policies could help to reduce the perceived threats to the human, marine and coastal environments.

#### **Qualifications**

Ph.D. social scientists with experience with risk perception, social impact assessment, and OCS development.

**Title:****Development of "Appropriate Technologies" in the Petroleum Industry**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: Five years/4,000 professional person hours

Applicable Planning Areas: Gulfwide

**Description of Proposed Project****Objectives:**

Develop an understanding of technological developments in the petroleum industry, and the social and economic forces that shape them and the human consequences these developments have.

**Methods/Study Design:**

Technological developments must be understood within a multi-disciplinary context, where social sciences and engineering are represented. The study will focus on "appropriate technologies" which are the result of social and economic forces as well the engineering constraints and possibilities inherent to technological developments. The study of the process of technological development must identify the factors which promote and inhibit technological improvements and renewal. Areas of interest would include the following:

1. Technology as a contributor to national income through innovation.
2. Technologies that provide greater access and efficiencies for the industry.
3. Technologies that meet environmental and aesthetic concerns of the public and other industries.

**Program Areas:**

1. How can technological development in the petroleum sector raise possibilities for American industry and the economy? Possibilities of maintaining a viable offshore industry in the Gulf as well as technology transfers to overseas markets should be assessed.

2. How is the petroleum industry affected by its own technological development, and how do these developments interface with Government regulation? Two themes follow: First, the consequences of implementation of new technology on the contracting system (e.g., division of labor, specialization, standards, new networks and collaboration systems.); Second, possibilities of increased efficiency through coordination of different producing fields (cooperation between the oil companies), and through easier and more cost effective access to deeper waters. The regulatory system must be sensitive to the potentials of applying the new technologies.

3. How much and which of the new technological developments have targeted health, safety and environmental concerns? To what extent have these been generated from within the industry and to what extent have they come as a result of government regulation and public pressures?

**Products**

1. Joint European and North American workshop to discuss OCS technologies.
2. Interim reports of progress each year indicating technology cooperation between companies and incentives driving technological developments (e.g., smaller companies don't have capital to do their own research and development and so must join with larger companies).
3. Final Report including international and American experiences with new technologies; the purposes driving the technologies; and possible patterns of technology management that are emerging.

All of these products should assist MMS in making decisions regarding the quality of technology introduced to the OCS and the possibilities that may emerge.

### **Justification**

Technology is the critical driving force behind petroleum and gas development. Without it, nothing happens. Its role and human impact are broad and deep and reflect the needs of the industry, public and government. It is important to understand its nature and evolution and potentials for responding to socioeconomic concerns.

### **Current Status of Information on this Topic**

Information on the technology is always collected by the industry, but because of the competitiveness of offshore technologies in the past years, much of that information has been kept close. Also the depressed nature of the offshore industry in the U.S. during the past decade has prevented the types of investments in the new technologies in the U.S. that have been made in Europe, so that very little information on the newest technologies that could meet public needs has been forthcoming in the U.S. and less use of newer technologies has taken place.

To our knowledge there has not been a history of technology assessment for the offshore industry done, and certainly not one that does so with a socio-political and economic context. This would be breaking new ground for this industry. But because it has been done in other industries, such as the auto industry, there are models that could make this study less difficult to carry out.

### **Applicability of Information to Issues of Regional or Programmatic Concern**

There has been little new offshore activity in the U.S. for some time (except in the Gulf). Part of the reason has been economic and part of it political. I suggest that both reasons could be attributable to the lack of acknowledgement of public sensitivities and part of it due to the lack of long-term strategic planning on the part of government and industry regarding technological developments that could improve the economic conditions and that could satisfy public demands for more environmental and economic protection. A study of this type could do the following, especially for the proposed lease sale in the eastern part of the Gulf off Florida:

- 1) bring new information to the table about less intrusive and more environmentally safe offshore technologies that are either being used in other parts of the world already, or are on the drawing table or that could be on the drawing table with the right incentives.

- 2) encourage government incentives for industry to make longer term investments in technologies that could economically pay off and which would also be more efficient in the long term.

- 3) provide a more collaborative climate between industry and government for facilitating the use of better and newer technologies for offshore developments and help the industry back in to a more competitive position internationally, particularly addressing the problem of the entry of small under-funded enterprises and the departure of the majors from offshore areas.

### **Qualifications**

Several types of people would be appropriate. A multi-disciplinary team is essential; suggestions include: an ocean engineer, a technology policy person, a business/government economist, an environmental impact analyst.

**Title****Outer Continental Shelf Activities and the Human Environment.**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 3 years, 8,000 professional person hours

Applicable Planning Areas: Gulfwide

**Description of Proposed Project****Objectives:**

To provide a comprehensive volume that would assess the known impacts of OCS activities on the human environment.

**Methods/Study Design:**

1. Utilizing a small workshop format, decide on format of the chapters in the volume (i.e. the division of the volume into conceptual parts to allow for discrete inventories of known impacts).
2. Commissioned chapters by recognized experts in the field; each chapter to include:
  - a. a comprehensive discussion of the known impacts of OCS activities,
  - b. an extensive annotated bibliography.
3. Must be formatted so as to allow for periodic updating as new information becomes available.

**Products**

An extensive reference work of known impacts of OCS activities.

**Justification**

No such work exists, and such a work would be immediately useful for MMS in the assessment and monitoring of OCS activities. Such a work would directly assist in the production of environmental impact statements.

**Current Status of Information on this Topic**

While there is a growing body of literature examining the impacts of offshore oil and gas production, and a much larger body of literature examining the impacts of similar development, which could be used to generalize to offshore activities, this has not been brought together in a handbook format.

**Applicability of Information to Issues of Regional or Programmatic Concern**

This would be a very useful reference volume for agency personnel charged with producing EISs

**Qualifications**

Coordinator should be a social scientist with established credentials in socioeconomic impact assessment, and knowledgeable about the subject matter.

**Title****A Comparative Analysis of the Socioeconomic Impacts Experienced by Mineral Extraction Communities**

Region: Gulf of Mexico

Proposed Period of Performance/Level of Effort: 2 years/4,000 person hours.

Applicable Planning Areas: All

**Description of Project:****Objectives:**

To provide a comparative analysis of the socioeconomic consequences of mineral extraction on individuals, families, and communities impacted by rapid growth and/or decline. The goal is to: identify those socioeconomic impacts common to rapid growth (boom-bust) mineral extraction communities; the timing, duration, and extent of their occurrences; previous mitigation efforts and the success of these efforts; and how the negative consequences may be avoided and the positive impacts enhanced.

**Methods/Study Design:**

The contractor shall propose a set of study communities to include (but not be limited to) those impacted by petroleum extraction (both on and off-shore), and other mineral extraction, processing and/or by-product disposal. Communities proposed for the study effort should include ones representative of different geographical regions and types of development (e.g., gas and oil, coal, uranium, etc.). All developments should have been initiated during the period covered by NEPA and related legislation. Communities should be compared in terms of their economic, demographic, public service, fiscal, and social impacts and relative to the monitoring and mitigation of such impacts. Study techniques shall include the use of secondary data, survey and ethnographic methods. The ethnographic analysis shall include a minimum of six impacted communities.

**The analysis shall include:**

- a comprehensive literature review of mineral extraction and boom-bust communities;
- identification of the generic socioeconomic impacts occurring across communities given different size, type, location, and operational periods;
- a comparison of the monitoring programs for each study community;
- a comparison of the different forms of mitigation proposed and/or implemented;
- an evaluation of the effectiveness of mitigation and monitoring programs;

**Product**

The deliverables for the project will include a draft and final report documenting the findings of the analysis including separate descriptions for each study community.

**Justification**

The study will identify patterns of socioeconomic consequences common to mineral extraction communities including those likely to result from OCS activities. The study will aid decision makers by providing essential information on the socioeconomic consequences of appropriate siting, development patterns and phases, and monitoring and mitigation efforts. This information should be useful to decision makers in designing projects that are more timely, cost effective and politically and socially acceptable.

**Current Status of Information on this Topic:**

A range of information is available on this topic but it is scattered and may not be generally accessible nor adequately oriented to the programmatic requirements of MMS.

**Applicability of Information to Issues of Regional or Programmatic Concern**

The negative socioeconomic consequences associated with mineral extraction efforts have delayed, increased costs or stopped proposed mineral extraction efforts. The results will assist in improving planning, reducing risk, and improving efficiency in mineral extraction efforts.

**Qualifications**

Ph.D. social scientists with extensive credentials in social impact assessment.



**Title****Socioeconomic Survey of the Gulf of Mexico**

Region: Gulf of Mexico.

Proposed Period of Performance/Level of Effort: Periodically, (e.g., 1 year/1,000 person hours, for first survey, six months/500 person hours every five years, for updates).

Applicable Planning Areas: Gulf of Mexico.

**Description of Proposed Project**

Objectives:

Periodically to conduct an inventory (survey) of socioeconomic variables which are relevant to assess the impacts of fluctuations of OCS activities in the GOM.

Methods/Study Design:

Using a small workshop format, design a concise, relevant, questionnaire which, after standard pretesting and fine tuning, would be periodically administered to a relatively large sample (1500-2000) in the coastal GOM.

**Products**

A time series database tailored to run under MMS specified software.

**Justification**

The lack of primary data collection to assess the effects of OCS activities in the GOM has been noted a number of times (see National Research Council 1989; 1990; forthcoming). One of the major impediments to agency support for projects involving primary data collection is the OMB approval process. This project would allow for the collection of relevant data on a time series basis, with only one OMB approval necessary every five years.

**Current Status of Information on this Topic**

There is currently no systematic, time series, primary data available for the analysis of issues related to offshore oil and gas activities.

**Applicability of Information to Issues of Regional or Programmatic Concern**

Such data would be useful for MMS directly in the EIS production process, in monitoring the effects of OCS activities, and would allow for periodic, cost efficient analysis of trends in the GOM.

**Qualifications**

The principal investigator should have proven survey research skills. The workshop participants should be from a variety of social science disciplines and be familiar with the subject matter.



### **The Department of the Interior Mission**

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. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; 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 ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



### **The Minerals Management Service Mission**

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The **MMS Royalty Management Program** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.