

# OCS Scientific Committee Meeting

## April 27 – 29, 2005

### Embassy Suites Dulles, Virginia

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# OFFICIAL PROCEEDINGS

**Wednesday, April 27, 2005**

## **Introduction**

The Outer Continental Shelf (OCS) Scientific Committee (SC) is chartered under the Federal Advisory Committee Act to advise the Minerals Management Service (MMS) on the feasibility, appropriateness, and scientific value of the MMS Environmental Studies Program (ESP). Its April 2005 meeting was called to order by Dr. Lynda Shapiro, Chair of the SC.

## **Subcommittee Reports and Discussion**

### **Deepwater Subcommittee**

*Presentation by Dr. William Schroeder*

Dr. Schroeder gave the presentation on behalf of Dr. Michael Rex, who is the Chair of the Subcommittee. The Subcommittee met in January 2005 in New Orleans, Louisiana, resulting in the following recommendations:

- Remain supportive of the planned Chemo III Study endorsed by the Workshop on Deepwater Environmental Studies Strategy: A Five-Year Follow-Up and Planning for the Future (2002), and recommended by the Studies Development Plan, Fiscal Year (FY) 2005-2007. Chemo III will extend investigations of chemosynthetic communities in the Gulf to deeper than 1,000 m. This information is clearly vital to a comprehensive ecosystem-level understanding of the Gulf and builds on the very successful Chemo I and Chemo II environmental studies.
- Recommend completion of the synthesis phase of the Deep Gulf of Mexico Benthic Study Program (DGoMB) for soft sediment communities. The completion of this study is imperative to future planning for an ecosystem-level understanding of the Gulf. Specifically, the Deepwater Subcommittee recommends that the Gulf Office and Headquarters:
  - work closely with participants to assess the status of the current synthesis phase and expedite the final report,
  - provide resources to complete the synthesis and maximize the benefits of this important study,
  - organize a final workshop of participants to present results of the study and assure publication of the findings in a volume of *Deep-Sea Research III*, and
  - under the DGoMB study, produce a comprehensive accessible database of its results.
- Many scientific studies of the deep Gulf have been sponsored by other agencies such as the National Science Foundation (NSF) and the National Oceanic and Atmospheric Administration (NOAA). To accomplish an ecosystem-wide understanding of the Gulf, the Subcommittee urges MMS to coordinate their studies with those supported by other agencies, possibly through the National Oceanographic Partnership Program (NOPP), and collaborate in the development of a comprehensive database of the scientific findings from Gulf research.
- The southern half of the Gulf resides in Mexican waters. Obviously, an ecosystem-level understanding of the Gulf must include this vast region as well as the Northern Gulf. Ecosystem structure and function depend on the natural geography of the system, not national boundaries. The DGoMB Program established a successful collaboration with Mexican colleagues to extend its sampling program into southern waters. The Subcommittee recommends that MMS begin now to pursue agreements with the Mexican government, universities, and the Mexican Academy of Sciences to establish a framework of international cooperation for future environmental studies in the southern Gulf.

### ***Open Discussion***

Dr. Mike Castellini requested more information regarding the collaboration with the Mexican government since it seems to have turned out successful even though Dr. Schroeder had said that, at the end, it needs to be continued or expanded. Dr. Pat Roscigno stated that MMS is approaching collaboration on several different levels:

- MMS is directly in contact with Dr. Elva Escobar and plans to support some of her post docs in the future to complement whatever she is doing;

- MMS participated in a workshop held in Mexico City in March where a lot of contacts were made.

He added that it is understood that MMS needs to work more closely with Mexico and hoped there would be action on several levels, including developing a stronger formal relationship with the Mexican science side.

Dr. Castellini asked Dr. James Kendall if there has been any formal movement from Headquarters relevant to getting the State Department to contact Mexico to facilitate working more closely together, or if it is so far just that individual region or individual level. Dr. Kendall responded that a lot of committees have been formed, two of which are the Committee on Ocean Policy and the Joint Subcommittee on Ocean Sciences and Technology, both of which have State Department representation.

## **Arctic Subcommittee**

*Presentation by Dr. Mike Castellini*

Dr. Castellini said that in February the Subcommittee met to define and address what the Alaska OCS Region is doing for stakeholders pertaining to their concerns which are bowhead whales, statistical models of oil spills, and stakeholder role.

### **Bowhead whales**

Issues are where they feed and their behaviors relative to human activity, specifically offshore minerals management use; the annual and seasonal patterns of distribution; how data are integrated and in what context; and input from Barrow – both Natives and borough. A database is being established to try to determine their seasonal or annual trends and how they react to the human presence. These data need to be integrated with each other, i.e., integrate oceanography with biology, integrate atmospheric, etc. At this point, the MMS is doing a fine job within each individual area of trying to integrate a particular field, but there are still problems which are not just MMS's, but the field in general.

### **Statistical models of oil spills**

There needs to be a better understanding of models; large versus small spills; precise volume estimators; and discussion of terrestrial versus marine models.

### **Stakeholders**

Input, specifically in this case, had to do with Barrow and whaling and the role of input versus review, versus authority, and policy versus science. Dr. Castellini complimented the Alaska OCS Region for doing a stunning job of getting public input into all of the work because so many things that occur in Alaska have an immediate social, biopolitical, or economic impact.

In summary, Dr. Castellini related that the major concerns for the Alaska OCS Region are how to handle traditional knowledge, the role of the stakeholders, and how information is released and utilized.

## **Observations of the MMS/EPA/DOI Hypoxia Meeting**

*Presentation by Drs. Robert Diaz and Mary Scranton*

Dr. Diaz explained that the MMS/EPA/DOI Hypoxia Meeting was an Experts Meeting called because of an issue which came up with regards to the Environmental Protection Agency's (EPA's) issuance of the National Pollutant Discharge Elimination System permits in the Gulf for oil and gas activities. The Gulf of Mexico has a hypoxic zone, and the purpose of this meeting was to evaluate the extent to which produced water might be contributing to nutrient supply in the Gulf. This question had come up in the discussions leading up to the EPA permitting. In order to adequately address the hypoxia zone, it is important that all of the possible sources of nitrogen and phosphorus going into the Gulf are understood, and in particular from MMS' point of view, it is important to determine whether or not produced water is a problem. He mentioned that two other meetings were scheduled to plan research and reports on how produced water related to the bulk of the low oxygen water being produced in the northern Gulf every year.

Dr. Diaz presented a summary sheet regarding the outcome of a meeting held in August ([Attachment2005](#)).

The EPA issued a 3-year permit contingent on studies of nutrient supply from produced water now underway. A study plan has been approved and is being conducted by the Argonne National Lab to determine whether or not produced water is an issue with the hypoxia zone. The EPA also funded a modeling study to organize this data in context with the bigger picture, and a number of people who have worked on modeling oxygen dynamics in this area were in attendance. A second meeting was held in September, and was attended by two top modelers, Justice and Bierman. The EPA selected the Bierman model, which is an 18 compartment model, has two levels, and is able to predict the dynamics of oxygen.

Finally, Dr. Nancy Rabalais with the Louisiana University Marine Consortium drafted a report to help MMS understand the potential for the nutrients in the produced water to lower oxygen; that report will soon be made available.

### ***Open Discussion***

Dr. Shapiro asked if Dr. Rabalais' report is going to be available to the SC members. Mr. James Cimato replied that the report will be a standard MMS report; therefore, it will be publicly available.

Dr. Diaz commented that if produced water is a problem, with time it will go away because the amount of produced water is going down with time. Dr. Roscigno agreed, but explained that if it becomes a long-term problem, there is also some technology relief that probably could be used. He feels very confident that the model will give a realistic picture of what interactions are taking place in order to determine risk; this would result in an action plan.

## **MMS Archaeological Studies Fulfilling MMS Information Needs**

*Presentations by Drs. Jack Irion and Melanie Stright*

### **[Presentation by Dr. Jack Irion](#)**

Dr. Irion presented a list of completed and ongoing studies as well as studies that will be starting in the very near future in the Gulf of Mexico. Dr. Stright presented a future idea that should be groundbreaking particularly for the prehistory of not only the Gulf of Mexico, but for the New World also.

Recently completed studies include:

- Study to Refine and Revise the Gulf of Mexico High Probability Model for Historic Shipwrecks. This study improved the database of historic shipwrecks to include ship attributes, developed Geographic Information System (GIS)-based mapping of shipwrecks based on location reliability, re-evaluated high-probability areas based on discoveries of the last 10 years of industry surveys and historical data, and evaluated the effectiveness of new magnetometer technology.
- Archaeological Damage from Offshore Dredging: Recommendations for Pre-Operational Surveys and Mitigation During Dredging to Avoid Adverse Impacts. This study provided a plan which ensured that shipwrecks existing within potential Federal OCS sand borrow areas or aggregate areas are not adversely impacted by offshore dredging operations. This study was important since shipwreck damage/burial has already occurred in State waters during offshore dredging operations. Current Essential Fish Habitat regulations also require that MMS protect wrecks that serve as habitat for various fish species.

Recommendations described by Dr. Irion were:

- GIS-based data management;
- Defining the potential archaeological resource base;
- State-of-the-art means of locating and identifying those resources;
- Establishing buffer zones for their protection;
- Precision control of dredging operations;
- Monitoring activities that impact submerged archaeological resources; and
- Archaeological report and data delivery requirements to include digital data submissions.

Ongoing studies are:

- Study to Conduct National Register of Historic Places Evaluation of Submerged Sites on the Gulf of Mexico Outer Continental Shelf, which is a monitoring study;

- Archaeological and Biological Analysis of World War II Deepwater Shipwrecks in the Gulf of Mexico which will determine whether or not manmade structures can serve as an artificial reef in deepwater; and
- The “Mica Wreck”: Data Recovery from a Deepwater Shipwreck in the Mississippi Canyon Area, which will recover some of the artifacts located on the seafloor.

A new study for FY 2005 is the Mardi Gras Shipwreck Study. This wreck will be the deepest scientific underwater archaeological excavation ever attempted and will highlight the role of the MMS as an ocean agency with stewardship over the greatest number of historic shipwrecks in the United States. First discovered in 2001 during a pipeline survey, this was identified as various debris around a pipeline. Not knowing what it was, the MMS placed a small avoidance area around the pipeline. The pipeline was approved for installation in 2002; however, the company conducting the pipeline survey had returned prior to construction to conduct a survey using a Remotely Operated Vehicle, which showed a shipwreck on the seafloor off of the pipeline. However, this discovery was not reported to the MMS until 2004 and only during an NOPP study. Regulations state that if anything of historical importance is found on the seafloor while conducting operations, the operator is supposed to report it to the MMS immediately. Because this was not done, there were possible civil penalties that could have been applied; instead, the operator agreed to mitigate the threat to the ship by funding Texas A&M University to excavate this site and recover the artifacts which will eventually be displayed at the Cabildo in New Orleans. The cost of this project is \$4,870,000.

### ***Open Discussion***

Dr. Scranton asked if side-scan sonar is the primary mechanism used to identify wrecks or if swath mapping is used. Dr. Irion replied that side scan sonar had been used since MMS requires use of a magnetometer, side-scan sonar, and sub-bottom profiler. However, beyond 600 feet in depth, the magnetometer cannot remain close enough to the seafloor. At that point, a side-scan sonar is used.

Dr. John Trefry asked if any actions are being taken to learn about the physics, chemistry, biology, and geologic area associated with the shipwreck and what has happened to it over time. Dr. Irion said that MMS will work particularly with Dr. James Coleman’s group which is conducting microbial studies. Core samples, as well as wood sample, will also be collected for analysis and microbial studies.

Dr. Shapiro questioned whether or not the wood from the Mica shipwreck would be studied to determine why it was so well preserved. Dr. Irion replied that the wood was copper clad, so it was fairly well intact where the copper was adhering to it.

Dr. Joe Smith asked if there had been any incidences of oil release from the WWII-era wrecks. Dr. Irion answered none have been found from deep wrecks – only from shallower sites.

### ***Presentation by Dr. Stright***

Dr. Stright defined inundated prehistoric archaeological sites on the OCS as the material remains of prehistoric human activities (e.g. campsites, kill/butchering sites, and tool manufacturing sites) that became drowned and buried during the post-Wisconsinan rise in eustatic (global) sea level (ca. 19,000 B.P. to 3,000 B.P.). These sites will occur on the continental shelf out to the farthest extent of the late glacial maximum shoreline (ca. 19,000 B.P.) and will tend to occur in highest concentration in association with late Wisconsinan terrestrial landforms such as rivers, lakes, embayments, and other topographic features that represented areas where fresh water and other resources necessary for human subsistence tend to concentrate.

She stated that the sites representing the earliest prehistoric human contact with the Americas will be found submerged on the continental shelf. These sites will provide information on the origins of the earliest prehistoric inhabitants of the Americas and their use of the late Pleistocene coastal environments that are now submerged on the continental shelf. The organic materials present in these marine-inundated sites such as plant materials, wooden artifacts and even human remains, tend to be better preserved than organic materials in most terrestrial sites.

MMS's mandate specifies that, prior to funding or permitting any activities on the OCS, the effect of that action on significant archaeological resources, whether historic or prehistoric, must be considered. MMS complies with this mandate by conducting regional archaeological baseline studies to compile all of the existing information relevant to defining potential archaeological site locations on the OCS. The information used to assess the prehistoric archaeological potential of the OCS includes relative sea level data, known site-landform associations modeled from terrestrial site analogues, and available information on the location and state of preservation of relict late Pleistocene landforms on the OCS. Existing data on relict landforms is usually of insufficient coverage and detail at the baseline study stage to exclude areas from further consideration. If relative sea-level data indicate that an area was above sea level during the last 12,000 to 13,000 years when prehistoric human populations were known to be in North America, the area is considered to have potential for prehistoric archaeological sites.

After the baseline studies identify the areas of the OCS that have archaeological site potential, MMS requires an archaeological assessment of high-resolution geophysical data within these areas. High-resolution seismic profilers are the primary instrument used to locate former terrestrial landforms such as river channels, fluvial terraces and confluences, natural levee ridges, lakes, bays, and lagoons. The data that are collected to assess shallow hazards are used as the basis for the archaeological assessment. If the geophysical evidence indicates that an archaeological site may exist within an area of proposed operations, MMS requires that the activity either be moved to avoid that area or that further investigations be conducted.

Dr. Stright described two completed studies and one study in progress. The current study deals with inundated prehistoric sites and is titled, "Determining Archaeological Potential of Buried Terrestrial Landforms in the Beaufort Sea, Alaska: Review of Existing Geological and Geophysical Data and Analysis of Existing Cores (Part I)." Proposed studies include a Lower Cook Inlet-Shelikof Strait archaeological site characterization (Alaska) and an investigation of a possible sub-seafloor prehistoric shell midden located during an MMS required archaeological survey of High Island Block 160 (Headquarters/Gulf of Mexico OCS Region). Expected results from this study include:

- Obtaining definitive information on the remote sensing signature of an archaeological shell midden and refining sedimentary criteria that can be used to identify a buried shell midden from core-size samples,
- Obtaining additional information on the types of archaeological sites and environments which can be expected to have survived the late Pleistocene marine transgression, and
- Obtaining unique archaeological data for prehistoric human coastal adaptations for a time period (ca. 8,500 B.P.) not available from terrestrial sites in the Gulf of Mexico.

The shell midden study will ultimately improve MMS's Archaeological Resource Protection Program in compliance with Section 106 of the National Historic Preservation Act.

### ***Open Discussion***

Dr. Shapiro asked if MMS's mandate is specifically to preserve and protect these sites, or is the MMS also charged with investigating and studying them. Dr. Stright explained that the main charge is to make sure that the activities funded and permitted by the MMS do not destroy significant archaeological sites. However, it is incumbent upon the MMS to conduct necessary studies to evaluate the effectiveness with which our program is able to accurately identify potential site locations so that they can be avoided by our activities. This both ensures the effectiveness of our compliance with the mandates of the National Historic Preservation Act, and ensures that we are not requiring industry to move operations or do further investigations in areas that, in fact, do not contain archaeological resources.

Dr. Shapiro asked whether or not information on these sites can be published and made available so people would know there are these sites which need to be studied. Dr. Stright responded that all study reports are available upon request.

Dr. Roscigno requested that the SC present judgment on this type of research and whether there is value to pursue the MMS Intertidal Team study in the Gulf of Mexico. Dr. Shapiro commented that would be difficult in terms of the mission orientation of MMS because there are fascinating scientific questions to be asked, but the question is whether MMS is the agency that should be asking them. Dr. Stright said that she would argue for this since it is furthering our ability to ensure the location and protection of sites. Dr. Trefry added that it actually is looking at the geomorphology of the seafloor, which is very important to MMS, and that this is a great way to record that change over time and make predictive models for the future.

Mr. Barry Drucker told Dr. Shapiro that dredging has been done in the Gulf of Mexico where archeological surveys indicate possible areas of prehistoric sites. He cited one example, Holly Beach, where MMS was aware of that probability and Dr. Stright worked up a stipulation that actually required monitoring of the dredge material on a biweekly basis. In this case, only dead wood was retrieved so there was nothing to study afterwards. However, there are other dredge areas that are going to be used for coastal restoration where there is also a high probability of prehistoric sites. Dr. Shapiro said there has to be a balance between gaining archaeological information and ground truthing the relevance of a site and documenting whether it actually should be a site to be avoided. Dr. Scranton agreed and added that she feels it is important that MMS do such surveys in other areas as the mission of MMS expands to wind power or sand and gravel in other areas, certainly the Northeast, although there is no longer any oil drilling in the Northeast. Dr. Diaz commented that although there is no oil exploration in the Northeast, pipelines are being laid over Massachusetts Bay and Long Island Sound. He asked Dr. Stright and Mr. Drucker whether or not there is work being done on the Atlantic Coast such as archaeology of the shorelines. Mr. Drucker responded that Federally permitted activities at borrow sites include the required archaeological and hazards surveys. Completed hazard surveys go directly into formulating the stipulations, whether it's avoidance of areas or monitoring of possible prehistoric material. Dr. Stright added that one advantage of the sand and gravel surveys is that a lot of vibracores are being taken to evaluate the thickness and the quality of the sand deposits, and that these can be used for ground truthing areas of potential prehistoric archaeological sites.

### **Report from the Last OCS Policy Committee Meeting**

*Presentation by Dr. Berry H. Tew*

Dr. Tew is the current Chair of the MMS OCS Policy Committee and is a state geologist and gas supervisor from Alabama. He serves as the Director of the Geological Survey of Alabama and the State Oil and Gas Board of Alabama. In addition, he holds an adjunct appointment in the Department of Geological Services at the University of Alabama.

Dr. Tew stated that the Policy Committee (as well as the SC) was rechartered and had its first meeting in October. Since there were new members in attendance, the meeting was primarily to introduce each other, obtain background information, and elect officers.

Although Dr. Tew was unable to attend the meeting, as was the elected Vice Chair, Ms. Melanie Meyers from Chevron Texaco, their alternates were in attendance.

During the meeting, three subcommittees were established: a 5-Year Plan Subcommittee, a Subcommittee on Hard Minerals, and a Subcommittee on Alternative Uses of the OCS.

The 5-Year Plan Subcommittee is being chaired by Mr. Jim Carlton of ConocoPhillips. The Subcommittee will be engaged in the issues relative to the next 5-Year Plan for OCS leasing that will cover the years 2007 to 2012.

The Hard Minerals Subcommittee is chaired by Mr. George Banino. The Subcommittee will be looking at sand and gravel aggregate resources, other issues related to these resources in the OCS area, and also the sand and gravel program in which MMS has been engaged along with a number of States for many years.

The Alternative Use Subcommittee is chaired by Mr. Robert Boyles, who is with the Division of Marine Resources in the State of South Carolina. The Subcommittee will be looking at issues related to alternative non-traditional uses of the OCS, such as wind energy, mariculture, liquified natural gas (LNG) facilities, alternative uses of infrastructure, etc. Dr. Tew said there is a good opportunity for interaction with the Hard Minerals and Alternative Use Subcommittee relative to these archaeological issues which had been presented.



The first working meeting of the Subcommittees is scheduled and will compile work items and issues to bring forward to the next OCS Policy Committee meeting scheduled for the fall. He offered the cooperation and coordination of the OCS Policy Committee with the activities of the SC, which are very important since there are a number of areas where there will be mutual benefit.

### ***Open Discussion***

Dr. Diaz asked how many members make up each of the Subcommittees. Dr. Tew said they range from seven to ten individuals.

Dr. Diaz asked if there are technical people in attendance when the Subcommittees meet. Dr. Tew explained that a contingent of MMS staff will meet with each of the Subcommittees during their upcoming meeting, and the Subcommittees are going to depend on MMS staff to provide briefings and background information on issues on which the Subcommittees need to engage.

### **MMS Director's Presentation and Discussion with the Committee**

*Presentation by Ms. Johnnie Burton*

Dr. Shapiro introduced Ms. Burton and stated that she has been the Director of the MMS for 3 years and came to the position with significant experience in State government, in oil and gas exploration and in education. In State government, she served in Wyoming on the governor's cabinet as Director of the Department of Revenue and as a member of the Wyoming State House of Representatives. In oil and gas exploration, she was Vice President of TCF Inc., which is an oil and gas exploration company, and Vice President of Dwight Energy Data, Inc. She was also president and founder of the Hotline Energy Reports, Inc. In the field of education, she was a lecturer and teacher of French and has studied at the University of Arkansas and at Duke University.

Ms. Burton thanked the SC for helping MMS do a better job for the American public by doing what needs to be done as regulator, which is to ensure that production of oil and gas is done without any harm to the environment. She explained that the MMS is the largest land manager in the United States, albeit submerged lands. Just as the Bureau of Land Management and the National Park Service have responsibility for millions of acres of cultural, natural, and mineral resources, so does the MMS, in the amount of 1.76 billion OCS acres.

The majority of drilling permits are in the Gulf of Mexico and there are about 40-44 million acres under lease today, which is where a lot of the activities are being conducted. Some activities in Alaska, the Atlantic, and Pacific Coasts are off limits as well as in most of the eastern Gulf of Mexico.

The Gulf of Mexico produces 30 percent of all domestic oil production and 23 percent of domestic gas production. In Alaska, although there is not a lot of activity, there is production at the Northstar facility; this is in conjunction with the State. Lease sales are very active and bring quite a bit of money to the US Treasury. She reported that last month's sale brought approximately \$350 million in high bids.

The sale in Alaska, which took place shortly after the Gulf of Mexico lease sale, was also a very good sale for that area, bringing back about \$46 million in high bids on the North Slope on the Beaufort Sea.

Ms. Burton then went on to discuss the following issues:

#### **The 5-Year Plan**

MMS is required to submit a plan to set up the time and exact location of offshore sales every 5 years. Once the plan is created, it needs to be approved by the Secretary, and there are several steps during which the public has input. It is important that the process which is laid out in the OCS Lands Act, Section 18, be followed.

MMS is behind on beginning the plan due to some of the decisions that need to be made and require vetting by several levels. Once the final decisions have been made, the first step will be a call for information from all of the OCS Regions.

## **Natural Gas**

Dr. Burton explained that there is an enormous demand for natural gas which is increasing all the time. Domestic production of both oil and gas need to be increased, but natural gas seems to be on the forefront because it has such a huge impact on some of the manufacturing in this country. She added that for the last few years, and for another 2-3 years, it has not been the best scenario. The production of natural gas is decreasing, but with deepwater drilling and deep drilling on the shelf, it is anticipated that gas production will begin to increase again. She reported that oil production is increasing which is due to deepwater and ultra-deepwater drilling. There are about 115 new deepwater discoveries and close to about 100 scheduled to be on line by 2005.

There is renewed interest about natural gas in the shelf on deep drilling. The Secretary issued and implemented new rules in 2001, and another last year, giving an incentive to drill below 15,000 feet, which is considered shallow water. Since the incentive, there have been about 30 wells drilled and about 20 discoveries made.

She described Thunderhorse which is the best field found in the Gulf of Mexico in the last 30 years. It will be located in more than 6,200 feet of water, 115 miles off the Texas/Louisiana coast. The platform alone, which costs \$5 billion, is the largest platform ever built and is capable of producing 250,000 barrels a day and 200 million cubic feet of gas per day.

## **Methane Hydrates**

Though there is little funding to devote to methane hydrates, there appears to be tremendous potential for development in the future. More needs to be learned about hydrates such as their location and whether or not they can be commercially developed. MMS staff is working on accumulation conditions to determine where in the Gulf of Mexico these resources are found because, if MMS can't access more of the OCS or find more oil and gas onshore in the areas that are accessible today, there may be a fantastic resource that has not yet been explored.

## **Hurricane Ivan's Effect on the OCS**

Ms. Burton reported that Hurricane Ivan had tremendous force offshore and had a track across the Gulf that hit close to 800 platforms that were in its path. Considering what could have happened, the damage was not severe. Five drilling rigs were set adrift, and seven fixed platforms were destroyed – a few of these platforms were older and, therefore, more vulnerable since building standards at the time of construction were not as rigid as they are now. There are, however, issues with some building standards that need to be reviewed. There are several contractors working with MMS to study the aftermath of the hurricane to learn lessons from it in order to improve the standards.

Ms. Burton also reported on several region-specific development projects and issues.

## **Alaska OCS Region**

British Petroleum Exploration Alaska, Inc, the operator, stopped all action for this development of the Liberty Project in 2002. Recently, MMS, the Army Corps of Engineers, and BP Exploration Alaska, Inc., signed a Memorandum of Understanding to delineate responsibilities and schedule the permit reviews required under the National Environmental Policy Act. BP will submit a new Development and Production Plan by June 2006, and cooperating agencies will be working to flush out issues and concerns and to delineate the best development alternative for the Liberty project during the next 15 months.

The Northstar Project, a joint Federal/State of Alaska unit located in the Beaufort Sea offshore Alaska's North Slope, includes three Federal and five State leases; the reservoir is managed under a joint Federal/State unit agreement. It is bringing in \$30 million dollars yearly and has new wells being drilled requiring more effort from MMS for inspections and monitoring.

All in all, Alaska is seeing a new wave of interested oil and gas companies. Beaufort Sea sales have been the best since 1988, and companies are expressing strong interest in the Chukchi and North Aleutian Basin.

## **Pacific OCS Region**

Because there are a lot of undeveloped leases that will probably remain undeveloped, four lawsuits have been filed, two of which are major lawsuits. One is the *State of California vs. Norton*, in which the State's position was supported by the court.

The second lawsuit was filed by the owners of the 36 undeveloped leases. MMS is being sued for breach of contract because the owners state that the Coastal Zone Management Act has been amended since those leases were issued and that the court, in the *State of California vs. Norton*, said that MMS was not interpreting that amendment correctly. The State needs to have a chance to review consistency determination for extension of the lease, not for any activity, but simply to extend the lease. The Department never interpreted that provision that way; however, the Court said MMS was wrong in its interpretation. After a lease was issued, the owners had to take further steps to extend their leases; this led to a lawsuit. The State of California is trying to buy back those leases, and the litigation is being conducted the Department of Justice, which is the lead Agency. The Department of Justice and the lessees for those leases are very, very far apart in deciding what those leases are worth, and although MMS has been trying to negotiate for a couple of years, there has been no successful resolution.

There are about 23 platforms in offshore California that are still active and must be monitored. One of the issues is the aging infrastructure. Although most of these older structures are in the Gulf, there are platforms in California that are also very old and probably getting close to the end of their production and will require decommissioning.

### **Gulf of Mexico OCS Region**

One of the issues on the Gulf is the aging infrastructure and what should be done to ensure that infrastructures remain safe. Research needs to be conducted, and regulations need to be reevaluated as well as industry standards.

The President will address LNG along with several initiatives dealing with production and energy. There are four onshore facilities being expanded, but a lot of companies are looking at offshore siting of port facilities for receiving natural gas simply because siting an LNG port offshore seems to be easier than siting it on land. The Department of Transportation, and more specifically the Coast Guard, is responsible for decisions about the siting of offshore LNG terminals. MMS has been asked to help expedite the siting of ports and is working very closely with the Coast Guard to obtain this information.

### **US Commission on Ocean Policy**

In 2000, Congress unanimously approved passage of the Oceans Act. This legislation establishes an independent US Commission on Ocean Policy charged by reviewing the state of marine-related issues and the effectiveness of Federal ocean-related laws and programs. The Department of the Interior, not just the MMS, will be very involved in various actions, and it is hoped that the process will give the public a better feeling for the role that MMS plays in the ocean. The administration feels that the MMS is the proper agency for being the lead agency in any alternative energy use on the OCS such as wind and wave. There is some legislation that would make MMS the lead agency for those projects, and hopefully, it will be passed with the energy bill.

MMS will also participate with NOAA and various other agencies on the development of the Integrated Ocean Observing System, which is a big part of what the US Commission had recommended.

### ***Open Discussion***

Dr. Shapiro suggested that if MMS is going to be exploring alternate sources of energy, which may take place in areas that are not currently being explored or developed in oil and gas, then the SC's recommendations might be quite different than what they are now, i.e., MMS needs to begin preliminary literature searches or recommendations and keep the SC apprised of any likely geographic changes in the focus of its work. Ms. Burton agreed and said that the 5-Year Plan has an impact since information is needed on the area and, depending on how the plan gets developed, if new areas are to be opened, this is where that information can be found.

Dr. Diaz commented that the emphasis is on oil and gas; however, over the last 10 years, the renourishment of beaches has been one of most incredible rises of environmental issues. Ms. Burton agreed and added that MMS currently has agreements with about 14 States to assist in beach renourishment and replenishment, and it is an important program. However, MMS has no money to support this program as it was never identified as a separate item in our budget. Therefore, whatever money was devoted to studying MMS providing offshore sand and gravel to the State was done by using funds from other parts of the OCS Program. The budget for FY 2007 may constrain MMS to continue this program since its core mission is offshore oil and gas and these studies are a priority. Should these studies not be properly funded, the program will suffer. The States do participate in assisting and collaborating with the MMS, but refuse to participate in hard dollars.

Dr. Trefry commented that MMS's work in renourishing beaches in Florida has been viewed very positively and suggested that the key to getting Florida to contribute money for the sand and gravel program is to work with the Florida delegation. Ms. Burton responded that if the States value what MMS can do with the sand and gravel program, they need to be told to help monetarily because otherwise it can't be done.

### **Some Highlights of the MMS Environmental Studies Program and Our Goal for the Next Day and a Half**

*Presentation by Mr. James Cimato*

Mr. Cimato explained that the ESP does research to support the MMS mission, which is to manage the mineral resources on the OCS in an environmentally sound and safe manner and to timely collect, verify, and distribute mineral revenues from Federal and Indian lands.

The mission of the ESP is to predict, assess, and manage the impacts of offshore oil and gas drilling as well as sand and gravel development activities. He stated that he deals with the budget and policy, and has worked closely with the Office of Budget and Management (OMB) and the DOI developing budget-related narratives. He described his observations on how the MMS is doing in those areas.

In regards to the ESP budget in FY 2006, there is:

- possibly a slight decrease,
- ~60 percent of the budget allocated for continuation of existing projects,
- emphasis will continue in the Gulf of Mexico,
- difficult choices with limited resources for new starts, BUT
- the Energy Bill may change everything.

### **The ESP Budget**

Mr. Cimato said that there is about \$17 million dollars in the budget, which is down slightly from last year. As in the past several years, most of the resources are directed to meet the needs of a very robust oil and gas program in the Gulf of Mexico. Once the Gulf of Mexico's needs are taken into consideration, the needs of the Pacific and Alaska OCS Regions, along with those of the Sand and Gravel Program, are addressed.

He explained that for FY 2005, about 42 percent of the budget is available for new work which includes the work of the Coastal Marine Institutes (CMI's). That breaks down to about \$1 million at the University of Alaska Fairbanks, and about \$2 million for the CMI at Louisiana State University. With CMI's, proposals on topics that are tied to our ESP mission are invited, and if the universities submit good proposals and are able to meet funding match requirements, then the proposals can be developed into workable research projects. He also pointed out that the US Geological Survey Biological Resources Division performs about \$2.5 million of biological research that supports the MMS Offshore Programs.

For FY 2006, approximately 60 percent of the budget will be for continuing activities, including the CMI's; therefore, there is about 40 percent for new work. If and when the Energy Bill is passed, MMS's responsibilities will increase, and that should lead to additional funds for research.

Mr. Cimato characterized the ESP research expenditures by recipients: universities, the private sector, and inter-agency agreements.

There has been considerable effort in working with the US Commission on Ocean Policy during the last couple of years. The Commission recommended that MMS strongly support the ESP. In light of budget uncertainties the ESP has increased efforts to leverage its' research budget. Besides the CMI's, the most visible leveraging has occurred through membership in the National Oceanographic Partnership Program, and NOAA has been the primary partner. Also, the ESP participates in Joint Industry Projects (JIP). It has been MMS's good fortune over the last few years to engage in a Department of Energy JIP focusing on methane hydrate research in the Gulf of Mexico.

Mr. Cimato highlighted efforts within the ESP to inform the public of its research. On the MMS Website, FY 2005 research opportunities have been announced. In addition, the ESP sponsors sessions at national and international symposia to inform the public, and seek opportunities for collaboration in future activities. In addition to sponsoring symposia and proceedings that result from those symposia, the MMS scientific staff publishes in peer reviewed science journals.

Mr. Cimato went on to describe the mercury issue which surfaced a couple of years ago. The SC was called upon, and a subcommittee was formed which provided an extremely useful assessment. As a result of this process of looking at mercury and the relationship to the drilling activity MMS initiated a study of barite solubility and trace metals. The research contract was awarded using a merit based process.

### **Mercury Issues**

*Presentation by Dr. John Trefry*

Dr. Trefry reported that their research team is composing a draft report regarding mercury and other metals in barite to determine if these metals are released when barite is on the seafloor or on its way to the seafloor. How much barium and other trace metals are released in seawater at various pH values or just to sediment pore water over time and in what minerals these trace impurities in the barite might be held are the primary areas of interest. The research team chose barite samples that were extreme in terms of levels of mercury and a normal scenario. It also looked at mercury in pore water which showed sediments that were spiked with 10-percent barite, and there was no statistical difference in the amount of mercury released. The researchers also looked at methyl mercury.

The researchers were interested in what forms the metals might hold so it used pH leaching for both its geochemical and biological analyses, and the outcome was that it was a very, very small percentage. At higher levels of barium release, there are lower levels of mercury due to the fact that mercury is released to a greater degree at low pH and barium is released to a greater degree at high pH.

In conclusion, Dr. Trefry reported that there is little to no detectible mercury released and these metals are held in the sulfide phase. He encouraged the SC members to become involved in the report when it is released.

### **Continued Presentation by Mr. Cimato**

Mr. Cimato thanked Dr. Trefry and commended the Battelle team for their efforts. He also thanked the MMS technical managers Drs. Mary Boatman and Margaret Metcalf for their oversight of the barite solubility project. He then provided a brief overview of major themes dominant in the research in the Gulf of Mexico, Alaska, Pacific and Headquarters program areas.

Mr. Cimato highlighted the coordination of international research programs. He specifically cited deepwater biological and physical oceanography performed in the Gulf of Mexico with Mexican scientists. He also mentioned the coordination of arctic research with marine mammal research being performed by Canadian scientists in their universities and government agencies.

Mr. Cimato closed by laying the background for the prospective program review that would take place over the next few days. He indicated that within MMS there is considerable focus on mission relevance and the expectation is that the draft study plans should make mission relevance abundantly clear. While the SC should focus on the technical merit of the proposed research, they should feel free to challenge all aspects of the study profiles.

### **Charges to the Discipline Subcommittees**

Dr. Shapiro instructed the SC to break out into Discipline Breakout Groups until 4 p.m., at which time the SC will meet again as a whole.

Members of each Discipline Breakout Group were:

- Biology: Drs. Robert Diaz, Mike Castellini, John Trefry and Lynda Shapiro;
- Physical/Chemical: Drs. Mike Kosro, Denise Stephenson-Hawk, Mary Scranton, and Joe Smith;
- Social Sciences: Drs. Duane Gill and Edella Schlager.

During the Discipline Breakout Group's meeting, focus will be on:

- MMS ESP Planning Process
  - Information needs assessed annually
  - Studies development plans
  - OCS SC Deliberations
  - Balance needs/priorities with resources
  - Research approved by MMS Directorate
  - Procurement vehicle
- Program Quality
  - Information needs reviewed internally/externally
  - National Academy of Science Reviews
  - OCS Scientific Committee
  - External participation by a Technical Proposal Evaluation Committee
  - Scientific/Quality Review Boards
  - Peer reviewed literature
  - OMB P.A.R.T review
- Determining Priorities
  - Mission relevance
  - Technically feasible
  - Scientific merit
  - Timing
  - Applicability
  - Affordable

The SC will also focus on:

- Relevance
- Scientific merit
- Objectives
- Relationship to other research
- Feasibility
- Timing

Dr. Kendall reminded those presenting to the SC, first and foremost, to give an explanation as to why the study is needed. This was a recommendations made by the SC during the previous meeting.

### **Evening Session**

The evening session was called to order by Dr. Shapiro and she explained that for the past few years, the SC has been talking with MMS about archiving data in such a way that it is easily available to all possible users since the data that has been accumulated is very, very valuable.

She introduced Dr. Norm Froomer who is with MMS and has worked on the development of a GIS database that MMS uses.

### **Information Collection**

*Presentation by Dr. Norman Froomer*

Dr. Froomer reported on MMS efforts in recent years to incorporate ESP data into the MMS corporate database and to develop GIS applications that use these data to support environmental decision making. He stated that out of the more than \$700 million that the ESP has spent since its inception, only 4.1 percent was for information management, most of which was used for publications and meetings.

The ESP was chartered by the OCS Lands Act. Section 20 of the Act authorizes the ESP and establishes three general goals for the program:

- to establish the information needed for assessment and management of environmental impacts on the human, marine, and coastal environments of the OCS and the potentially affected coastal areas;

- to predict marine biota impacts that may result from chronic, low-level pollution or large spills associated with OCS production, drilling fluids and cuttings discharges, pipeline emplacement, or onshore facilities; and
- to monitor human, marine, and coastal environments to provide time series and data trend information for identification of significant changes in the quality and productivity of these environments and to identify the causes of these changes.

These goals highlight the ESP's role as a provider of information to support environmental decision making and planning. The computer and internet age has created opportunities for using ESP data for environmental management that greatly enhance MMS efforts to achieve these goals.

ESP data deliverables have traditionally been stored in large data warehouses, such as the National Ocean Data Center. These large data sets, often referred to as the raw data, were studied and analyzed by the scientific community to produce generalizations and interpretations that MMS could use to support environmental decision making. As an example, a large collection of oceanographic data could be analyzed to produce generalized current patterns for use in oil spill analyses.

A new approach is available to enhance the traditional approach. The new approach involves storing environmental studies data in the MMS corporate data base for direct use in environmental decision making and analyses. MMS has recently redesigned its corporate database as part of the OCS Connect project. The new database includes environmental studies data products, such as information on where the study was done, where data were collected within the study area, and some kinds of raw data. These data will be used by MMS in many ways, including developing regulations and lease stipulations, reviewing exploration and development plans and writing Environmental Impact Statements. MMS already includes in its study contracts specifications for some data deliverables for be compatibility with MMS standards. MMS will load these data directly into the OCS Connect system.

## **Managing Environmental Data at a Global Level**

*Presentation by Dr. Daphne Fautin*

Dr. Fautin is a Professor of Ecology and Evolutionary Biology at the University of Kansas and is a curator of the KU Natural History Museum. Her research interests include anemones and their symbiotic associations. She is currently serving on the International Steering Committee of the Ocean Biogeographic Information System (OBIS) and on the US National Committee for the International Union of Biological Sciences; she is also Chair of the US National Committee for the Census of Marine Life.

Dr. Fautin said the US National Committee for the Census of Marine Life's mission is to access and explain the changing diversity, distribution, and abundance of marine species as well as the functional role of marine biodiversity in the US, its territories, and commonwealths. There are currently 70 countries participating in the Census of Marine Life (CoML).

She related that her focus centers on what MMS and the US National Committee can do together and how the two agencies intersect. The data the SC has is almost exclusively biological; therefore, she admitted that she would prefer to see the biological and environmental merge in order to arrive at a context for the biological which will enable them to get all of the data that apply to a point and drill right through them. This would entail, for example, finding out what species occur in any particular place, what the water temperature is, what the seasonality is, and what oil spills have occurred there.

She described 3 challenges set before them: what lives in the oceans, what lived in the oceans, and what will live in the oceans. Funding for this work was provided by the Sloan Foundation through 2010.

The CoML project History of Marine Animal Populations (HMAP) is composed almost exclusively of social scientists and historians and a number of published studies for species that have been commercially exploited through workshops. The Future of Marine Animal Populations (FMAP) is the counterpart to the HMAP and is what will live in the oceans. It is hoped that the data that the FMAP and HMAP are gathering will be available in OBIS.

OBIS is the data repository for the CoML and provides species distribution records of high taxonomic quality and tools for effective research, management, and education such as data requests and searches, network tools and models, and research and education centers.

Dr. Fautin stated that there will be a CoML report in 2010 and that the Sloan Foundation's vision was that the HMAP, the FMAP, and the field projects would go out of business and what would remain as the legacy of the CoML would be the data in OBIS. However, many projects will not be completed in 2010, and any projects continuing will have to have other sources of funding (as some already do).

The US facets of the CoML program are based on Federal mandates, recommendations from the National Research Council, the US Commission on Ocean Policy Report, and the Pew Commission Report.

She described in detail the global CoML, whose mission is to assess and explain the changing diversity, distribution, and abundance of marine species in the past, present, and future; the U. S. has chosen to focus on the functional role of marine biodiversity in the US and its territories and commonwealths, and to appropriate the global data to serve as an unbiased source of sound scientific information. The U. S. is emphasizing ecosystem-based management and focus is on data acquisition, data development, and tool development in order to serve National needs. The goals of the U. S. portion of the CoML program are to conduct ocean biodiversity research that support ecosystem based management and improve predictive capabilities that are used to project ecosystem changes. The international CoML program seeks to develop communication outreach efforts. Its outputs are:

- comprehensive management system of OBIS data;
- baseline information about extant marine biodiversity, as well as its functional role in ecosystems;
- assessment of new technologies for biological observations;
- discovery of new marine species and systems;
- historical perspectives of change in marine ecosystems;
- tools for improved management; and
- effective mechanisms for outreach and education about marine biodiversity.

As the amount of data in OBIS grows, nodes are being developed for OBIS that are geographically dispersed. The OBIS Portal (at Rutgers University) will receive most of its data from these nodes, limiting the number of data streams it handles. People in various parts of the world will be responsible for collecting OBIS data at each node and passing them on to the Portal.

### ***Open Discussion***

Dr. Shapiro said she would be interested in learning more about how the data from different models is combined. Dr. Fautin explained that the data collected are geo-referenced data. Polygons are being developed, but there is no footprint yet – just a toe print at the moment. The metadata allows the user, for example, to have some sense of what is in the Indian Ocean, and then records it. If the user wants to know what is in the Bay of Bengal, the record that has as its specified locality, just the Indian Ocean will likely be excluded. Dr. Shapiro said she asked that question since sometimes there is the opportunity to extend a timeline backwards by using, for example, traditional knowledge, but it is very difficult to use two very different kinds of data. Dr. Fautin agreed and added that is one of the pitfalls of a democratic distributed system of the sort.

Dr. Trefry said that he would be curious since a lot of the data the SC is involved with is chemical data, wherein quality can be all over the place. He asked if either she or Dr. Froomer have a routine in use for data quality control. Dr. Froomer replied that information can be selected by year. Such as, if one wants to see specific data from 1990, and only certain kinds of dissemination had been collected, the data can be refined to identify only considerable data and that could be one way to just retrieve that level of quality. Dr. Trefry asked if this is being done. Dr. Fautin added that there are two ways of doing it and that Fish Base is building a geographic search so that the range of a species will be displayed and records that are significantly outside of where most of them will occur will be flagged.



Dr. Tom Ahlfeld stated that if one species had been indicated, that species is one of the identification that is required for OBIS and asked if there is an economic level required. Dr. Fautin responded that currently they were new and the CoML is trying to be all inclusive and not exclude anyone, and she believes their standards are getting more rigorous and more fields are going to be required.

Dr. Kendall made a presentation of the ESP's Chemo III study at the Ocean Research Advisory Panel and announced that MMS now has a requirement that, in the deepwater Gulf, there will be real-time oceanographic information collected which will be turned over to NOAA's National Data Buoy Center and then immediately put on the web.

Dr. Shapiro asked if there is a policy for a time requirement from the time the data is collected until the point it must become publicly available. Dr. Kendall said that, in MMS's view, the data was paid for by the taxpayer, it eventually has to go there, and that he would assume the same thing would occur for the CoML. But by the same token, the researchers have the right to publish their information and get it into peer review literature. Dr. Shapiro said that it is her belief that many of the major programs have adopted a policy of 2 years before data is released into the public domain, but a much shorter timeline for sharing within a program.

Dr. Shapiro called recess.

## **Thursday, April 28, 2005**

This day was spent reviewing regional draft Studies Development Plans. Following a brief charge from the Chair to the Discipline Breakout Groups, the groups went into their sessions (Ecology/Biology, Physical Oceanography, and Social Sciences) to consider proposed regional priorities and information needs. Each Discipline Breakout Group met with staff members from each MMS OCS Region and Headquarters. In each breakout session, a Committee member was designated as a discussion leader and an MMS staff member was assigned to take notes. The Regional MMS Studies Chiefs and staff members were asked to identify, justify, and discuss priorities for future environmental studies.

## **Friday, April 29, 2005**

Dr. Shapiro called the meeting to order.

### **Discipline Subcommittee Reports**

#### **Ecology/Biology Discipline Breakout Group**

Drs. Castellini, Diaz, Shapiro, Rex, and Trefry are members of the Ecology/Biology Discipline Breakout Group. Dr. Castellini presented the report to the SC.

He stated that the group discussed the following issues facing the Regions:

- Alaska – monitoring,
- Gulf of Mexico Region – future programs for ultra deepwater,
- Pacific – decommissioning along with the fact that their program is very small, and
- Minerals (Sand and Gravel) – concerned with massive predicted growth in terms of sand and gravel needs, yet the program itself is fairly small.

#### **Recommendations for the Alaska OCS Region**

- Beaufort Sea Marine Fish Monitoring should be a split design phase from implementation.
- SEAWiFs should be increased priority-wise for assessing primary production in this region.
- Arctic cisco otoliths and genetics. Identifiable genetic and otolith signatures should be verified.
- Invasive Species. Globally, this is an important issue, but a low priority in this extreme environment.

#### **Recommendations for the Gulf of Mexico OCS Region**

- ultra-deepwater reef formation, including coral
- debris fields from rigs
- decommissioning
- sperm whale prey interactions
- synthetic-based drilling fluids, and
- the Mississippi-Alabama shelf revisited.

There are no new biological studies proposed for FY 2006.

The Group recommended study of the following issues:

- the use of ship wrecks as analogs for the long term impacts of decommissioned structures on the seafloor,
- debris fields from decommissioning operations (with attention paid to sharing information with the Pacific OCS region efforts) and lab and field studies on synthetic based muds, and
- MA shelf – monitoring effort in the Gulf of Mexico is a good idea. Caution in making the focus of the study a comparison with 1970s data was urged.

#### **Recommendations for the Pacific OCS Region**

The Group recognizes that the region is small in that there are only a few people.

- Main focus of studies is on decommissioning, alternate uses of platforms (Mari culture, wave energy), the Multi-Agency Rocky Intertidal Network interagency cooperation, and monitoring seeps.
- Change rankings:
  - support Decommissioning Information Transfer Meeting (ITM),
  - support the fish transplantation study (because of interagency support, natural seeps (cooperation with State),
  - relational database on seabirds and mammals,
  - pipeline fish assemblages,
  - reconsider phasing out CMI but maintain it at a minimal level in case of renewed need,
  - consider using compound specific isotope ratios on selected biomarkers,
  - animal care issues in fish transplantation study, and
  - share information with Gulf on decommissioning issues.

### **Sand and Gravel Recommendations**

- review the MMS mandate to ensure that appropriate studies are conducted,
- clarify cooperating agency roles and responsibilities,
- initiate long-term monitoring needs, and
- raise ITM to a priority 1 or 2.

### **General Recommendations for All of the Regions**

- An explanation of ranking process is needed at the outset of presentations
- get to objectives and methods more quickly,
- MMS needs to investigate animal care issues,
- continued communication within regions and with external agencies, and a need for collected data to go into a standardized database (e.g. OCS Connect), and
- initiate animal care policy processes. MMS is already dealing with this through the CMI's because the universities require it. However, within individual groups, the National Institute of Health (NIH) obviously deals with this daily and NSF felt that since it is an intergovernmental agency dealing with animal care, it will follow the NIH guidelines. Dr. Castellini informed MMS that it needs to begin thinking about it also since it will be required in the future.

### ***Open Discussion***

Dr. Smith asked Dr. Castellini if he felt that we are learning something which allows us to make conclusions regarding whether or not required operating practices appropriately protective. Dr. Roscigno replied that he thinks we are learning [enough to say] that operating practices are protective depending on the species of interest. As an example, he stated that MMS' knowledge of the sperm whale is adequate in making sure they do not come into too close contact with sound sources. However, for other problems such as contaminant fields around platforms, he believes that the knowledge base there demonstrates that the problem is being adequately understood and that whatever the impact is, it can be mitigated or minimized."

Dr. Fred Piltz asked Dr. Castellini to expand on the general recommendation regarding initiating an animal care policy process. Is the Group suggesting MMS incorporate in Requests for Proposals and Statements of Work (SOW's) reference to the NIH guidelines? Dr. Castellini explained that yes, at a minimum, animal policy issues are going to have to be followed. The universities are already doing this; however, he stated that concerned is with the work the regions are doing in funded studies going out to private entities, subcontractors, or groups that are not universities. Dr. Shapiro recommended that each region work with its own university groups and ask them what it is being done.

### **Physical Oceanography Discipline Breakout Group**

Drs. Kosro, Scranton, Smith, and Stephenson-Hawk are members of the Physical Oceanography Discipline Breakout Group. Dr. Kosro presented the report to the SC.

### **Recommendations for the Alaska OCS Region**

- **Design a study for Boundary Oceanography in the Beaufort and Chukchi Seas.** This follows the recommendation of the Workshop on Physical Oceanography in the Beaufort Sea and is needed to explore solving problems of open boundary conditions for modeling; an interagency partnering is explicitly planned.
- **Mesoscale Meteorology.** This model study was recommended by the Physical Oceanography Workshop and seeks understanding of sea breeze and orographic effects. This would be a phased approach with data search as the first step which is seen as valuable even if the rest can't be funded. It was suggested that partners be sought for funding model construction and testing.
- **Mapping Overflood with Remote Sensing.** The Group endorsed the use of remote sensing backed with aerial surveys to delineate over flooding extent due to impacts on scour, sediments, biology, and buoyant fluxes. However, it was uncertain as the rank of importance for fault tree analysis. The Group also considers river staging data for robust supplement to gauging (from 2004 report).
- **High Resolution Bathymetry.** The Group feels this is important for ocean circulation, ice dynamics, and logistics. It again endorsed the phased approach with cost sharing sought for the expensive field work. The Group also strongly endorses data rescue efforts from existing recent data sets not yet available to MMS; this should be done even if partners not available.

Dr. Smith added, in reference to the over flooding study, that the question about the importance of the fault tree analyst isn't so much the Group's questioning the importance of it, but what is important relative to the other sources of risk in fault tree. For instance, the strudel scour is one aspect of the fault tree analysis. There are some other places where some data are needed, and that's what is being referred to there. The Group wants to be certain that it understands how important that is relative to the other risk factors.

### **Recommendations for the Gulf of Mexico OCS Region**

- **Hydrate Studies through Literature Search/Synthesis** which would include sites, associated communities, and likely impacts, and a sensible level of pre-use activity to identify the scope of potential environmental issues.
- **Prehistoric Shell Middens.** The Group stated that this would be an important and rare opportunity to obtain field verification of archaeological model for prehistoric site location likelihood and the Group endorses mission-relatedness of the study.
- **Integrated Ocean Observing System (IOOS).** The Group concluded that MMS has been successful in ensuring that its program needs are addressed by the NOPP and feels that MMS should work with the emerging IOOS structure as proposed, so that its measurement, modeling, and data format needs are considered in IOOS planning. Plans for a workshop are good; invitations should also be extended to representatives of all regional associations.

The Group also encouraged an open process for proposing pilot programs.

A continued study that was also examined was the ongoing program of deepwater measurement sampling to fill in critical gaps in knowledge of deep-circulation processes. The Group felt this is beneficial and sees high value in continued international collaboration with Mexican colleagues and institutions, both through cooperative fieldwork and collaborative workshops.

### **Recommendations for the Pacific OCS Region**

None

### **Sand and Gravel Recommendations**

- The Group believes that evaluations of environmental impacts of sand borrow projects is central to MMS stewardship in the OCS, and it strongly endorses a continued sand and gravel program if sand borrow is to continue in the OCS.
- The Group is also pleased to see protocols for studies of environmental impacts developed and encourages the widest possible peer review and promulgation.
- The Group considers the proposed ITM a good opportunity to tell colleagues about sand and gravel work and leverage efforts through collaboration; it recommends elevating the ranking of the ITM to priority.

- The program to model for critical threshold is endorsed, as are site specific studies; also, a longitudinal study, as called for in the protocols, is seen as very important, particularly during these early days of the program.
- Out-year studies called for in the protocols should be done, prioritizing by site as needed, with sites of multiple extractions seen as especially important.

#### **Air Quality Recommendations**

- The Group agrees with the value of bringing the meteorological and air quality data, 1990-present, into a commonly used database format, with Quality Control.
- The proposed plan to provide data in a useful format to states and EPA will strengthen valuable collaborative links.
- Statistical analyses could be valuable, but more specifics are needed to evaluate them.

#### **Proposed FY 2007 Air Quality Issues**

- **The Spill of Opportunity (Synthetic-based Fluid).** The Group is concerned about potential difficulty in finding spill remains in contamination by wetted cutting and in determining effects during early spill history. However, the Group feels that a lab-based Synthetic Based Drilling Fluid Droplet Size And Fall Velocity Study proposed as an add-on would be valuable in early time-history and that readiness costs suggest the response should not be in “hours to days”, but in “days to weeks.”
- **Ultra-Deepwater Circulation Processes.** The Group recognizes an opportunity to incorporate new ultra-deepwater data from MMS and Mexico into testing circulation process models. The Deepwater Synthesis study concluded that such models were needed to understand the energetic deepwater events, many of them being of small scale. The goal of increasing model skill in process studies should be explicit.

#### **Socioeconomics Discipline Breakout Group**

Drs. Gill and Edella Schlager are members of the Socioeconomics Discipline Breakout Group. Dr. Gill presented the report to the SC.

He explained that the Group overviewed the new starts and recognized that there are basically no new proposed studies in socioeconomics for Pacific or Alaska. There is one for headquarters, which is the archeology and four new starts for the Gulf of Mexico, one of which included the archeology study. Also reviewed were FY 2007 studies including two for Alaska and two for the Gulf of Mexico.

#### **Recommendations for the Alaska OCS Region**

- **Socioeconomic Book (Phase II).** This study supports Alaska initiatives on education and outreach, and carrying forward key findings from the Technical Dialogue Study. MMS should consider using cultural communication specialists and not mirror Phase I Book.
- **Exploring Potential Visual Resource Effects from Oil Development in Cook Inlet.** This study needs to include residents, tourists, and visitors in the sampling strategy as well as visualization software in methodology. In regards to ongoing Alaska Social Science studies, the Group recommended that a pool of reviewers contact journal editors for responsible peer reviewers.
- **Response Rate of North Slope Borough** which would compare response rate for high school students in general.
- **Environmental Education** which would acknowledge efforts.

No new starts for Alaska; two proposed for FY 2007.

Dr. Gill said that the general issue facing social scientists is cumulative impacts of social science research on local communities and human subjects. This does not only pertain to MMS studies, but other studies as well. There is a very small population in Alaska, and the same communities and people are becoming inundated with surveys resulting in survey burn-out. As an example, he described the community of Cordova where studying community impacts of the Exxon Valdez oil spill since 1989 are continuing. He added that he does not think that this needs immediate attention, but that it is something to consider as we move forward in socioeconomic research.

### **Recommendations for the Gulf of Mexico Region**

- **State and Local Fiscal Effects of the Offshore Petroleum Industry.** The Group feels that this is a valuable study and that methods should (1) characterize each state's revenue and allocation mechanisms relating to oil, (2) examine historical context noting critical points of change, (3) emphasize counties, municipalities and special districts that are affected by oil, and (4) draw on fiscal impacts literature from political science, economics, and public policy.
- **An Analysis of the Oil Services Contract Industry in the Gulf of Mexico Region.** The Group agreed that this is a challenging topic for data collection and that it should be approached by observation expert opinion. The study should be conducted in two phases - the first being able to identify and disaggregate components of contract industry sectors, and the second phase (if Phase I is successful) would be a detailed description of key sectors. The SOW should include lessons learned from the Labor Needs Study and the CMI's Collaborative Study with a defined timeframe and possibly include discussion of future trends.
- **Gulf Coast Communities and the Fabrication and Ship Building Industry.** This is a useful study and the Group identified some methodological suggestions: (1) review available oral histories from the History project, (2) examine Morgan City first because of available data, and (3) include Port Aransas, Ingleside, and Brownsville, Texas.
- **Prehistoric Archaeology Shell Midden Study.** The Group is supportive of this study and encourages cooperation with other agencies and institutions.
- **Socioeconomic Effects of the Offshore Petroleum Industry on Urban Communities.** The Group agrees that this is a great study concept to examine literature in sociology, history, specific industries in big cities, and urban areas.
- **Environmental Risk Associated with Support Vessel Usage by the OCS Oil and Gas Industry.** This study should be expanded to include transportation sector since results could be useful for management reviews.

### **Recommendations for the Pacific OCS Region**

None

### ***Open Discussion***

Dr. Shapiro asked Dr. Gill what his thoughts were in regard to the absence of new starts in the social sciences in two of the regions and if he thought there were obvious omissions of studies that should have gone forward. Dr. Gill answered that he is not concerned since there are eight ongoing studies in Alaska and because of his statement not to inundate communities with surveys. Dr. Schlager added that the Gulf of Mexico Region's socioeconomics studies are highly ranked; therefore, in terms of the studies across the region, there are some new starts coming that are highly ranked.

Dr. Castellini asked a question to both the Alaska OCS Region and Dr. Gill: Given the erosion problems occurring on the coast in Northwest Alaska where entire villages are having to be moved, he wondered if erosion problems fall in the MMS or the state realm. Dr. Cowles replied that it is probably not a strong relationship to MMS's mission; however, previous work on mapping coastlines and coastal zone sensitivity has been shared. He has had direct communications as well as the Contracting Officer's Technical Representatives for some of the past studies with other Arctic researchers who use that information to track the coastal erosion rate. Collaboration with other agencies is also being kept such as the North Slopes Science Initiative which is a group of agencies that focuses on the North Slope research. He concluded that should future partnership opportunities materialize, specifically with areas near offshore oil and gas, and it is hypothesized that offshore activities may have some relationship, then MMS would become involved.

### **Committee Business**

Items to the Director were discussed as well as other business, including the following emerging issues: continue to support the Sand and Gravel Program; review data policy; animal care policy needs to be initiated; emphasize objectives; continue to work with other agencies; high-level communication needs to continue; ESP budget; and the Energy Bill and how the MMS will be impacted.

The SC members will be polled to determine the best dates (Spring 2006) to hold the next meeting which may be held in California, New England, or the Gulf of Mexico.

The meeting was adjourned by Dr. Shapiro.

## **OBSERVATIONS OF THE MMS/EPA/DOI HYPOXIA MEETING**

### Information Gathering

The Experts Meeting occurred in August 2004. It was followed in September 2004 by a one-day modelers meeting to inform USEPA and MMS of available models, the required model inputs, area covered by each model, and the model outputs. The models of Dubravko Justic, Victor Bierman, and Donald Scavia were presented.

### USEPA NPDES permit

The USEPA NPDES permit became effective in November 2004, but for a 3-year period instead of the customary 5-year interval. The permit required a produced water study (produced water sampling and modeling). Findings from the study will be used to modify the permit in 2007, if necessary.

### Produced Water Study.

John Veil, Argonne National Labs is coordinating the produced water sampling portion of the study. The USEPA requested data from fifty sample locations. They specified that 16 locations be sampled a total of three times each to determine variability. EPA also specified that these locations meet nine categories (3 levels of produced water flow volume x 3 types of hydrocarbon production [oil/mix/gas]) so as to learn how produced water characteristics may vary related to flow volume and the type of hydrocarbon produced. The USEPA did not have the data to identify sample locations meeting their nine categories and relied instead on MMS metering data.

The remaining 34 locations were to be selected randomly from an MMS-generated list and sampled one time each. Since MMS data is by lease, rather than platform or discharge, it turned out that many of the leases did not have a discharge. With USEPA approval, the sample location selection process for the one-time platform group was changed and samples will be collected randomly from a voluntary 'platform registry' compiled by OOC. Sampling commenced in February. Sample collection from the three-time platform group will be completed by the end of April. Sampling from the one-time platform group will begin April 11 and should be completed by the end of May. The findings are due to USEPA in August, 2005.

USEPA located sufficient funds to contract Victor Bierman (Limno-Tech, Inc) to run his model using inputs obtained during the sampling effort. The goal is to finish sampling and modeling by November 2006 so that there will be no lapse in permit coverage.



**Minerals Management Service (MMS)  
Outer Continental Shelf (OCS)  
OCS Scientific Committee (SC)  
Meeting Agenda**

**MEETING DATES:** April 27 – 29, 2005  
**LOCATION:** Embassy Suites  
Dulles, Virginia

**Wednesday, April 27, 2005**

- 8:00 a.m. – 8:15 a.m. Welcome and Introductions  
Dr. Lynda Shapiro, Chair, OCS Scientific Committee  
Dr. James Kendall, MMS Chief Scientist and Executive Secretary of the OCS SC
- 8:15 a.m. – 9:15 a.m. Subcommittee Reports & Discussion
- Deepwater – [Dr. William Schroeder](#), Member, Deepwater Subcommittee
  - Arctic – [Dr. Michael Castellini](#), Subcommittee Chair
  - Observations of the MMS/EPA/DOI Hypoxia Meeting – [Drs. Bob Diaz and Mary Scranton](#), Meeting Observers
- 9:15 a.m. – 10:15 a.m. MMS Archaeological Studies Fulfilling MMS Information Needs  
[Dr. Melanie Stright](#), Historical Preservation Officer  
[Dr. Jack Irion](#), MMS Gulf of Mexico OCS Region
- 10:15 a.m. – 10:30 a.m. Break
- 10:30 a.m. – 10:45 a.m. Report from the last OCS Policy Committee Meeting  
[Mr. Berry H. Tew](#), Chair, OCS Policy Committee
- 10:45 a.m. – 11:30 a.m. MMS Director's Presentation and Discussion with the Committee  
[Ms. Johnnie Burton](#), Director, MMS
- 11:30 a.m. – 1:00 p.m. Lunch
- 1:00 p.m. – 1:30 p.m. Some Highlights of the MMS *Environmental Studies Program* and our goal for the next day-and-half  
[Mr. James Cimato](#), Acting Chief, Environmental Studies Program
- Mercury Subcommittee Report, [Dr. John Trefry](#)
- Some Highlights of the MMS *Environmental Studies Program* and our goal for the next day-and-half – [Continued](#)

1:30 p.m. - 1:45 p.m.

Charge to the Discipline Subcommittees  
Dr. Lynda Shapiro, Chair, OCS Scientific Committee

**Physical Sciences, Biology, and Socioeconomic Disciplines meet separately to discuss national and regional studies plans.**

|                | <b>Biology/Ecology<br/>Decommissioning</b> | <b>Physical Sciences<br/>Phys-O, Air Quality</b> | <b>Social Sciences</b> |
|----------------|--|--|------------------------|
| 1:45 -<br>3:30 | Pacific                                    | Gulf of Mexico/HQ                                | Alaska                 |
| 3:30 -<br>4:00 | Break                                      | Break  | Break                  |

4:00 pm. – 5:30 p.m.

Environmental Data Forum: *Think Globally, Act Locally!*  
Managing MMS Data, *Today and in the Future*  
Dr. Norm Froomer, MMS Environmental Division

Managing Environmental Data at a Global Level  
[Dr. Daphne G. Fautin](#), Professor, Ecology and Evolutionary  
Biology, University of Kansas

**Minerals Management Service (MMS)  
Outer Continental Shelf (OCS)  
OCS Scientific Committee (SC)  
Meeting Agenda**

**Thursday, April 28, 2005**

|               | <b>Biology/Ecology and Interdisciplinary</b>                    | <b>Physical Sciences</b>  | <b>Social Sciences</b>  |
|---------------|---|---|---|
| 8:00- 9:30    |   | Sand & Gravel   |   |
| 9:30 - 10:00  | Break   | Break   | Break   |
| 10:00 - 12:00 | Alaska  | Sand & Gravel   | Gulf/HQ-Social Sciences   |
| 12:00 - 1:30  | Lunch   | Lunch   | Lunch   |
| 1:30 - 3:30   | Gulf Biology  | Alaska (Phys-O)   | Gulf/HQ – Social Sciences   |
| 3:30 - 3:45   | Break   | Break   | Break   |
| 3:45 - 5:30   | Biol./Ecol. Chairs and MMS Recorder<br>Finalize Recommendations | Physical Sciences Chairs and MMS Recorder<br>Finalize Recommendations | Social Sciences Chairs and MMS Recorder<br>Finalize Recommendations |

**Minerals Management Service (MMS)  
Outer Continental Shelf (OCS)  
OCS Scientific Committee (SC)  
Meeting Agenda**

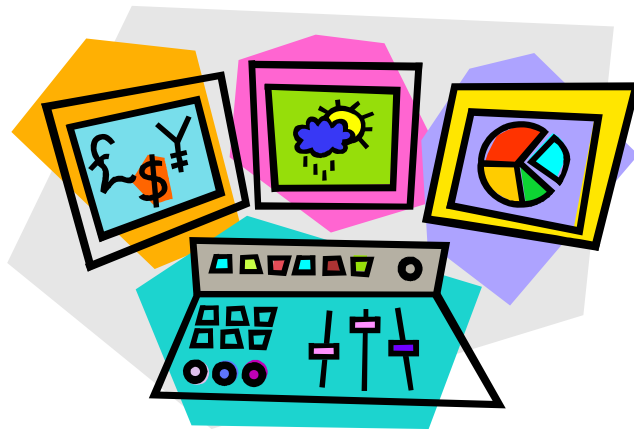
**Friday, April 29, 2005**

- |                        |  |
|------------------------|--|
| 8:00 a.m. - 8:15 a.m.  | Plenary Session<br>Opening Comments, Chair, OCS SC   |
| 8:15 a.m. – 9:45 a.m.  | Discipline Subcommittee Reports<br>(20 minutes each) <ul style="list-style-type: none"><li>• <a href="#">Biology and Ecology</a></li><li>• <a href="#">Physical Oceanography</a></li><li>• <a href="#">Social Sciences</a></li></ul> Open Discussion of Subcommittee Reports |
| 9:45 a.m. - 10:00 a.m. | Break  |
| 10:00 a.m. –11:00a.m.  | Open Discussion of Subcommittee Reports-continued  |
| 11:00 a.m. –11:30a.m.  | Public Comment   |
| 11:30 a.m. - 12:30p.m. | <a href="#">Committee Business</a> <ul style="list-style-type: none"><li>• Items for Letter to the Director</li><li>• Emerging Issues/Topics of Interest</li><li>• Other Business</li><li>• Dates and locations for the next meeting</li></ul>                               |
| <b>12:30 p.m.</b>      | <b>Adjourn the meeting</b>   |

# **OCS Scientific Committee**

## **MINERALS MANAGEMENT SERVICE**

### **MEMBERSHIP INFORMATION**



**Dulles (Sterling), Virginia**  
**April 27-29, 2005**

## Michael Angelo Castellini

Dr. Castellini is the Director of the Institute of Marine Science, University of Alaska Fairbanks. Projects focus on many different aspects of marine mammal biology. Some of these include nutritional physiology of harbor seals and Steller sea lions in Alaska as related to their population declines and to the survival of seal and sea lion pups. Other projects include studies on lipid metabolism in marine mammals, the biochemistry of contaminants, metal chemistry, anti-oxident chemistry and immune function. These programs are both field-based from the Arctic to the Antarctic and conducted in collaboration with marine laboratories throughout North America.

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e-mail: mikec@ims.uaf.edu

Discipline: Marine Biology

|                              |                   |
|------------------------------|-------------------|
| Appointed:                   | December 18, 2001 |
| Appointed Under New Charter: | March 30, 2004    |
| Eligible for Reappointment:  | January 1, 2006   |

## James M. Coleman

James M. Coleman is a Boyd Professor for the Coastal Studies Institute and recently served as Interim Vice-Chancellor for Research and Graduate Studies at Louisiana State University. He started his professional career as a graduate student at Coastal Studies Institute, LSU, and eventually serving as director of CSI, chairman of Geology and Geophysics, head of the School of Geoscience, and interim dean of Basic Sciences before being named Executive Vice-Chancellor in 1989. He has conducted worldwide research on deltaic sedimentation, riverine processes, marine geology, shallow structure of shelf sediments, and muddy coasts. He serves on numerous local, state, and national committees and is presently a member of the Ocean Studies Board, National Research Council, and has recently been appointed to the U.S. Commission on Ocean Policy.

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e-mail: chanjc@lsu.edu

Discipline: Oceanography/Geology

|                                 |                                |
|---------------------------------|--------------------------------|
| Appointed:                      | October 1, 1993                |
| Reappointed:                    | June 7, 1995, October 27, 1997 |
| Appointed Discretionary Member: | October 25, 2000               |
| Reappointed:                    | January 6, 2003                |
| Appointed Under New Charter:    | March 30, 2004                 |
| Eligible for Reappointment:     | January 1, 2007                |

## Robert J. Diaz

Dr. Diaz's research interests center around understanding trophic dynamics and the functional importance of production in ecosystems, benthic boundary layer processes, and organism-habitat interactions, and how perturbations of these processes influence energy flow and population dynamics. Recently he has focused on organism-habitat interaction on the inner continental shelf to predict how sand dredging will affect fish and invertebrate communities. He is striving to estimate the relative resource value of various estuarine and marine benthic habitat types for the dual purpose of quantifying energy flow between habitats and for developing environmentally sound management strategies. This research has led him to consider a landscape ecological approach to looking within and between systems around the U.S. for how the physical and biological processes interact. In addition, he is also interested in the application of the statistical and numerical methods to biological data and in the ecology and taxonomy of estuarine and marine invertebrates with specialization in oligochaetes.

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fax: (804) 684-7399  
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Discipline: Biological Sciences

|                              |                   |
|------------------------------|-------------------|
| Appointed:                   | December 18, 2001 |
| Appointed Under New Charter: | March 30, 2004    |
| Eligible for Reappointment:  | January 1, 2006   |



## Duane A. Gill

Dr. Gill is Professor of Sociology in the Social Science Research Center and Department of Sociology, Anthropology and Social Work at Mississippi State University. He has conducted research on the *Exxon Valdez* oil spill, *Selendang Ayu* shipwreck/oil spill, Gulf of Mexico fisheries, and various environmental issues in Mississippi. His research interests include technological disasters, natural resource management, and community.

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Discipline: Socioeconomics

|                              |                   |
|------------------------------|-------------------|
| Appointed:                   | October 1, 1999   |
| Reappointed:                 | December 18, 2001 |
| Appointed Under New Charter: | March 30, 2004    |

## Richard G. Hildreth

Dr. Hildreth is the author of three casebooks and many other publications on ocean and coastal law. He has consulted frequently with federal and state coastal management agencies in the U.S. and Australia and with Pacific Island governments on environmental legal matters. Dr. Hildreth served as the University of Queensland Law Faculty's 50th Anniversary Visiting Fellow. He has served on the National Research Council's Non-native Oysters and Coastal Ocean Committees, the Pacific Northwest Regional Marine Research Board, and the editorial advisory boards of the journals Coastal Management and Ocean Development and International Law. Dr. Hildreth practiced business law with Steinhart & Falconer in San Francisco before teaching law.

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Discipline: Socioeconomics

|                              |                 |
|------------------------------|-----------------|
| Appointed:                   | January 1, 2003 |
| Appointed Under New Charter: | March 30, 2004  |
| Reappointed:                 | January 1, 2005 |
| Eligible for Reappointment   | January 1, 2007 |

## Lee L. Huskey

Dr. Huskey is a Professor of Economics in the college of business and Public Policy at the University of Alaska Anchorage. His research focus is the economies of the North, including the effects of resource development and government policies on northern communities. Current research examines the determinants of migration of indigenous people in the North between rural and urban communities. Dr. Huskey is currently Chair of the Economics Department.

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fax: (907) 786-4115  
e-mail: afl2@uaa.alaska.edu

Discipline: Socioeconomics

Replaced Dr. Oliver Scott Goldsmith

|                              |                   |
|------------------------------|-------------------|
| Appointed Under New Charter: | March 30, 2004    |
| Eligible for Reappointment:  | December 31, 2005 |

## P. Michael Kosro

Dr. Kosro is an Associate Professor of Oceanography at Oregon State University. His research focus is coastal physical oceanography. His group operates a near-real-time mapping system for surface currents spanning the waters of the Oregon shelf and upper slope, as well as conventional moored and shipborne measurements. Recent studies include the circulation changes off Oregon associated with the 1997-98 El Niño, the mesoscale features of the upwelling circulation, California Current and undercurrent, and spatial mapping of tidal flows and the Columbia River outflow. He is a steering committee member for NANOOS (Northwest Association of Networked Ocean Observing Systems).

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e-mail: [kosro@coas.oregonstate.edu](mailto:kosro@coas.oregonstate.edu)

Discipline: Physical Oceanography

|                              |                 |
|------------------------------|-----------------|
| Appointed:                   | January 1, 2003 |
| Appointed Under New Charter: | March 30, 2004  |
| Reappointed:                 | January 1, 2005 |
| Eligible for Reappointment:  | January 1, 2007 |

## Livingston S. Marshall, Jr.

Dr. Livingston Marshall Jr., currently works as a Consultant and Science Advisor in the Office of the Prime Minister (OPM), Nassau, Bahamas and was recently named Executive Director of the Marine and Environmental Studies Institute (MESI) of The Bahamas. Prior to taking these positions, Dr. Marshall held faculty positions at Morgan State University, Clark Atlanta University, and the University of Maryland Eastern Shore. His academic accomplishments include a Bachelors degree in Marine Science from Hampton University and a Ph.D. in Marine Science from the College of William and Mary, School of Marine Science, Virginia Institute of Marine Science. His many years of professional research experience in marine and estuarine systems have focused on applied fisheries, habitat restoration, ecosystem monitoring, conservation, and environmental policy. As a Consultant and Science Advisor to the Prime Minister and Government of The Bahamas, Dr. Marshall provides scientific advice on a range of marine and environmental science, research, education and policy initiatives. As the new MESI Executive Director, Dr. Marshall is responsible for establishing and administering the institute consistent with its integrated "functional" (research, education, training and policy) and "thematic" (coastal zone management and conservation) programming.

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Email: [lmarshall@moac.morgan.edu](mailto:lmarshall@moac.morgan.edu) (Adjunct Assoc. Prof. of Biology)

Discipline: Biology

Appointed: December 18, 2001

Appointed Under New Charter: March 30, 2004

Eligible for Reappointment: January 1, 2006

## Michael A. Rex

Dr. Rex's research is centered on the ecology and evolution of deep-sea benthic communities. It includes analyses of bathymetric and global-scale patterns of biodiversity and their causes. We are using satellite imagery to examine the relationship of surface production to community structure in the deep sea at different temporal and spatial scales. Geographic variation in body size of mollusks is being explored to study adaptation to the deep-sea environment. Multivariate analyses of shell architecture and mitochondrial DNA are being employed to study patterns of population differentiation in deep-sea mollusks. Adaptive radiation and taxon cycles are being investigated by documenting patterns of taxonomic diversity. A major long-term research goal is to synthesize patterns of distribution, geographic variation, taxonomic composition and life histories to formulate a model of evolution in deep-sea invertebrates.

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Discipline: Biology

|                              |                   |
|------------------------------|-------------------|
| Appointed:                   | December 18, 2001 |
| Appointed Under New Charter: | March 30, 2004    |
| Eligible for Reappointment:  | January 1, 2006   |

## Edella C. Schlager

Dr. Schlager is an Associate Professor in the School of Public Administration and Policy at the University of Arizona. She holds a Ph.D. in Political Science from Indiana University. Her research centers on local community management of natural resources, such as watersheds in the western United States and coastal fisheries.

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Discipline: Socioeconomics/Public Policy Issues

|                              |                   |
|------------------------------|-------------------|
| Appointed:                   | October 1, 1999   |
| Reappointed:                 | December 18, 2001 |
| Appointed Under New Charter: | March 30, 2004    |

## Mary I. Scranton

Dr. Scranton received a BA in Chemistry from Mount Holyoke College and a PhD. in Oceanography from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program. Her dissertation was on the marine geochemistry of methane. Following her dissertation work, she spent 2 years as a National Academy of Sciences/National Research Council postdoctoral fellow at the Naval Research Lab in Washington, D.C., working on analytical and geochemical aspects of hydrogen gas distributions in the ocean and atmosphere. Since 1979, she has been at the Marine Sciences Research Center of Stony Brook University. In recent years she has been interested in the factors controlling the cycling of organic compounds in sediments and in the water column, primarily as a part of the CARIACO (Carbon Retention in a Colored Ocean) program, a study of carbon cycling in the Cariaco Basin, Venezuela. She also maintained her long-standing interest in methane geochemistry and is investigating the role of seeps and vents, and possibly of destabilizing gas hydrates, in controlling water-column methane concentrations near the US North-East continental shelf.

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Discipline: Chemical Oceanography

|                              |                 |
|------------------------------|-----------------|
| Appointed:                   | January 1, 2003 |
| Appointed Under New Charter: | March 30, 2004  |
| Reappointed:                 | January 1, 2005 |
| Eligible for Reappointment:  | January 1, 2007 |



## Lynda P. Shapiro

After completing her Ph.D. at Duke University, Dr. Shapiro worked at the Woods Hole Oceanographic Institution, the Bigelow Laboratory for Ocean Sciences, and the University of Oregon. She directed the University's marine laboratory, the Oregon Institute of Marine Biology, from 1990 to 2001, and continues there as a Professor Emerita of Biology. Her research centers on the biology of pelagic marine phytoplankton. In recent years, she has focused on the distributions and abundances of the eukaryotic ultraplankton, on incorporation of these minute cells into the microbial food web, and on the role of associated bacteria on the nutrition of phytoplankton. She also is interested in harmful algal blooms and in the sustainable harvesting of marine macroalgae.

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fax: (541) 888-3250  
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Discipline: Ecology/Biology

|                              |                   |
|------------------------------|-------------------|
| Appointed:                   | October 1, 1999   |
| Reappointed:                 | December 18, 2001 |
| Appointed Under New Charter: | March 30, 2004    |

## Joseph P. Smith

Dr. Smith is group leader for environmental technology research at ExxonMobil Upstream Research Company. He holds a Ph.D. in physical chemistry from the University of California at Berkeley (1978) and a B.S. in chemistry from the University of Rochester (1972). He joined Exxon Production Research Company in 1981 and has been active in research on the environmental aspects of offshore oil and gas operations since 1990. His research interests include numerical modeling of offshore discharges, the environmental fate and effects of drilling and production discharges, oil spill response techniques for deepwater and arctic environments, and the environmental aspects of liquefied natural gas processing. He is currently serving as chairman of the Offshore Operators Committee Environmental Sciences Subcommittee and as a member of the editorial review committee for *SPE Production and Facilities*.

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ExxonMobil Upstream Research  
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phone: (713) 431-4532  
fax: (713) 431-6423  
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Discipline: Physical Oceanography

|                              |                 |
|------------------------------|-----------------|
| Appointed:                   | January 1, 2003 |
| Appointed Under New Charter: | March 30, 2004  |
| Reappointed:                 | January 1, 2005 |
| Eligible for Reappointment:  | January 1, 2007 |

## Denise M. Stephenson-Hawk

Dr. Stephenson-Hawk is principal of a consulting group assisting organizations with the application and use of science and educational tenets for purpose of strategically influencing policy and organizational and resource allocation decisions. She has a B.S. degree in Mathematics from Spelman College; a M.S. degree in Environmental Modeling from The George Washington University; and M.A. and Ph.D. degrees in Geophysical Fluid Dynamics from Princeton University. Dr. Stephenson Hawk has served as an ocean systems analyst at AT&T Bell Laboratories, an atmospheric scientist at the National Aeronautics and Space Administration's (NASA) Langley Research Center, and as professor, chair and provost within academia. She has served as a principal investigator for research funded by the National Science Foundation (NSF), NASA, U. S. Department of Energy and the U.S. Department of Education. She has also been appointed to national committees that include the NSF's Geosciences Advisory Committee, NASA's Earth Systems Science Applications Advisory Committee, the Ocean Research Advisory Panel of the National Ocean Partnership Program and the National Oceanic and Atmospheric Administration's Science Advisory Board. She has worked with educators at the K-12 level, serving as co-chair for statewide (Georgia) workshops for K-12 teachers of mathematics and science and as co-principal investigator for an NSF-funded Urban Systemic Initiative in Atlanta, Georgia.

Chairman, The Stephenson Group  
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Discipline: Physical Oceanography

|                              |                   |
|------------------------------|-------------------|
| Appointed:                   | December 18, 2001 |
| Appointed Under New Charter: | March 30, 2004    |
| Eligible for Reappointment:  | January 1, 2006   |

## John H. Trefry

Dr. Trefry is a Professor of Chemical Oceanography at Florida Institute of Technology. His research activities focus on the concentrations and cycling of trace metals in rivers, estuaries, oceans and deep-sea hydrothermal vents. Trace metals are studied for their natural value and for their potential as pollutants. Dr. Trefry's research activities are carried out in a wide variety of geographical settings including the Pacific and Atlantic Oceans, the Alaskan Arctic, the Gulf of Mexico and the Indian River Lagoon, Florida.

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Discipline: Chemical Oceanographer/Biology

|                              |                 |
|------------------------------|-----------------|
| Appointed:                   | January 1, 2003 |
| Appointed Under New Charter: | March 30, 2004  |
| Reappointed:                 | January 1, 2005 |
| Eligible for Reappointment:  | January 1, 2007 |

## Executive Director

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## Executive Secretary

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## **SUBCOMMITTEES**

### **Deepwater Subcommittee Members**

|             |                |
|-------------|----------------|
| Jim Coleman | Will Schroeder |
| Mike Rex    | Joe Smith      |
| Mike Kosro  |                |

### **Arctic Subcommittee Members**

|                    |                |
|--------------------|----------------|
| Michael Castellini | Will Schroeder |
| Lee Huskey         | Lynda Shapiro  |

### **Marine Minerals Subcommittee Members**

|                  |                     |
|------------------|---------------------|
| Jim Coleman      | Duane Gill          |
| Bob Diaz - Chair | Livingston Marshall |
| Richard Hildreth |                     |

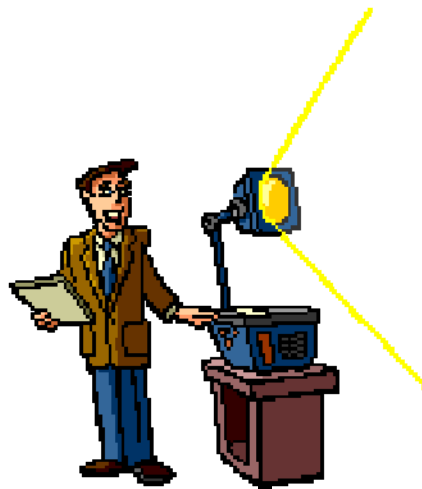
### **Decommissioning Subcommittee Members**

|                     |               |
|---------------------|---------------|
| Livingston Marshall | Mary Scranton |
| Richard Hildreth    | Mike Kosro    |

### **GOM Social Economic Research Subcommittee Members**

|            |                  |
|------------|------------------|
| Duane Gill | Richard Hildreth |
| Lee Huskey | Edella Schlager  |

***Outside Speakers  
at the  
Outer Continental Shelf  
Scientific Committee Meeting***



## Daphne Fautin

Dr. Fautin is a Professor, Ecology and Evolutionary Biology and is Curator, Natural History Museum and Biodiversity Research Center Haworth Hall University of Kansas. She is an invertebrate zoologist and does research centered on sea anemones. Because one of her major interests is symbiosis, she has worked also on a variety of organisms that live with sea anemones, including fishes, crustaceans, and algae. Her doctoral research was on sea anemone reproduction and this is being continued with current research being on reproductive periodicity of an abyssal species. She is also interested in general natural history, particularly with regard to habitat specificity. Her post-doctoral research was in pharmacognosy in which she extracted biologically active compounds from sea anemones for possible development as new pharmaceuticals. She is currently active in professional organizations, currently serving on the International Steering Committee of the Ocean Biogeographic Information System, serving on the US National Committee for the International Union of Biological Sciences, and chairing the US National Committee for the Census of Marine Life. She has served on the editorial board of several scientific publications and teaches a course on scientific communication.

## Berry (Nick) Tew

Berry H. (Nick) Tew, Jr. is Alabama's State Geologist and Oil and Gas Supervisor. In these capacities, he serves as Director of the Geological Survey of Alabama and the State Oil and Gas Board of Alabama. He also holds an appointment as an adjunct professor in the Department of Geological Sciences at the University of Alabama. Nick has earned Bachelor's, Master's, and Ph.D. degrees in geology. Nick has extensive experience in various aspects of the geology of the eastern Gulf Coastal Plain of North America. His research background includes petroleum geology, stratigraphy, sequence stratigraphy, sedimentology, and paleogeography of the surface and subsurface Mesozoic and Cenozoic strata of this area. Nick's research has led to the publication of numerous authored and coauthored reports, journal articles, guidebooks, and abstracts. Nick currently serves as Chairman of the Minerals Management Service Outer Continental Shelf (OCS) Policy Committee and Treasurer of the Association of American State Geologists. He is Alabama's official representative to the Interstate Oil and Gas Compact Commission, a member of the Alabama Board of Licensure for Professional Geologists, a Commissioner on the North American Commission on Stratigraphic Nomenclature, and a member of the Board of Directors of the National States Geographic Information Council.



# ***MINERALS MANAGEMENT SERVICE***



***Dulles (Sterling), Virginia  
April 27-29, 2005***

***Personnel Who Interact with  
the OCS Scientific Committee***

## **Johnnie Burton**

Ms. Burton's appointment as Director, Minerals Management Service, became effective on March 15, 2002. Ms. Burton's background provides a solid mix of experience in state government, the oil and gas industry, and education. Since 1995, she served on the governor of Wyoming's cabinet as director of the Department of Revenue. Before that, she served (1989-92) as vice-president of TCF Inc., an oil and gas exploration company based in Casper, Wyoming. Prior to that, she was vice president of Dwrights Energydata Inc., an information company specializing in oil and gas databases. Ms. Burton was also president and founder of Hotline Energy Reports Inc., which later merged with Dwrights Energydata Inc. Under her leadership, Hotline Energy Reports Inc. built a historical database of all wells drilled for oil and gas in the 11 Rocky Mountain States. Ms. Burton began her career in the oil and gas industry as an oil scout in Casper, Wyoming, for Rinehart Oil News of San Antonio, Texas. From 1982 through 1988, Ms. Burton was a member of the Wyoming State House of Representatives. She served as a member of the Wyoming State Advisory Council of Education Grants (1986-88), and also as director of the First Wyoming Bank in Casper from 1981 through 1984. She served as a member of the Independent Petroleum Association of Mountain States Speaker's Bureau from 1977 through 1979. Her career highlights also include positions as a lecturer and teacher of French at the university and high school levels and as a translator and interpreter for the J. F. Pritchard Company in Paris, France, and Kansas City, Kansas. In 1987, she was honored as a "Friend of Education" by the Wyoming School Boards Association. Ms. Burton is a member of the National Order of Women Legislators and the American Association of Translators. She is also a member of the National Alcohol Beverage Control Association and served as its president, representing Wyoming from 2000 to 2001. Born in French Algeria, Ms. Burton immigrated to the United States in 1963 and became an American citizen in 1968. In 1958, she completed the Baccalaureat de l'Enseignement Secondaire (option Philosophie) from the Lycee Fromentin in Algiers, Algeria. She completed the Licence-es-Lettres, English, Diplome d'Enseignement from the Universities of Algiers in Algeria and in Paris, France, in 1962. She holds a master's degree (1974) from the University of Wyoming. She studied at the University of Arkansas and has completed management training by The Presidents Association and Duke University.

## **Thomas Readinger**

Mr. Readinger is the Associate Director of the Offshore Minerals Management Program. He was appointed to this post in January 2002. He

is responsible for managing the MMS Offshore program to (1) help meet the nation's energy needs, (2) protect the ocean environment, and (3) ensure the receipt of fair market value for resources leased. Prior to this new appointment, Mr. Readinger was the Deputy Associate Director of OMM. In that capacity, he also served as the chairman of the OMM Information Management Committee and led the OMM effort to develop the new e-Government Transformation proposal to increase the efficient and effective delivery of services to agency stakeholders. Mr. Readinger has been involved with the OCS program for 28 years. He joined the Federal Government in 1976 as an economist with the Bureau of Land Management where he was responsible for developing bidding systems and bid adequacy procedures to ensure fair market value for OCS resources. From 1987 to 1997, he served as Program Director for the Office of OCS Program Development and Coordination, where he developed and implemented the OCS 5-year Oil and Gas Leasing Program for MMS. In 1995, Mr. Readinger was awarded the Department of the Interior's Meritorious Service Award for career-long contributions to the development of procedures to ensure fair market value for public resources. Since being promoted to the Senior Executive Service in 1987, he has received numerous performance awards for contributions to program management and information technology advancements. Mr. Readinger received a B.S. degree in Business Management from the Indiana University of Pennsylvania in 1972, and an M.A. degree in Economics from American University in 1974. He received his Senior Executive Certification in Public Administration from George Washington University in 1987.

### **Robert P. LaBelle**

Mr. LaBelle, as the Deputy Associate Director for Offshore Minerals Management, serves as Chief Operating Officer for the management of all facets of the Offshore Program, including policy development, policy implementation, and program planning. He is responsible for directing the implementation of Offshore's Strategic Plan and serves as Executive Secretary for the Offshore Steering Committee, as well as Chairman of the Offshore Information Management Committee. Previously, as Chief of the MMS Environmental Division, Mr. LaBelle was responsible for offshore oil and gas industry compliance with all environmental requirements, including water and air quality, endangered species, oil spill risk analysis, and archaeology, in all U.S. Federal waters. He oversaw a large environmental research program and the preparation of Environmental Impact Assessments and other decision documents used for both offshore energy and mining activities. In prior positions, Mr. LaBelle was Chief of the MMS

Technology Assessment and Research Branch, where he led research on engineering and technical aspects of offshore production and development. Previous positions at MMS and USGS include Chief of the Environmental Operations and Analysis Branch, and Chief of the Branch of Environmental Modeling. Prior to joining Interior, Mr. LaBelle worked for Martin Marietta Corp. as an environmental analyst on the siting of electrical power plants and on assessing the effects of nuclear power stations on aquatic species. He is a graduate of the University of Massachusetts (BS), the University of Maryland (MS), and Loyola College (MBA).

### **James M. Cimato**

Mr. Cimato is a senior staff analyst in the Environmental Sciences Branch. He is responsible for developing MMS-wide policies and procedures governing the formulation and implementation of the Environmental Studies Program. As an Oceanographer within the branch, Mr. Cimato coordinates many of the fates and effects studies within MMS and the Coastal Marine Institute program. Mr. Cimato worked in the private sector in oil pollution prevention research before joining the Offshore Program in 1975.

### **Cleve Cowles**

Dr. Cowles is Chief, Environmental Studies Section, Alaska OCS Region. His responsibilities include managing a multi-disciplinary staff to implement the Alaska environmental studies portion of the MMS ESP. Dr. Cowles has been with the Alaska OCS Region since 1979, serving as Chief of the Environmental Studies Unit from 1983-1995, and as Acting Chief of the Social and Economic Studies Unit from 1992-1995.

### **Barry S. Drucker**

Mr. Drucker is a Physical Scientist, Office of International Activities and Marine Minerals. He is responsible for formulating and recommending environmental studies in support of the MMS marine minerals program and for negotiating leases for the use of Federal sand for beach and coastal restoration efforts. He develops statements of work for funded studies and oversees projects as MMS Contracting Officer's Technical Representative, as well as working with various Federal, State, and local entities in the development of negotiated sand leases, environmental stipulations, and NEPA documents.

## **Norman Froomer**

Dr. Froomer has been with MMS in both the New Orleans Gulf of Mexico and the Herndon, Virginia Headquarters offices. He has worked on coordinating and overseeing the development of Geographic Information System databases and applications to support offshore oil and gas permitting, environmental assessment, leasing and regulatory analyses. Previous to MMS, Dr. Froomer was on the Geography faculty at the University of New Orleans.

## **John Goll**

Mr. Goll is the Regional Director of the MMS Alaska Outer Continental Shelf Office, since May 1997. He is responsible for oil and gas and other mineral leasing and oversight of industry activities on the outer continental shelf off Alaska. This ranges from assessments of the oil and gas resources, preparation of environmental analyses and research, coordinating with local, state, tribal, and federal governments, and others interested in the OCS program, and assuring that exploration and development on the federal OCS is done safely and in the best interest of the United States. Prior to becoming Regional Director, Mr. Goll headed the MMS's national environmental office and was responsible for the agency's nationwide environmental program, including NEPA and research. He was closely involved with the National Research Council and GAO committees which reviewed MMS's environmental studies program, and represented MMS on the Council's Ocean Studies Board project on improving the use of science in decision making for coastal issues. He has participated in training missions with Russian environmental regulators in northwest Siberia and on Sakhalin Island. He also worked as a meteorologist with the U.S. Geological Survey and the U.S. Nuclear Regulatory Commission, working on air quality modeling and assessments. Mr. Goll holds a Bachelors Degree in Meteorology and Oceanography and a Masters Degree in air pollution meteorology, both from the University of Michigan.

## **Jack B. Irion**

Dr. Irion is Supervisor of the Social Science Unit in the Office of Leasing and Environment in the Gulf of Mexico Region. He has over 30 years experience in underwater archaeology and has participated in or directed archaeological expeditions in England, Mexico, Belize, Turkey, Italy, Puerto Rico, and throughout the United States. Prior to joining the MMS in 1995, Dr. Irion served as a private consulting marine archaeologist working under contract to both private industry and state and federal agencies. His work has resulted in the discovery and documentation of numerous historic sites and shipwrecks. Since joining the MMS, Dr. Irion has directed the Seafloor Monitoring Team, comprised of a group of diver/scientists with the MMS, in the documentation of several historic shipwrecks on the Outer Continental Shelf. These have included the Civil War gunboat U.S.S. *Hatteras* and the 19<sup>th</sup> century coastal steamers *New York* and *Josephine*, the latter of which was added to the National Register of Historic Places in 2000. He is currently serving as COTR for the World War II “Deep Wrecks Project.”

## **James J. Kendall**

Dr. James J. Kendall coordinates the Environmental Studies Program (ESP) of the U.S. Department of the Interior’s Minerals Management Service (MMS) and serves as Executive Secretary to the OCS Scientific Committee. The MMS ESP is tasked with providing the environmental and socioeconomic information necessary for MMS to make informed decisions concerning offshore oil and gas and marine minerals activities. Prior to joining the MMS Headquarters Office, Dr. Kendall served as the ESP Studies Chief for the MMS Gulf of Mexico OCS Regional Office in New Orleans, Louisiana. He received his bachelor’s degree in biology from Old Dominion University and his Ph.D. in oceanography from Texas A&M University. He has conducted marine research in the Gulf of Mexico, Caribbean, and Red Sea.

## **Chris Oynes**

Mr. Oynes is the Regional Director, Gulf of Mexico/Atlantic OCS Region. He has been the Regional Director since 1993 and thus has overseen the doubling of OCS oil production from the Gulf during that time. Mr. Oynes has previously served as the Deputy Regional Director in the Gulf Region for 7 years and prior to that, he was the Chief of the Leasing Management Division for the MMS in its Headquarters office in Washington, DC.

Mr. Oynes' career with the Department of the Interior began in 1975 as a mineral law specialist with the Bureau of Land Management.

### **Fred M. Piltz**

Dr. Piltz is the Senior Environmental Scientist, Pacific OCS Region. He is responsible for the planning, implementation, and management of the environmental studies for the Pacific OCS Region. Prior to his current position, he worked in applied environmental impact assessment research as both a taxonomic consultant and field scientist in Southern California and in the Straits of Magellan, Chile. His research experience includes laboratory work on the effects of heavy metals on marine organisms, effects of oil spills on intertidal invertebrates, and effects of municipal sewage outfalls on benthic invertebrate communities.

### **Pasquale F. Roscigno**

Dr. Pat Roscigno is the Chief, Environmental Sciences Section, and Gulf of Mexico OCS Region. He is responsible for managing the Gulf of Mexico OCS Regions' ESP. The Gulf studies support OCS management decisions for the Western, Central, and Eastern Planning Areas of the Gulf. Prior to his current position, he served as the Supervisor for the Gulf's Studies Plan Coordination Unit.

### **Paul Stang**

Mr. Stang has been MMS's Alaska OCS Regional Supervisor for Leasing and Environment since July 1997. He oversees the region's leasing, environmental studies, and environmental assessment activities. Previously, he managed branches in MMS Headquarters with responsibilities for lease sales, development of MMS's 5-year leasing program, and long term planning. From 1977-1984, before coming to MMS, Mr. Stang handled a variety of offshore oil and gas and coastal zone management issues for the Department of the Interior's Office of Policy Analysis. Prior to that, he headed projects on coastal zone management, interdisciplinary ocean research, and undersea science and technology development for the National Oceanographic and Atmospheric Agency and deep ocean technology development for the Navy's Deep Submergence Systems Program.

## **Melanie J. Stright**

Dr. Stright is the MMS Federal Preservation Officer. She is responsible for MMS's compliance with the requirements of the National Historic Preservation Act and other Federal historic preservation laws and regulations. Dr. Stright has been with the Offshore Program since 1978, and has worked in both the Gulf of Mexico and Pacific Regions. Her primary focus as an archaeologist has been on developing methods and techniques for locating and evaluating submerged prehistoric archaeological sites on the OCS.

## **Lynnette L. Vesco**

Ms. Vesco is the Acting Regional Supervisor, Office of Environmental Evaluation, Pacific OCS Region. She is responsible for managing all aspects of the Environmental Evaluation Program for the MMS Pacific OCS Region, which includes preparing environmental reviews and analyses for the OCS oil and gas activities, ensuring compliance with environmental conditions of project approval, planning and managing the environmental studies program, and communicating with affected customers. She is also responsible for certain lease management functions such as lease adjudication and company financial responsibility. Lynnette has an M.A. in marine biology, and conducted research in rocky intertidal communities for many years.

## **William Waskes**

Mr. Waskes is an Oceanographer in the Leasing Division, Sand and Gravel Section. He is responsible for supporting the division's Environmental Coordinator in formulating and recommending biological studies in support of negotiating leases for the use of Federal sand for beach and coastal restoration efforts. He oversees consultations with NOAA Fisheries and Fish and Wildlife Service on essential fish habitat and threatened and endangered species. He assists in the development of NEPA documents and environmental stipulations for negotiated sand leases.



# ATTENDEES

## OCS Scientific Committee Members

Dr. Michael Castellini, University of Alaska Fairbanks  
Dr. Robert Diaz, Virginia Institute of Marine Science  
Dr. Duane Gill, Mississippi State University  
Dr. Michael P. Kosro, Oregon State University  
Dr. Edella Schlager, University of Arizona  
Dr. Mary Scranton, State University of New York  
Dr. Lynda Shapiro, University of Oregon  
Dr. Joseph Smith, ExxonMobil Upstream Research  
Dr. Denise Stephenson-Hawk, The Stephenson Group  
Dr. John Trefry, Florida Institute of Technology

## Minerals Management Service

Dr. Tom Ahlfeld, Environmental Sciences Branch  
Ms. Carolyn Beamer, Offshore Minerals Management  
Dr. Mary Boatman, Environmental Sciences Section, Gulf of Mexico OCS Region  
Ms. Maureen Bornholdt, International Activities and Marine Minerals  
Ms. Elizabeth Burkhard, Environmental Sciences Branch  
Ms. Johnnie Burton, Director, MMS  
Dr. Joe Christopher, Gulf of Mexico OCS Region  
Mr. James Cimato, Environmental Sciences Branch  
Ms. Phyllis Clark, Environmental Sciences Branch  
Dr. Rodney Cluck, Environmental Assessment Branch  
Dr. Cleve Cowles, Environmental Studies Section, Alaska OCS Region  
Mr. Barry Drucker, International Activities and Marine Minerals  
Ms. Mary Elaine Dunaway, Environmental Sciences Section, Pacific OCS Region  
Dr. Norman Froomer, Environmental Assessment Branch  
Mr. Tim Holder, Environmental Sciences Section, Alaska OCS Region  
Mr. Warren Horowitz, Environmental Sciences Section, Alaska OCS Region  
Dr. Jack Irion, Gulf of Mexico OCS Region  
Dr. Walter Johnson, Environmental Sciences Branch  
Dr. Jim Kendall, Environmental Sciences Branch  
Mr. Robert LaBelle, Offshore Minerals Management  
Dr. Ron Lai, Environmental Sciences Branch  
Dr. Harry Luton, Environmental Sciences Section, Gulf of Mexico OCS Region  
Dr. Fred Piltz, Environmental Sciences Section, Pacific OCS Region  
Dr. Pat Roscigno, Environmental Sciences Section, Gulf of Mexico OCS Region  
Ms. Celeste Rueffert, Procurement Division  
Dr. Melanie Stright, Environmental Assessment Branch  
Mr. Paul Stang, Leasing and Environment, Alaska OCS Region  
Ms. Barbara Wallace, Environmental Sciences Division  
Mr. Will Waskes, International Activities and Marine Minerals  
Ms. Kate Wedemeyer, Environmental Sciences Section, Alaska OCS Region  
Mr. Dee Williams, Environmental Sciences Section, Alaska OCS Region  
Ms. Lynette Vesco, Environmental Sciences Section, Pacific OCS Region

## **Invitees**

Dr. Daphne Fautin, Professor, Ecology and Evolutionary Biology, University of Kansas

Dr. William W. Schroeder, Member, Deepwater and Professor and Coordinator, Marine Science Program,  
University of Alabama, Dauphin Sea Lab

Mr. Berry (Nick) Tew, Chair, OCS Policy Committee and Chair and State Geologist and Oil and Gas Supervisor,  
Geological Survey of Alabama

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# ACRONYMS

|        |   |
|--------|---|
| CMI    | Coastal Marine Institute                        |
| CoML   | Census of Marine Life                           |
| DGoMB  | Deep Gulf of Mexico Benthic Study Program       |
| DOI    | Department of the Interior                      |
| EIS    | Environmental Impact Statement                  |
| EPA    | Environmental Protection Agency                 |
| ESP    | Environmental Studies Program                   |
| FMAP   | Future of Marine Animal Populations             |
| FY     | Fiscal Year                                     |
| GIS    | Geographic Information System                   |
| HMAP   | History of Marine Animal Populations            |
| IOOS   | Integrated Ocean Observing System               |
| ITM    | Information Transfer Meeting                    |
| JIP    | Joint Industry Projects                         |
| LNG    | Liquefied Natural Gas                           |
| MMS    | Minerals Management Service                     |
| NEPA   | National Environmental Policy Act               |
| NIH    | National Health Institute                       |
| NOAA   | National Oceanic and Atmospheric Administration |
| NOPP   | National Oceanographic Partnership Program      |
| NSF    | National Science Foundation                     |
| OBIS   | Ocean Biogeographic Information System          |
| OCS    | Outer Continental Shelf                         |
| OMB    | Office of Management and Budget                 |
| RFP    | Request for Proposal                            |
| SC     | Scientific Committee                            |
| SEAWiF | Sea-viewing Wide Field-of-view                  |
| SOW    | Statement of Work                               |
| US     | United States                                   |

## **Meeting Summary**

### **Subcommittee Reports and Discussion**

#### **Deepwater**

Dr. William W. Schroeder informed the SC that, in January 2005, the Deepwater Subcommittee met to review the progress of ongoing and planned MMS studies in the deep Gulf of Mexico (GOM), and to discuss potential future directions for deepwater studies. He reported that MMS studies have provided very exceptional understanding of separate components of the deep Gulf ecosystem including geology, physical and chemical oceanography, and a broad range of living communities. All of these components are ecologically interdependent. The Deepwater Subcommittee recommended that the emphasis of future MMS deepwater studies begin to shift toward a more interdisciplinary ecosystem-level approach that integrates the structure and function of different habitats and communities with physical oceanographic processes. An ecosystem-level understanding of the GOM is ultimately necessary for effective resource management and environmental stewardship.

Toward this objective, the subcommittee recommended that the SC endorse the following actions for the MMS:

- ▶ Support the proposed Chemo III Study to extend the investigation of chemosynthetic communities in water deeper than 1000 m.
- ▶ Facilitate and expedite the synthesis phase of the Gulfwide of soft sediment communities.
- ▶ Coordinate future studies with other funding agencies that sponsor research in the Gulf.
- ▶ Pursue agreements with the Mexican government, universities, and the Mexican Academy of Sciences to establish a framework of international cooperation for future studies in the southern Gulf.

#### **Arctic**

Dr. Michael Castellini reported that the subcommittee met in February 2005 at the MMS facility in Anchorage, Alaska, with various stakeholders, interested public members, and scientific groups doing research in the region. Also invited to attend were specialists in several fields of potential upcoming MMS research areas. Updates of major activities taking place in Alaska including the status of lease sales and development reviews, current science activities, and priority arctic science questions for consideration were discussed and presented to the subcommittee. Several members of the subcommittee also attended the Information Transfer Meeting (ITM) held by the Alaska OCS Region in Anchorage in March.

#### **MMS/EPA/DOI Hypoxia Meeting**

Drs. Robert Diaz and Mary Scranton reported on the MMS/EPA/DOI Hypoxia meeting. An "Experts Meeting" on the subject was held to provide MMS and the Environmental Protection Agency (EPA) with the latest information on hypoxia and produced water volume and composition. Invitees included members of EPA, MMS, the Department of Energy, oil industry representatives, invited researchers, and SC members. The SC members were invited since discussions were expected that could lead to recommendations for research and external peer review, and review by the members would enhance the process. This meeting was held due to last year's EPA concerns about possible future increases in produced water discharges and unreasonable degradation of the marine environment in the context of issuing a National Pollutant Discharge Elimination System General Permit in the GOM. The contribution of produced water to hypoxia, while expected to be very small, has not been directly investigated. As facilitators and observers, SC participation provided external peer review and critique of research designs under discussion. The SC members also provided peer review of a related report on hypoxia and the contributions from produced water, which was prepared by Dr. Nancy Rabalais.

## **MMS Archaeological Studies Fulfilling MMS Information Needs**

Drs. Melanie Stright and Jack Irion reported that the National Historic Preservation Act of 1966, as amended, is Federal legislation developed to ensure that our Nation's historical and archaeological properties are not lost through neglect or inadvertently destroyed by activities permitted or funded by Federal agencies. Specifically, the MMS, as a Federal bureau, is required to ensure that activities it funds and activities it permits do not damage significant archaeological sites on the Federal OCS. To fulfill this mandate, the MMS has conducted archaeological baseline studies of the Atlantic, Pacific, and GOM continental shelves to define those areas where both historic shipwrecks and prehistoric archaeological sites are most likely to exist. The MMS has also conducted additional archaeological studies in the GOM region to further refine the methods and technology employed to identify and evaluate archaeological resources on the OCS.

## **Report from the last OCS Policy Committee Meeting**

Officers of the OCS SC and the OCS Policy Committee routinely attend each other's meetings and give brief presentations on the various OCS issues with which they are involved. Mr. Berry (Nick) Tew, Chair and State Geologist and Oil and Gas Supervisor, Geological Survey of Alabama, presented the key items discussed at the OCS Policy Committee's November 2004 meeting.

## **MMS Director's Presentation and Discussion with the Committee**

Ms. Johnnie Burton, MMS Director, presented to the SC the status of MMS oversight and associated issues. As advisor to the MMS Director, the SC appreciates the opportunity to have a dialogue with the Director on ongoing and future issues, policies, and activities of the Bureau. This exchange not only keeps the SC apprised of MMS's direction but also offers an opportunity for the SC to provide direct advice and guidance on matters as they relate to the Environmental Studies Program (ESP).

Below is Ms. Burton's verbatim presentation to the SC:

Good morning. It is good to be back together, and I am glad we can meet at such a beautiful time of year. Spring is a rejuvenating time of year. It is when we can climb out from under all our coats and hats and scarves and feel the sun and the breeze and smell the sweet air. It is also an excellent time for us to stop and take stock of where we are and where we are going. This can apply to us personally, but for the next several days, it particularly applies to MMS and you, its Scientific Committee. For the next several days, we need to take a look at what the future holds for MMS and what we need to be doing to meet its research and information needs.

Today I would like to highlight for you the Offshore Minerals Management Program, its current status of oversight, and the issues we at MMS are addressing today and preparing for in the future.

This is insight that we believe will serve you when you review and comment on what we are "tentatively" planning under the ESP. Just to set the stage, let's review a few basics:

- ▶ The MMS oversees 1.76 billion acres of OCS, managing offshore energy and minerals.
- ▶ The MMS regulatory program is unique in that it is involved from the day of leasing to the final day of decommissioning.
- ▶ The MMS carries out its mission through a variety of efforts such as estimating national OCS energy resources, assessing environmental impacts, research to assess and manage impacts of activities and to monitor for changes in the quality and productivity of the marine environment, leasing OCS acreage, analyzing and permitting industry's proposed actions, inspecting operations, enforcing statutory and regulatory requirements, identifying/making available OCS sand deposits for beach nourishment, and providing scientific and technical assistance to other nations.

We do all of this through a diverse and extensive program which requires diverse and extensive information. The OCS Lands Act, as amended, requires the Secretary of the Interior to prepare and maintain an oil and gas leasing program that indicates the size, timing, and location of leasing activity determined to best meet national energy needs for the 5-year period following its approval. However, over time, particularly since 1980, access to offshore resources has been increasingly restricted.

The present MMS 5-year leasing plan will end June 2007, so we have initiated the 2-year process to develop the 2007-2012 leasing program. An early step in the preparation process is to collect information on management issues and concerns, on priority ranking of the areas by industry, and on national energy needs, especially natural gas resources.

Now might be a good time to mention the outcomes of three recent lease sales under the present 2002-2007 plan. On March 16, Sale 197, eastern gulf, was held and reports 12 bids for almost \$7 million, simultaneously. On March 16, we held Sale 194, central gulf, with 395 bids and a high bid total of \$354 million. Then on March 31, we conducted Sale 195, Beaufort Sea. The OCS is partitioned into 23 planning areas. Areas not under Presidential exclusion or moratoria are in the GOM and Alaska. And except for the Aleutian Islands, Alaska is open for development but is still considered a frontier area. A banner sale for just under \$50 million (\$46,735,081.00) was held, and many of the majors participated.

Now, looking to the future, we face an ever growing plethora of challenges. I won't be able to cover them all, but I will touch on many of them this morning, and we will have time for some questions and discussions.

**Gulf of Mexico OCS Region.** The GOM is presently the major production province, and we foresee a near-future decline in natural gas production followed by an increase. The increase reflects the importance of both deepwater and deep drilling on the traditional shelf.

Oil and Natural Gas Productions Numbers per day:

GOM – 1.6 million barrels of oil and 12.5 billion cubic feet of gas  
Pacific – 82,000 barrels of oil and 160 million cubic feet of gas  
Alaska – 63,000 barrels of oil, with 11,000 being the Federal share

The projection of the GOM oil production is dramatically different, with a strong surge in the next few years as large deepwater fields come on line. The production from deepwater GOM has been on a decade-long increase and shows little sign of a drop-off. There have been more than 150 deepwater discoveries in the GOM, with close to 100 scheduled to be on line by the end of 2005.

So what supports the projected increase of resources? Well, industry is returning to the shallow waters of the shelf, but are drilling deeper with proposed depths of greater than 15,000 feet total vertical depth to reach previously unknown deep deposits of hydrocarbon resources. We are supporting such efforts through royalty relief and lease extensions.

Another area is the ultra-deep water. Industry has and is using technology that allows ultra-deep water drilling, as deep as 1.3 miles. In 2004, we saw 12 of these new deepwater discoveries. It is anticipated that these new plays with their large geographic extent have an estimated resource amount of 1 billion barrels of oil equivalent. And if we are in need of a reminder of what man is capable of and the responsibilities that befall the MMS, we have Thunder Horse.

In March of this year, the world's largest production facility – Thunder Horse – was installed in the GOM. Discovered in 1999, Thunder Horse field is the largest field ever uncovered in the deepwater GOM with 1 billion barrels of estimated recoverable reserves. BP's Thunder Horse development is designed to use the largest production drilling quarters semi-submersible platform in the world. MMS has taken many extra steps to ensure it operates safely; however, because of the uniqueness of the platform due to its size, location and capabilities, it will remain a topic of interest and discussion for some time to come.

Another energy resource that falls under our purview is methane hydrates. As you may know, the U.S. Geological Survey conducted a worldwide assessment of hydrate deposits. At the completion of the assessment, it was concluded that there are large deposits located around the world. Hydrates have become a resource of interest because of its availability and the large return of potential energy, and it is a clean fuel source that can supplement gas and oil discoveries.



However, hydrates are known to be unstable and have caused difficulties while drilling for oil and gas. A Joint Industry Project, of which MMS is a participant, will conduct drilling exercises this spring to better evaluate and understand how this substance reacts under drilling conditions.

MMS is providing consultation and will be doing an assessment of hydrate deposits on the OCS to determine their availability, and later the amounts, which may be recoverable.

New technologies are now available, which use both P-waves and S-waves called four-component ocean bottom cable seismic or 4C-OBC, and may be better at locating hydrate deposits. Other technologies use high resolution deep-tow data.

Another issue, or should I say nuisance, was Hurricane Ivan. In September 2004, Hurricane Ivan, a full category-4 storm, moved through the U.S. GOM with extreme winds and large waves exceeding or matching the 100-year design criteria of the facilities in its path. Of the 4,000 offshore oil and gas facilities and 33,000 miles of pipelines in Federal waters of the GOM, approximately 150 facilities and 10,000 miles of pipelines were in the direct path of Hurricane Ivan. The oil and gas industry submitted numerous damage reports to MMS. The range of damaged facilities included mobile drilling rigs, offshore platforms, producing wells, topside systems including wellheads and production and processing equipment, risers, and pipeline systems that transport oil and gas ashore from offshore facilities.

**Alaska OCS Region.** A project in our sights is Liberty. As you may recall, the operator, BP, stopped all action for this development in 2002. Recently, however, MMS, the Army Corps of Engineers, and BP Exploration Alaska, Inc., signed a Memorandum of Understanding to delineate responsibilities and scheduled National Environmental Policy Act (NEPA) and permit reviews.

BP will submit a new Development and Production Plan by June 2006, and cooperating agencies will be working to flush out issues and concerns and to delineate the best development alternative for the Liberty Project during the next 15 months.

All in all, Alaska is seeing a new wave of interested oil and gas companies. Beaufort Sea sales have been the best we have seen since 1988, and companies are expressing strong interest in the Chukchi and North Aleutian Basin.

And an update on Northstar, the joint Federal/State of Alaska unit located in the Beaufort Sea offshore Alaska's North Slope: the unit includes three Federal and five State leases, and the reservoir is managed under a joint Federal/State unit agreement. Here, and in all MMS endeavors, we are employing the Secretary's 4 C's (conservation through communication, consultation and coordination) whenever possible.

The Northstar Unit is bringing in \$30 million per year and still has new wells being drilled requiring more effort from MMS towards inspections and monitoring.

**Pacific OCS Region.** In the Pacific, 36 of the 79 OCS leases offshore California are undeveloped. Two suits pertaining to these leases have been filed: *California v. Norton* and *Amber Resources et .al vs .United States*.

In *California vs. Norton*, MMS is drafting consistency determinations under the Coastal Zone Management Act to be filed with the California Coastal Commission in April 2005.

In *Amber*, lessees of the undeveloped Federal leases sued the U. S. Government for breach of contract, stating that they had not been permitted to develop their leases. And on March 9, 2005, 10 environmental interest groups filed a lawsuit for the Northern District of California. The lawsuit alleges that MMS did not conduct a full and adequate environmental analysis pursuant to NEPA for lease suspensions of undeveloped leases offshore California.

Other issues the Pacific Region will be addressing are new drillings in Federal waters using extended reach well technology (drilling from platforms in Federal waters into State waters) and multiple-use management for activities we have briefly addressed this morning or are about to.

Just like the workforce, the facilities they operate are aging. As you can see from the graph, we have a large number of platforms that are approaching the end of their useful life. We are working with industry to address the issues associated with an aging infrastructure, an issue noted last year in the report by the U.S. Commission on Ocean Policy. We need to conduct research and re-evaluate our regulations and industry standards.

Another issue that MMS is dealing with which involves an overlap of offshore jurisdiction is the increased pressure for offshore-based sites for imports of natural gas from overseas.

In the last few years, there have been several applications submitted to the Maritime Administration and the U.S. Coast Guard for the creation of offshore-based Liquefied Natural Gas (LNG) import facilities in both the Pacific and Gulf Regions.

There are currently three approved “deepwater” ports and four proposed in the GOM region and two in the Pacific. The Gulf Gateway port, which operates using a moored buoy as an offloading terminus, received its first delivery in March of this year. It is the first deepwater LNG port in the world.

The MMS has collaborated with the U.S. Coast Guard throughout the environmental evaluation process and is the only other Federal agency to be officially designated as a Cooperating Agency in the approval process.

In the year 2000, Congress unanimously approved passage of the Oceans Act. This was legislation that was to establish an independent U.S. Commission on Ocean Policy charged with reviewing the state of marine-related issues and the effectiveness of Federal ocean-related laws and programs. The Commission conducted a review of Federal programs related to ocean and coastal activities during which agencies provided testimony on areas of purview, oversight, and responsibilities. For DOI, this process resulted in a greater appreciation of MMS’s ocean role.

We have many ongoing and new challenges to meet and new information needs to be addressed, and look to the SC for informed input and recommendations.

### **Some Highlights of the MMS Environmental Studies Program and Our Goal for the Next Day-and-Half**

The MMS Headquarters ESP presentation given by Mr. James Cimato provided an overview of research activities within the ESP, described ESP management processes, and highlighted research on mercury in drilling muds with an invited commentary by SC member Dr. John Trefry. In addition, the presentation laid the groundwork for the prospective program review which would occur during the remainder of the meeting.

### **Environmental Data Forum: Think Globally, Act Locally! Managing MMS Data, Today and in the Future.**

Dr. Norman Froomer stated that during the past 30 or so years, MMS has invested over \$700 million in its ESP. These efforts have produced a significant collection of information about the marine and coastal environments of the United States. Until recently, information from these studies was available only through individual paper documents, assorted CDs, and in-data warehouses, such as the National Ocean Data Center. In recent years, MMS has taken steps to make ESP information accessible digitally and through the Internet. These steps include making full-text versions of final reports available over the Internet, developing a spatial interface to studies information, and incorporating ESP data into the MMS corporate database. These efforts will make ESP data more accessible and useful to its intended audience of users, including researchers, environmental analysts, and decisionmakers.

### **Environmental Data Forum: Think Globally, Act Locally! Managing Environmental Data at a Global Level**

Dr. Daphne Fautin explained that the Census of Marine Life (CoML) is an international project with four components: field projects designed to learn what lives in the ocean, the History of Marine Animal Populations (HMAP) studies, what did live in the ocean, and the Future of Marine Animal Populations (FMAP) which is designed to project what will live in the oceans. The Ocean Biogeographic Information System (OBIS) is a distributed system serving data not only from CoML field projects, but also from individuals, museums, and agencies. HMAP and FMAP both use data from OBIS and contribute to it.

Dr. Fautin chairs the U.S. National Committee for CoML, is a member of the International Committee of OBIS, and was one of the original contributors of data ("Hexacorals of the World") to OBIS.

In the afternoon, the Regions met in separately to discuss national and regional studies plans.

## **April 28, 2005**

The SC met with the Regions and Headquarters in Discipline Breakout Groups which were devoted to discipline-based breakout sessions (ecology/biology, physical oceanography, and socioeconomics). In each breakout session, one SC member was designated as a discussion leader, and an MMS staff member was assigned to take notes.

## **April 29, 2005**

### **Discipline Breakout Groups Reports**

Reports received from the previous day's breakout sessions were presented and are summarized as follows:

#### **Alaska OCS Region**

##### **Physical Oceanography**

- ▶ Design a study for Boundary Oceanography in the Beaufort and Chukchi Seas. This follows the recommendation of the Workshop on Physical Oceanography in the Beaufort Sea and is needed to explore solving problems of open boundary conditions for modeling; an interagency partnering is explicitly planned.
- ▶ Mesoscale Meteorology. This model study was recommended by the Physical Oceanography Workshop and seeks understanding of sea breeze and topographic effects. This would be a phased approach with data search as the first step which is seen as valuable even if the rest can't be funded. It was suggested that partners be sought for funding model construction and testing.
- ▶ Mapping Overflood with Remote Sensing. The Group endorsed the use of remote sensing backed with aerial surveys to delineate over flooding extent due to impacts on scour, sediments, biology, and buoyant fluxes. However, it was uncertain as the rank importance for fault tree analysis. The Group also considers river staging data for robust supplement to gauging (from 2004 report).
- ▶ High Resolution Bathymetry. The Group feels this is important for ocean circulation, ice dynamics, and logistics. It again endorsed the phased approach with cost sharing sought for the expensive field work. The Group also strongly endorses data rescue efforts from existing recent data sets not yet available to MMS; this should be done even if partners not available.

**Social Science.** No new starts for Alaska; two proposed for fiscal year 2007.

- ▶ Socioeconomic Book (Phase II). This study supports Alaska initiatives on education and outreach, and carrying forward key findings from the Technical Dialogue Study.
- ▶ MMS should consider using cultural communication specialists, and it should not mirror Phase I book.
- ▶ Exploring Potential Visual Resource Effects from Oil Development in Cook Inlet. This study needs to include residents, tourists, and visitors in the sampling strategy as well as visualization software in methodology.
- ▶ In regards to ongoing Alaska Social Science studies, the Group recommended that a pool of reviewers contact journal editors for responsible peer reviewers.
- ▶ Response Rate of North Slope Borough which would compare response rate for high school students in general.
- ▶ Environmental Education which would acknowledge efforts.

**Biological Studies.** Alaska issues described were Beaufort Marine Fish Monitoring; SEAWiFing the river plumes; arctic cisco genetics and otoliths; and invasive species.

- ▶ Beaufort Sea Marine Fish Monitoring should be a split design phase from implementation.
- ▶ SEAWiFs should be an increased priority-wise for assessing primary production in this region.
- ▶ Arctic cisco otoliths and genetics. Identifiable genetic and otolith signatures should be verified.
- ▶ Invasive Species. Globally, this is an important issue, but a low priority in this extreme environment.

## **Gulf of Mexico OCS Region**

**Physical Oceanography.** Issues cited: were Hydrate Studies through Literature Search/Synthesis which would include sites, associated communities, and likely impacts, and a sensible level of pre-use activity to identify the scope of potential environmental issues.

- ▶ Prehistoric Shell Middens. The group stated that this would be an important and rare opportunity to obtain field verification of archaeological model for prehistoric site location likelihood, and the Group endorses mission-relatedness of the study.
- ▶ Integrated Ocean Observing System (IOOS). The group concluded that MMS has been successful in ensuring that its program needs are addressed by the National Oceanographic Partnership Program and feels that MMS should work with the emerging IOOS structure, as proposed, so that its measurement, modeling, and data format needs are considered in IOOS planning. Plans for a workshop are good; invitations also should be extended to representatives of all regional associations.

The Group also encouraged an open process for proposing pilot programs to be considered. Continued studies were also examined: Ongoing program of deepwater measurement sampling to fill in critical gaps in knowledge of deep-circulation processes is beneficial and the Group sees high value in continued international collaboration with Mexican colleagues and institutions, both through cooperative fieldwork and collaborative workshops and strategic planning which are underway.

## **Sand and Gravel**

- ▶ The Group believes that evaluations of environmental impacts of sand borrow projects is central to MMS stewardship in the OCS, and it strongly endorses a continued sand and gravel program if sand borrow is to continue in the OCS.
- ▶ It is also pleased to see protocols for studies of environmental impacts developed, and encourages the widest possible peer review and promulgation.
- ▶ The Group considers the proposed ITM a good opportunity to tell colleagues about sand and gravel work and leverage efforts through collaboration; it recommends elevating the ranking of the ITM to priority.
- ▶ The program to model for critical threshold is endorsed, as are site specific studies; also, a longitudinal study, as called for in the protocols, is seen as very important, particularly during these early days of the program.
- ▶ Out-year studies called for in the protocols should be done, prioritizing by site as needed, with sites of multiple extractions seen as especially important.

## **Air Quality**

- ▶ The Group agrees with the value of bringing the meteorological and air quality data, 1990-present, into a commonly used database format, with Quality Control.
- ▶ The proposed plan to provide data in a useful format to States and EPA will strengthen valuable collaborative links.
- ▶ Statistical analyses could be valuable, but more specifics are needed to evaluate them.
- ▶ Proposed FY'07 Air Quality Issues:
  - 1) The Spill of Opportunity (Synthetic-based Fluid). The Group is concerned about potential difficulty in finding the spill remains in contamination by wetted cutting, and in determining effects during early spill history. However, the Group feels that a lab-based Synthetic Based Drilling Fluid Droplet Size And Fall Velocity Study proposed as an add-on would be valuable in early time-history, and that readiness costs suggest the response should not be in "hours to days", but in "days to weeks."
  - 2) Ultra-Deepwater Circulation Processes. The Group recognizes an opportunity to incorporate new ultra- deepwater data from MMS and Mexico into testing of circulation process models. The Deepwater Synthesis study concluded that such models were needed to understand the energetic deepwater events, many of them being of small scale. The goal of increasing model skill in process studies should be explicit.

## **Socio-Economics**

- ▶ State and Local Fiscal Effects of the Offshore Petroleum Industry. The Group feels that this is a valuable study and that methods should (1) characterize each State's revenue and allocation mechanisms relating to oil, (2) examine historical context noting critical points of change, (3) emphasize counties, municipalities and special districts that are affected by oil, and (4) draw on fiscal impacts literature from political science, economics, and public policy.

- ▶ An Analysis of the Oil Services Contract Industry in the Gulf of Mexico Region. The Group agreed that this is a challenging topic for data collection and that it should be approached by observation expert opinion. The study should be conducted in two phases - the first being to identify and disaggregate components of contract industry sectors, and the second phase (if Phase I is successful) being a detailed description of key sectors. The Statement of Work should include lessons learned from the Labor Needs Study and the Coastal Marine Institute's (CMI) Collaborative Study have a define timeframe, and possibly include discussion of future trends.
- ▶ Gulf Coast Communities and the Fabrication and Ship Building Industry. This is a useful study and the Group identifies some methodological suggestions: (1) review available oral histories from the History project, (2) examine Morgan City first because of available data, and (3) include Port Aransas, Ingleside, and Brownsville, Texas.
- ▶ Prehistoric Archaeology Shell Midden Study. The Group is supportive of this study and encourages cooperation with other agencies and institutions.
- ▶ Socioeconomic Effects of the Offshore Petroleum Industry on Urban Communities. The Group agrees that this is a great study concept to examine literature in sociology, history, specific industries in big cities, and urban areas.
- ▶ Environmental Risk Associated with Support Vessel Usage by the OCS Oil and Gas Industry. This study should be expanded to include transportation sector and results could be useful for management reviews.

### **Biological**

There are no new biological studies proposed for FY 2006.

- ▶ Gulf issues identified were: ultra-deepwater reef formation, including coral; debris fields from rigs; decommissioning; sperm whale prey interactions; synthetic-based drilling fluids; and the Mississippi-Alabama shelf revisited.
- ▶ The Group recommendations included the following issues: the use of ship wrecks as analogs for drill rigs (sedimentation, contaminants); debris fields – mostly public relations; decommissioning – remind them to share with California; sperm whales and prey – endless loop of continuous questions; support lab studies and field studies on synthetic based muds; MA shelf – monitoring effort in GOM is good idea. They urge caution in making focus of study being a comparison with 1970's data.

General recommendations made by the Group include: an explanation of ranking process is needed at the outset of presentations; get to objectives and methods more quickly; MMS needs to investigate animal care issues; continued communication within regions and with external agencies; and a need for collected data to go into a standardized database (e.g. OCS Connect).

Regarding Sand and Gravel projects, recommendations were made to: review the MMS mandate to ensure that appropriate studies are conducted; clarify cooperating agency roles and responsibilities; initiate long-term monitoring needs; and raise ITM to a priority 1 or 2.

### **Pacific OCS Region**

**Physical Oceanography.** None.

**Social and Economics.** None.

### **Biological**

The Group recognizes that the region is small in that there are only a few people.

Main focus of studies is on decommissioning; alternate uses of platforms (mariculture, wave energy); interagency cooperation (MARINe); and monitoring seeps.

They provided the following recommendations:

- ▶ change rankings,
- ▶ support decommissioning ITM,
- ▶ because of interagency support, support the fish transplantation study; natural seeps (cooperation with State),

- ▶ relational database on seabirds and mammals,
- ▶ pipeline fish assemblages,
- ▶ reconsider phasing out CMI, but maintain it at a minimal level in case of renewed need,
- ▶ consider using compound specific isotope ratios on selected biomarkers,
- ▶ animal care issues in fish transplantation study, and
- ▶ share information with Gulf on decommissioning issues.

### **Committee Business**

Items to the Director were discussed as well as other business, including the following emerging issues: continue to support the Sand and Gravel Program; review data policy; animal care policy needs to be initiated; emphasize objectives; continue to work with other agencies; high-level communication needs to continue; ESP budget; and the Energy Bill and how the MMS will be impacted.

The SC members will be polled to determine the best dates (Spring 2006) to hold the next meeting which may be held in California, New England, or the Gulf of Mexico.

[Federal Register: April 6, 2005 (Volume 70, Number 65)]

[Notices]

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DEPARTMENT OF THE INTERIOR

**Minerals Management Service**

Outer Continental Shelf (OCS) Scientific Committee (SC); Announcement of  
Plenary Session

AGENCY: **Minerals Management Service** (MMS), Interior.

ACTION: Notice of meeting.

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SUMMARY: The OCS Scientific Committee will meet at the Embassy Suites Dulles-  
North in Dulles (Sterling), Virginia.

DATES: Wednesday, April 27, 2005, from 8 a.m. to 5:30 p.m.; Thursday,  
April 28, 2005, from 8 a.m. to 5:30 p.m.; and Friday, April 29, 2005,  
8:30 a.m. to 12:30 p.m.

ADDRESSES: Embassy Suites Dulles-North/Loudoun, 44610 Waxpool Road, Dulles,  
Virginia 20147, telephone (703) 723-5300.

FOR FURTHER INFORMATION CONTACT: A copy of the agenda may be requested from  
MMS by calling Ms. Carolyn Beamer at (703) 787-1211. Other inquiries  
concerning the OCS SC meeting should be addressed to Dr. James Kendall,  
Executive Secretary to the OCS SC, **Minerals Management Service**, 381 Elden  
Street, Mail Stop 4043, Herndon, Virginia 20170-4817 or by calling (703)  
787-1656.

SUPPLEMENTARY INFORMATION: The OCS SC will provide advice on the feasibility,  
appropriateness, and scientific value of the OCS Environmental Studies  
Program to the Secretary of the Interior through the Director of the MMS.  
The SC will review the relevance of the research and data being produced to  
meet MMS scientific information needs for decision making and may recommend  
changes in scope, direction, and emphasis.

The Committee will meet in plenary session on Wednesday, April 27.  
Individual Committee members will report on the January meetings of the Gulf  
of Mexico OCS Region's Information Transfer Meeting and affiliated OCS SC's  
Deepwater Subcommittee, the January and March meetings of the OCS SC Arctic  
Subcommittee meeting, and the OCS SC's observations made at the MMS/  
Environmental Protection Agency Hypoxia meeting conducted this past summer.  
Also on April 27, presentations will be made to the OCS SC outlining how  
archeology studies are useful to MMS information needs and how other large  
environmental programs handle environmental data and what options are being  
used and/or considered for serving MMS's database needs. The MMS Director  
will also address the Committee.

On Thursday, April 28, the Committee will meet in discipline breakout sessions (i.e., biology/ecology, physical sciences, and social sciences) to review the specific research plans of the MMS regional offices for Fiscal Years 2006 and 2007.

On Friday, April 29, the Committee will meet in plenary session for reports of the individual discipline breakout sessions of the previous day and to continue with Committee business.

The meetings are open to the public. Approximately 30 visitors can be accommodated on a first-come-first-served basis at the plenary session.

Authority: Federal Advisory Committee Act, Public Law 92-463, 5 U.S.C., Appendix I, and the Office of **Management** and Budget's Circular A-63, Revised.

Dated: March 31, 2005.  
Thomas A. Readinger,  
Associate Director for Offshore **Minerals Management**.  
[FR Doc. 05-6819 Filed 4-5-05; 8:45 am]  
BILLING CODE 4310-MR-P



# Outer Continental Shelf Scientific Committee Charter

## **Official Designation**

Outer Continental Shelf (OCS) Scientific Committee.

## **Scope and Objectives**

The OCS Scientific Committee will provide advice on the feasibility, appropriateness, and scientific value of the Outer Continental Shelf Environmental Studies Program to the Secretary of the Interior through the Director of the Minerals Management Service (MMS). The Committee will review the relevance of the research and data being produced to meet MMS scientific information needs for decision making and may recommend changes in scope, direction, and emphasis.

## **Duration and Termination**

The Committee will terminate 2 years from the date this charter is filed, unless renewed prior to that date to comply with section 14(a) (2) of the Federal Advisory Committee Act. The Committee charter may be renewed by the Secretary as long as the Offshore Minerals Management Program of the Minerals Management Service requires advice and expertise of the Committee.

## **Official to Whom the Committee Reports**

The Director, Minerals Management Service.

## **Bureau Responsible for Providing Necessary Support**

The Department of the Interior, Minerals Management Service.

## **Estimated Operating Costs**

Annual activities of the Committee will require approximately \$44,000 and 1-year of Federal employee support.

## **Description of Duties**

The duties of the Committee are solely advisory and are stated in Scope and Objectives above.

## **Estimated Number and Frequency of Meetings**

The Committee will meet at the request of the Director, but not less than once a year. Subcommittees will meet as necessary to accomplish their assignments, subject to approval by the Committee Chair.

## **Travel Expenses**

Each voting non-Federal member will be reimbursed for travel expenses incurred when attending Committee and subcommittee meetings in accordance with Federal travel regulations as implemented by the Department of the Interior.

## **Membership**

The Secretary will appoint non-Federal members to the Committee to serve a 2-year term. Non-Federal members may not serve more than three consecutive terms. There will be no alternates. The Secretary may revoke an appointment to the Committee if a member fails to attend two consecutive meetings. Previous service on the Minerals Management Advisory Board OCS Scientific Committee will count as service on this Committee for purposes of determining eligibility. However, to facilitate the transition from the Minerals Management Advisory Board OCS Scientific Committee, any member who has served three consecutive terms or more on that Committee is eligible to be nominated for an additional 2-year term on the OCS Scientific Committee. After a 2-year break in service, that member will again be eligible for appointment.

Appointments will be made to balance the Committee in terms of technical skills and geographic representation. Members will be appointed to the Committee based on the following criteria:

- Scientific competence,
- Reputation within their field of expertise, and
- Ability to represent important elements of the MMS's research and science information efforts.

### ***Federal Members***

The Director, Minerals Management Service, or designee, is a nonvoting, ex officio member of the Committee.

### **Subcommittees**

The Committee may establish subcommittees to study issues in-depth and to develop recommendations for consideration by the full Committee. Membership will be balanced in terms of perspective, subcommittee function, and expertise required by the subcommittee. Subcommittees may include people who are not members of the Committee. The Committee Chair will appoint subcommittee members. Subcommittee members will be reimbursed for travel expenses incurred when attending subcommittee or committee meetings to present subcommittee deliberations to the full Committee. Subcommittee members will be reimbursed in accordance with Federal travel regulations as implemented by the Department of the Interior.

### **Officers**

The Committee will elect from its membership a Chair, Vice Chair, and Parliamentarian to serve a 2-year term. The Associate Director for the Offshore Minerals Management Program, or designee, will serve as the Designated Federal Officer. The MMS Chief Scientist is the Executive Secretary and MMS Science Liaison to the Committee and will attend all meetings.

### **Meeting Minutes**

Detailed minutes of each Committee meeting, recommendations made, and copies of all studies and reports received, issued, or approved in conjunction with the activities of the Committee will be available for public review at the following location:

Minerals Management Service  
381 Elden Street, Mail Stop 4001  
Herndon, Virginia 20170-4817

### **Ethics Responsibilities of Members**

The OCS Scientific Committee members are designated special government employees and will comply with applicable ethics rules and regulations. The Department of the Interior will provide materials to members who are appointed as special government employees, which will explain their ethical obligations. Consistent with the ethics requirements, members will endeavor to avoid any actions that would cause the public to question the integrity of the Committee's operations, activities, or advice. The provisions of this paragraph do not affect any other statutory or regulatory ethical obligations to which a member may be subject.

### **Internet Homepage**

Information on the Committee may be found on MMS's Internet site, [www.mms.gov](http://www.mms.gov).

### **Authority**

We have determined that the Committee is in the public interest in connection with duties of the Department of the Interior. We have authority for these duties under the OCS Lands Act, as amended (43 U.S.C. 1331 et. seq.).

The Committee activities will be governed by the Federal Advisory Committee Act (5 U.S.C. Appendix 2), as amended, and implementing regulations.

/s/ Gale A. Norton  
Secretary of the Interior

FEB 3 2004  
Date Signed

FEB 19 2004  
Date Filed

## MEMORANDUM

TO: MMS Outer Continental Shelf (OCS) Scientific Committee (SC)

FROM: Deepwater Subcommittee (William Schroeder, Michael Rex, James Coleman, Joseph Smith, Michael Kosro)

DATE: February 25, 2005

SUBJECT: Future Directions for MMS Studies in the Deep Gulf of Mexico: An Ecosystem-Level Approach

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Two members of the OCSSC Deepwater Subcommittee (Michael Rex and William Schroeder) attended the MMS Information Transfer Meeting held in New Orleans, January 10-14, 2005, in order to review the progress of ongoing Gulf studies, and to meet with James Kendall, Robert Diaz and Gregory Boland to discuss potential future directions for MMS deepwater studies. Subsequently, the entire Deepwater Subcommittee has reviewed and approved the following recommendations.

During the last two decades, MMS environmental studies in the Gulf of Mexico have provided a level of ecological understanding that is unprecedented for any deep-sea basin. The Gulf is revealed to be an extraordinarily complex ecosystem composed of many distinctive natural communities that occupy a wide range of habitats including soft sediments, hydrocarbon seeps, brine pools, methane hydrates, carbonate outcrops, oxygen minimum zones, organic carbon depocenters, ironstone pavements, and asphalt volcanoes. Studies, so far, have focused on specific aspects of the environment: soft sediment communities, *Lophelia* colonies, chemosynthetic communities, geology, and physical and chemical oceanography. All of these are integral components of the structure and function of the deep Gulf ecosystem.

However, the myriad habitats of the Gulf do not exist as ecologically independent entities. Chemosynthetic communities export production to surrounding soft sediment communities and drive successional change by transforming substrate type to provide new habitat for other communities. Predators depend for their persistence on foraging in both chemosynthetic and soft sediment communities. Seep habitats represent a spatial mosaic that is maintained by a balance between local extinction caused by geological change or biotic interactions and larval migration from the species pool comprising other seep communities. Patterns of larval dispersal depend on ocean currents. The strong bathymetric and horizontal gradients of animal abundance and biodiversity found in Gulf soft sediment communities depend on the rates of nutrient input from surface production and sources of *in situ* chemosynthetic production, larval dispersal, topography, sediment type and historical events. Gauging the potential effects of petroleum exploration in the Gulf and effective stewardship of the Gulf environment ultimately require a synthesis of the interactions between biotic and abiotic features of the environment on different scales of time and space. Recent, ongoing and planned MMS environmental studies provide a solid foundation to design a program to achieve an ecosystem-level understanding of the Gulf that includes ecological coupling among habitats. The Deepwater Subcommittee recommends that MMS consider an interdisciplinary ecosystem-level study of the deep Gulf that integrates the structure and function of different habitats and communities with physical oceanographic processes.

There are also significant advantages of an ecosystem-level approach for resource management and conservation. The Ocean Policy Commission recommends that environmental management be “ecosystem based” rather than centered on specific habitats or ecological phenomena. It also addresses the mandate that MMS link “adaptive management” to its NEPA analyses. Building on past studies, including a synthesis and critical review of these studies, is essential to develop sound and effective planning for new integrative studies.

Toward this end, the Deepwater Subcommittee recommends that OCS support the following agenda:

- ▶ We are very supportive of the planned Chemo III Study endorsed by the Workshop on Deepwater Environmental Studies Strategy: A Five-Year Follow-Up and Planning for the Future (2002), and recommended by the Studies Development Plan FY 2005-2007. Chemo III will extend investigations of chemosynthetic communities in the Gulf to deeper than 1000 m. This information is clearly vital to a comprehensive ecosystem-level understanding of the Gulf, and builds on the very successful Chemo I and Chemo II environmental studies.
- ▶ Complete the synthesis phase of the DGoMB study of soft sediment communities. The DGoMB study has successfully completed sampling the benthos across a geographically broad region. It is the only deep-sea benthic ecology program to have simultaneously sampled all major functional groups (bacteria, meiofauna, macrofauna and megafauna) on such large scales. It is also unique in combining a comprehensive descriptive study of benthic communities with process oriented studies to determine ecosystem function. The completion of this study is imperative to future planning for an ecosystem-level understanding of the Gulf. Specifically the Deepwater Subcommittee recommends that:
  - The Gulf Office and Headquarters work closely with DGoMB Program participants to assess the status of the current synthesis phase, and expedite the final report.

- MMS provide resources to complete the synthesis and maximize the benefits of this important study.
- A final workshop of participants be organized to present results of the study, and assure publication of the findings in a volume of *Deep-Sea Research II*.
- The DGoMB study produced a comprehensive accessible database of its results.
- ▶ Many scientific studies of the deep Gulf have been sponsored by other agencies such as the National Science Foundation, and the National Oceanic and Atmospheric Administration. To accomplish an ecosystem-wide understanding of the Gulf, we urge MMS coordinate their studies with those supported by other agencies (possibly through NOPP), and to collaborate in the development of a comprehensive database of the scientific findings from Gulf research.
- ▶ The southern half of the Gulf resides in Mexican waters. Obviously, an ecosystem-level understanding of the Gulf must include this vast region as well as the Northern Gulf. Ecosystem structure and function depend on the natural geography of the system, not national boundaries. The DGoMB Program established a successful collaboration with Mexican colleagues to extend its sampling program into southern waters. We recommend that MMS begin now to pursue agreements with the Mexican government, universities and the Mexican Academy of Sciences to establish a framework of international cooperation for future environmental studies in the Southern Gulf.