

# BOEMRE OCEAN SCIENCE

VOLUME 8 ISSUE 2  
APRIL/MAY/JUNE 2011

THE SCIENCE & TECHNOLOGY JOURNAL OF THE  
BUREAU OF OCEAN ENERGY MANAGEMENT,  
REGULATION AND ENFORCEMENT



## Recruiting for the Future

**Gulf SERPENT:**  
Exploring the Darkest Depths  
with Industry Partners

**Siphonophores:**  
Colonies or Multicellular  
Creatures?

**BOEMRE and Oregon Form  
Offshore Renewable Energy  
Task Force**

**BOEMRE's 26<sup>th</sup> Gulf of Mexico  
Information Transfer Meeting**

**First International Ministerial  
Forum on Offshore Drilling  
Containment**

**Offshore Technology  
Conference 2011:  
Technology, Science, and  
Regulatory Updates**



BOEMRE OCEAN SCIENCE is published quarterly by the Bureau of Ocean Energy Management, Regulation and Enforcement to communicate recent ocean science and technological information and issues of interest related to offshore energy recovery and ocean stewardship.



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ON THE COVER

Top left: A siphonophore belonging to the genus *Halistemma*, photographed by the Gulf SERPENT project below *Deepwater Horizon*.

Top right: Diving on the East Flower Garden Banks, 90–120 ft (27–37 m) depth.

Bottom: The First International Ministerial Forum on Offshore Drilling Containment. José Maria Botelho de Vasconcelos, Angola’s Minister of Petroleum, delivers his opening statement (on viewscreen). L to R: Eero Ailio (EU), R.P.N. Singh (India), D.N. Narashima Raju (India), Michael R. Bromwich (U.S.), Ken Salazar (U.S.), David Hayes (U.S.), Mario Gabriel Budebo (Mexico), Juan-Carlos Zepeda Molina (Mexico) Jan de Jong (Netherlands), Bradley Ilg (New Zealand), Per Rune Henriksen (Norway).

All photos courtesy of Bureau of Ocean Energy Management, Regulation and Enforcement, unless otherwise noted.

Publication services provided by Schatz Publishing Group.

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Michael R. Bromwich, *Director*

## Director's Note

As the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) completes the reorganization of the former Minerals Management Service, two successor bureaus will launch operations on October 1, 2011. The Bureau of Ocean Energy Management (BOEM) will be responsible for managing development of the nation's offshore energy resources, and the Bureau of Safety and Environmental Enforcement (BSEE) will independently and rigorously enforce safety and environmental regulations. We are institutionalizing in both bureaus a commitment to decisionmaking based on rigorous, credible scientific information, guided by the principles of scientific integrity. In fact, both bureaus will have high-level, environmental science and environmental compliance positions, and we have launched a nationwide search for qualified scientists to fill those positions.

To ensure the new agencies have quality scientific talent at junior as well as senior levels, I have personally visited a dozen universities in the past two months to recruit top-flight scientists to fill important positions in our new environmental compliance program, to bolster our Environmental Studies Program, and to enhance our environmental reviews.

This aggressive recruitment effort underscores our seriousness about environmental issues and reflects our emphasis on making science the cornerstone of principled decisionmaking.

Job listings for environmental scientists, biologists, oceanographers, physical scientists, and senior managers are now posted at [www.boemre.gov/jobs/index.htm](http://www.boemre.gov/jobs/index.htm). Join us in spreading the word about these exciting opportunities.

**Michael R. Bromwich, Director**



## About This Issue

These are exciting times at BOEMRE, times of transition, of cultural and structural change. We are implementing the most comprehensive offshore oil and gas regulatory reform in U.S. history, and reorganizing into new and separate bureaus.

Elemental to these changes are the roles of science and scientific integrity in our work, the expansion of our workforce, and the institution of new ways of carrying out our mission.

Reaching out to young engineers and scientists at top universities has resulted in many strong applicants to fill current and upcoming positions. At the same time, our Environmental Studies Program continues to produce premiere research that leads to more balanced decisionmaking. Sharing our findings at regional information transfer meetings and offshore technology conferences, working with individual states toward renewable energy, and partnering with industry on deepwater exploration, we remain committed to responsible development and protection of our marine resources.

We are also making strides toward innovative and better ways of improving safety and offshore energy development, not only at the regional or national level but on a global scale, by cooperating with other nations that carry out similar activities.

**Corrections to the previous issue, Volume 8, Issue 1:** The photo on the top right of page 13 was taken by Ralph Vasquez of BOEMRE. The page 14 photo of California mussels and the page 15 photo of the tidepool were taken by David Pereksta of BOEMRE.

## Recruiting for the Future

In the wake of the *Deepwater Horizon* oil spill, we are implementing the most comprehensive offshore oil and gas regulatory reforms in U.S. history. The number of submitted deepwater drilling applications is increasing. Our environmental and enforcement activities are expanding.

To better carry out our responsibilities through science-based energy management and regulation, BOEMRE is being reorganized into separate bureaus, which will be completed by October 1, 2011.

Reenergizing, increasing, and bringing the role of science in offshore energy development and permitting to the foreground is a cornerstone of BOEMRE's reorganization.

For the first time, we will have a Chief Environmental Officer, responsible for ensuring that environmental concerns are appropriately balanced in leasing and planning decisions and for helping set the scientific agenda relative to our oceans.

Another "first" is the creation of a new environmental enforcement function to supplement our ongoing environmental compliance work. This new function will help strengthen the role of environmental review and analysis.

This growing workload, combined with the addition of new positions within the bureaus, calls for a significant number of new engineers and environmental scientists from multiple disciplines.

In light of these facts, we are expanding and strengthening our new bureaus by aggressively recruiting engineers, inspectors, and environmental scientists from universities and colleges recognized for excellence in those fields.

We have begun actively recruiting to fill new and current positions in engineering and the environmental sciences. We hope to extend offers for approximately 60 full-time positions and 15–20 intern opportunities for engineers and inspectors in the Gulf of Mexico OCS Region by the end of the year.

In October 2010, Director Michael R. Bromwich launched a two-part nationwide recruitment campaign, visiting the nation's top colleges and universities to familiarize graduate students, faculty, and undergraduates with BOEMRE, discuss our goals and work, answer questions, and invite them to public service.

**Engineering.** The first tour of the campaign, which began in October 2010, focused on expanding our field of inspectors and engineers. Director Bromwich's tour took him to Louisiana State University (LSU), the University of Louisiana-Lafayette, the University of Houston, Texas A&M University, and the University of Texas at Austin. As a result, we received more than 500 applications for engineering-related positions.

Bromwich spoke with engineering students about internships and career opportunities with BOEMRE.

Environmental science and research have long been important to BOEMRE. Each year, through our Environmental Studies Program, we fund approximately \$30 million in scientific studies in the Gulf of Mexico, Alaska, Atlantic, and Pacific regions.



Secretary of the Interior Ken Salazar and BOEMRE biologist Latonia Viverette during the 2011 recruiting tour, Tulane University, New Orleans, LA. *Photo courtesy of Sally Asher.*

"We are in the midst of a very exciting time at BOEMRE, reorganizing the agency and strengthening its regulatory and oversight functions," he said. "The agency has a bright and challenging future, and should be an appealing place for young and talented engineers to use their distinctive expertise to serve the public interest."

At LSU, faculty and students provided Bromwich with a guided tour of the Petroleum Engineering Research & Technology Transfer Lab well-testing facility. According to Stephen Sears, Chair of LSU's Craft & Hawkins Department of Petroleum Engineering, "The students and faculty in this class are very interested in learning more about his vision of the future development of offshore oil and gas, and the opportunities for petroleum engineering graduates in the regulatory agencies."

**Environmental Sciences.** The second tour of the campaign was launched in April 2011. Bromwich and Dr. Alan Thornhill, Science Advisor to the Director, began a targeted effort to fill current and new environmental science and law positions in areas such as environmental studies, National Environmental Policy Act (NEPA) review, and environmental

compliance critical to the balanced development of offshore energy resources.

“These aggressive recruitment efforts underscore our seriousness about environmental issues and reflect our emphasis on science in decisionmaking,” Bromwich said.

During visits to the universities and colleges, Bromwich, Thornhill, and regional staff and scientists met with graduate students, undergraduates, and faculty to discuss the new and current environmental science-related opportunities being created through BOEMRE’s reorganization.

On the West Coast, Bromwich visited: the University of Washington, Oregon State University, Portland State University, Stanford University, the University of California at Davis, the University of California at Santa Barbara, the University of California at Los Angeles, the University of San Diego, and the University of California at San Diego.

On the Gulf and East Coasts, Bromwich visited Columbia University, Louisiana State University, and Tulane University.

By the end of April, BOEMRE received more than 2,000 applications for environmental science positions.

At Tulane University in New Orleans, Secretary of the Interior Ken Salazar joined Bromwich and regional staff to spend

a congenial afternoon with students and faculty in the environmental sciences and policy programs. While on the uptown campus, they spoke with a standing-room-only audience at Tulane Law School, including students and faculty from the Freeman School of Business and the School of Sciences and Engineering. Latonia Viverette, a biologist in the Gulf of Mexico OCS Region, gave a talk detailing our environmental program and her experience in BOEMRE’s Environmental Compliance Section. After a visit to the environmental lab facilities, they met with students, faculty, and researchers who work with BOEMRE’s environmental studies program.

Reaching out to students and faculty and inviting them to join our offshore energy regulatory program is one of our ongoing efforts to promote safe and balanced development of our nation’s offshore energy resources.

#### FOR MORE INFORMATION

**BOEMRE jobs**  
[www.boemre.gov/jobs/](http://www.boemre.gov/jobs/)

## Marine Biologist *Donna Schroeder*

During the April 2011 recruiting visit to West Coast universities, Donna Schroeder, a marine biologist specializing in fish, fisheries, and marine habitats, joined Director Bromwich to talk with students. As a marine biologist with BOEMRE’s Pacific OCS Region, Schroeder is very familiar with the actual work of the Environmental Studies Program.

Schroeder obtained a Bachelor’s degree in Marine Science from the University of Tampa and did graduate work in Biological Sciences at the University of California, Santa Barbara. She has conducted more than 1,000 scuba dives and over 100 submersible dives investigating marine habitats and populations, and has published a number of papers in peer-reviewed journals. She has been a BOEMRE scientist and analyst since 2007.

Her research interests focus on renewable energy, population dynamics, seafloor mapping, artificial reefs, effects of contaminants (DDT, heavy metals, and PAHs) on marine species, and marine policy.



Donna Schroeder with her favorite research tool, a submersible used to conduct surveys around the deep portions of offshore platforms.

She explained the three areas of closely interrelated environmental work that she and other environmental scientists carry out for BOEMRE.

The Environmental Studies Program helps in decisionmaking by designing, funding, and conducting environmental studies. Schroeder pointed out that BOEMRE funds most of the major oceanographic programs along the West Coast, such as large-scale mammal and seabird surveys. Information from the studies is used to inform NEPA analysts, who work with environmental scientists to ascertain potential consequences of different possible actions. The third area, environmental compliance, gauges how effective we are in predicting consequences and ensures that the mitigations and stipulations required by BOEMRE are working.

Schroeder stressed the value of the science we do, pointing out that BOEMRE funds research and programs to understand the more difficult things to assess, such as long-term consequences. The MARINE program, for example, is enormously effective, with numerous partners, studying long-term dynamics of near- and onshore effects of spills and climate change, and more.

## Gulf SERPENT:

### *Exploring the Darkest Depths with Industry Partners*

BOEMRE continues to work with industry partners to fund exciting research that uncovers the mysteries of the deepwater environment. The first step in learning about the abyss beneath the ocean's surface is finding a way to effectively explore this dark, high-pressure realm. The mesopelagic (656–3,280 ft or 200–1,000 m) and bathypelagic (3,280–13,123 ft or 1,000–4,000 m) zones receive little or no sunlight. Submersibles and remotely-operated vehicles (ROVs) that can work at these depths are in short supply to the research community and are extremely expensive.

While ROVs may be in short supply for researchers, the world's largest user of deep-sea ROV systems is the offshore energy industry. Although these industrial-class ROVs are heavily tasked, they do have periods of operational standby time. This standby time offers scientists a chance to explore the depths with industry.

The SERPENT (Scientific Environmental ROV Partnership Using Existing Industrial Technology) project is a creative collaboration between scientists and industry that uses industry's ROVs—and their skilled teams—during their available standby time to explore deep-sea environments by collecting video and photos. Also, because energy-related industry structures remain in place for substantial lengths of time, it is possible to collect long-term information.

Based at the National Oceanographic Institute in



A pyrosome (*Pyrosoma atlanticum*) filmed in Keathley Canyon, Gulf of Mexico, July 2009. Photo courtesy of Mark Benfield, LSU.



Chaceon crabs (*Chaceon* sp.) mating, Keathley Canyon, Gulf of Mexico, July 2009. Photo courtesy of Mark Benfield, LSU.

Southampton, United Kingdom, SERPENT Projects are operating at major deepwater exploration and production sites around the world.

**Gulf SERPENT.** The Gulf of Mexico has more than 100 oil and gas platforms in deepwater from which to explore. The Gulf of Mexico SERPENT (Gulf SERPENT) project currently operates at deepwater sites operated by BP, Chevron, Petrobras, and Shell.

In the northern Gulf of Mexico, BOEMRE is currently funding a 3-year Gulf SERPENT study along with in-kind matching funds from BP and Shell.

The primary goal of Gulf SERPENT is to collect water column data on the distribution, identity, and seasonal abundance of pelagic and mesopelagic macrozooplankton and micronekton. This is accomplished through a biological observation network established across the northern Gulf. Additionally, ROV video of the subsurface of the deepwater structures contributes to the study of hard and soft coral species and other epifauna on the platforms. Scientists can see not only what is there, but how it behaves.

In fact, since 2006, the *Deepwater Horizon* drilling rig had been a Gulf SERPENT partner site. On *Deepwater Horizon*, the ROV team collected hours of stunning images of marine life from the depths using a high-resolution camera funded by BP.

Dr. Mark Benfield, Associate Professor at Louisiana State University's Department of Oceanography & Coastal Sciences, directs the Gulf SERPENT project. Benfield and his team are studying the distribution and biodiversity of planktonic and nektonic marine organisms in the Gulf's mesopelagic and bathypelagic zones.

"It's all very exciting. My vision for the Gulf SERPENT Project is to establish a Gulfwide, deep-sea biological



A siphonophore of the genus *Apolemia*. Photo courtesy of Mark Benfield, LSU.

observation system. With hundreds of ROV-equipped ships and rigs in the deep Gulf, we can get a good idea of what species are present, where they are, and what are they doing,” Benfield said in an interview.

Carbon, which plays a role in ocean acidification, is transported from the surface to the ocean bottom in various ways. Benfield explained how Gulf SERPENT tracks the movement of some species in the Gulf. “Many deep-sea organisms undertake spectacular migrations of hundreds of meters each night. They arrive near the surface after dark when the risk of being consumed by visual predators is lower. Before dawn, they return to the depths, taking their meal and all its carbon with them. Our surveys will allow us to estimate the abundance of these organisms and learn more about the migratory behavior of individual species,” he said.

So far, scientists have found species that no one knew existed in the Gulf, including a giant jellyfish, a ctenophore, and a siphonophore, and have made remarkable observations of animals’ behavior.

The SERPENT programs have discovered and cataloged hundreds of species of deep-sea animals. Fascinating videos and photographs from SERPENT projects around the world are available to the public at the SERPENT project’s website. BOEMRE is proud to contribute to this ongoing research.

#### FOR MORE INFORMATION

##### SERPENT media database

<http://archive.serpentproject.com/>

##### BOEMRE Gulf SERPENT website

[www.boemre.gov/eppd/sciences/esp/Spotlight.htm](http://www.boemre.gov/eppd/sciences/esp/Spotlight.htm)

#### What Is That?

Two of the most fascinating creatures recorded by the Gulf SERPENT project are the oarfish (*Regalecus glesne*) and the manefish (*Paracaristius* sp.).

An oarfish was videotaped for the first time in its natural environment deep beneath BP’s *Thunder Horse* platform. This remarkable serpent-like creature was 16–33 ft (5–10 m) long. Benfield said that when they first saw it on the screen, they thought it was a riser pipe being lowered for installation. “We zoomed in a little bit and we said ‘that’s not a riser—that’s a fish!’”

The longest of the world’s fish, the oarfish can grow to 40 ft (12 m) in length. They live in the mesopelagic zone (656–3,280 ft or 200–1,000 m). They have been seen occasionally, either dead or dying, at the surface.

The manefish was filmed beneath Diamond Offshore’s *Ocean Confidence* drilling rig. Benfield said that while watching it live, “with its fins beautifully splayed out almost as a parachute, we learned a great deal about its movement. Anything that steals food from siphonophores probably has to be a good swimmer. This fish has very precise control over its orientation and position, so if you are in very close proximity to an animal with tentacles that could potentially damage you, you want to be able to really precisely control your locomotion.” The sighting was reported in *Copeia* No. 4, pgs. 637–641.

BBC video of Gulf SERPENT oarfish [http://news.bbc.co.uk/earth/hi/earth\\_news/newsid\\_8501000/8501251.stm](http://news.bbc.co.uk/earth/hi/earth_news/newsid_8501000/8501251.stm)

# Siphonophores:

## *Colonies or Multicellular Creatures?*

### TAXONOMY

Phylum:	Cnidaria
Subphylum:	Medusozoa
Class:	Hydrozoa
Subclass:	Petolinae
Order:	Siphonophorae

One deepwater inhabitant that has been observed during the Gulf SERPENT study is the siphonophore. If you've seen a Portuguese man-of-war (*Physalia physalis*), you've seen one kind of siphonophore.

Siphonophores are marine invertebrates that belong to the phylum Cnidaria, which includes corals, hydroids, and true jellyfish. Nearly 175 species have been described.

Made of clear gelatinous material, some form long, thin, chains up to 130 ft (40 m) long. Most species live in the water column in the open ocean, although some are attached to the sea floor.

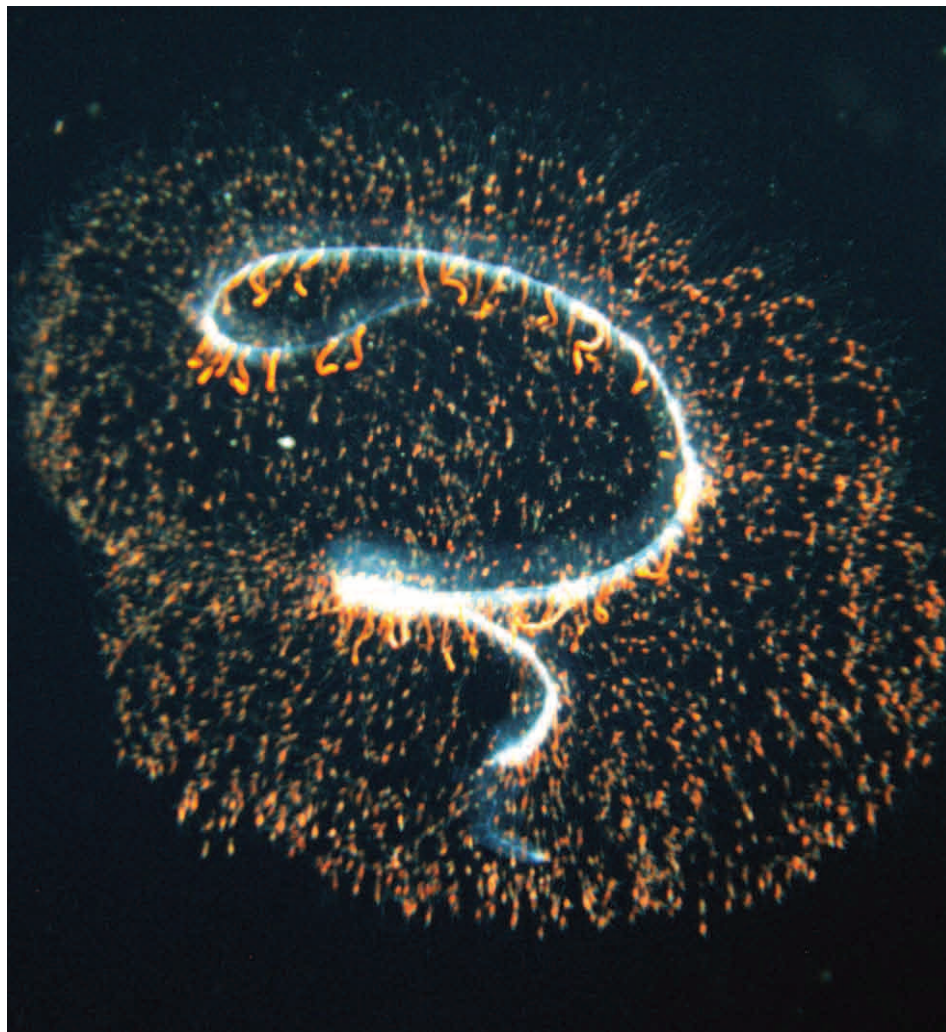
Some deep-sea species have red-orange digestive systems that are visible through their transparent tissue. Others are bioluminescent, glowing blue or green when they become agitated. Though they are very fragile and easily broken, siphonophores are predators and use their tentacles to capture small fish and crustaceans.

Typically, siphonophores wait for prey to swim into their tentacle-nets (individual lures can be hard to see in the deep sea), but some have evolved lure lights. Even more remarkable are the siphonophores of the group *Erenna*—they are the only known marine invertebrate to emit *red* light to lure prey.

A siphonophore may look like a single, solitary organism, but each one is, in fact, a colony made up of physiologically

integrated zooids—a cell or animal body. Rather than living independently, they are attached to each other.

Like human cells, siphonophore zooids are highly specialized and share genetic material. Each zooid can perform only one function, such as catching prey, digestion, or propulsion through the water. Also, these specialized interdependent zooids are arranged in a very precise pattern, which is the same within species. The colony lives or dies as a whole.



The galaxy siphonophore, in a fishing posture. This undescribed species has been seen in the Pacific and Atlantic. *Photo courtesy of Mark Benfield, LSU.*

### FOR MORE INFORMATION

**Siphonophores website. Casey Dunn; Dunn Lab, Brown University.**  
[www.siphonophores.org/lures.php](http://www.siphonophores.org/lures.php)

**Haddock, S.H.; C.W. Dunn, P.R. Pugh, and C.E. Schnitzler (2005): Bioluminescent and red-fluorescent lures in a deep-sea siphonophore. *Science* 309 (5732): 263. [abstract]**  
[www.sciencemag.org/content/309/5732/263](http://www.sciencemag.org/content/309/5732/263)



# Marine Ecologist

## *James Sinclair*

I pause my breathing, flap my fins ever so slightly to hold myself in just the right head-first position, exhale slightly to sink a little deeper in the crevasse of the reef and...*snap!* I've got the shot.

This is a common behavior for me on any dive when I have some free time to seek out the hidden, odd, and often beautiful creatures that inhabit our marine environment. My favorite motto is, "You gotta look at the little stuff." This means getting close with the camera or with my underwater magnifying glass (always in my pocket, along with the nylon sewing tape measure that works great underwater and the small light for looking in those crevasses).

There is so much to see in the underwater world that it is hard to take it all in. Time underwater is always too short and I have to pick and choose my subjects. Sometimes, when I have my head down in the reef, I miss the schools of jacks, manta rays, and even an occasional shark...but not always. I'm James Sinclair, a marine ecologist with BOEMRE.

The above description highlights the glamorous stuff. But you don't get there by wishing. Seventeen years ago, I quit a good-paying job to go back to school and get a degree in Marine Biology from Texas A&M University at Galveston. I also earned a Master's degree in Biological Sciences from the University of New Orleans. While going to school, I worked hard to get experience in marine science labs. That experience has paid off with a great job and a terrific career.

It's not all glamour. Field work is something I get to do a few weeks each year. Lots of preparation and hard work goes through the rest of the year to create and manage databases and conduct studies on habitats and the possible effects of offshore oil and gas activities. I also spend a lot of my time working on environmental documents.



A two-spot cardinalfish (*Apogon pseudomaculatus*) at Stetson Bank in the Gulf of Mexico.



James Sinclair, BOEMRE Marine Ecologist in the Gulf of Mexico OCS Region.

I'm part of a team of biologists that addresses subjects including deep-sea corals, chemosynthetic communities, tropical coral reefs, mesophotic reefs, offshore banks, the Pinnacle Trend, live bottoms, small seafloor features, seagrass, algae beds, *Sargassum* seaweed, fish communities, and deep and shallow soft bottoms. These are just the subjects I've worked on; other scientists cover marine mammals, endangered species, archaeology, socioeconomics, and the physical sciences. Then there's the work of reviewing environmental documents for such subjects as sand mining, deepwater natural gas ports, aquaculture, marine protected areas, and marine spatial planning. I also work on VIP briefings, rule-making, and review proposed regulations and laws.

Our bureau funds and participates in an amazing amount of first-class science. Managing federal offshore lands for energy development is complex. It takes a diverse variety of dedicated professionals in every field from biology, archaeology, sociology, geophysics, geochemistry, engineering, and everything in between. Over the years, our science program has been the bulwark of offshore environmental research in the Gulf of Mexico and has sponsored most of the pioneering baseline work. I'm proud to be a part of the team!

Study reports are available in our online database, ESPIS, at [www.gomr.boemre.gov/homepg/espis/espismaster.asp?appid=1](http://www.gomr.boemre.gov/homepg/espis/espismaster.asp?appid=1).

## BOEMRE and Oregon Form Offshore Renewable Energy Task Force

In Portland, Oregon, on March 31, 2011, BOEMRE held the first offshore renewable energy task force meeting with the State of Oregon.

Fifty-eight people from local, state, and federal agencies; tribal governments; and members of the public participated. The task force includes state government officials designated by the governor, officials from affected federal agencies, elected local government officials, and tribal leaders.

Through this task force, BOEMRE and the State of Oregon are pursuing intergovernmental coordination and communication about renewable energy on the Outer Continental Shelf (OCS).

California, Oregon, and Washington agreed, as part of the West Coast Governors' Agreement on Ocean Health (WCGA), to collaborate with BOEMRE, the Department of Energy (DOE), the Federal Energy Regulatory Commission, the National Oceanographic and Atmospheric Administration (NOAA), and other agencies, to evaluate potential benefits and impacts of renewable



Dr. Ann Scarborough-Bull, Environmental Studies Chief in the bureau's Pacific OCS Region, presents highlights of studies for offshore renewable energy along the West Coast.

ocean energy projects off the West Coast. An additional goal is to develop the long-term regulatory structure for the removal or expansion of activities.

Collaborating with BOEMRE and other agencies to evaluate potential benefits and effects of renewable ocean energy projects off the West Coast is a provision of the WCGA, as is the development of a long-term regulatory structure for removing or expanding activities.

Dr. Ann Scarborough-Bull, Chief of the Environmental Studies Section of BOEMRE's Pacific OCS Region,



The first BOEMRE and State of Oregon renewable energy task force meeting was held on March 31, 2011, in Portland, Oregon.

gave an overview of completed, ongoing, planned, and proposed environmental studies funded by the Bureau and carried out in cooperation with other partners.

For example, in partnership with DOE and NOAA, BOEMRE is investigating potential viewshed and visual effects and is also developing protocols for baseline studies, pre-installation sampling, and post-installation monitoring.

Among the goals Dr. Scarborough-Bull described were increasing information about habitats and resources, initiating and maintaining monitoring studies, continuing and expanding partnerships, and integrating information into our understanding of the ecosystem.

Maurice Hill, Renewable Energy Program Coordinator of BOEMRE's Pacific OCS Region, discussed the specifics of renewable energy tasks forces, such as legislation establishing their creation, their purpose, participants, and roles.

Hill pointed out that, through the task force, participants can actively provide input into the leasing process, rather than simply react to BOEMRE's proposed actions.

The meeting also included an overview of existing regulatory processes and discussions about how best to complement Oregon's ongoing ocean planning process in regards to renewable energy development on the OCS.

Ten other states have established task forces: Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Rhode Island, Virginia, and North Carolina. Florida and South Carolina's task forces are currently being established.

### FOR MORE INFORMATION:

**The Oregon Task Force and other states' task force activities:**

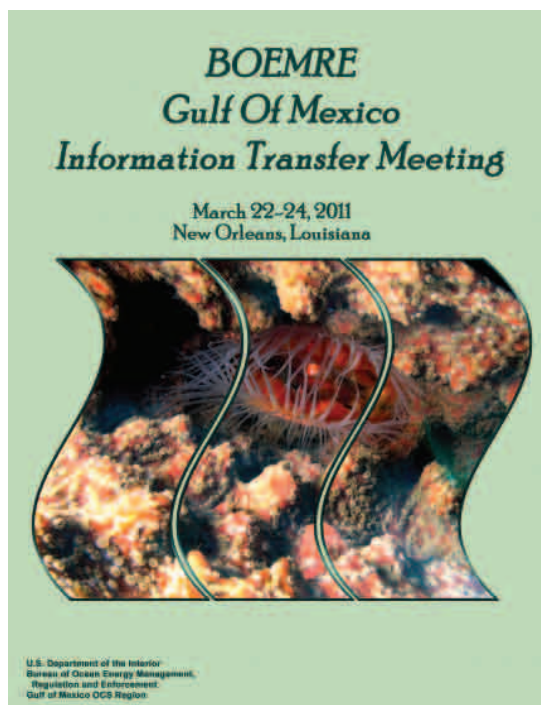
[www.boemre.gov/offshore/RenewableEnergy/StateActivities-CaliforniaOregonWashington.htm](http://www.boemre.gov/offshore/RenewableEnergy/StateActivities-CaliforniaOregonWashington.htm)

# BOEMRE's 26<sup>th</sup> Gulf of Mexico Information Transfer Meeting

More than 400 environmental scientists and researchers participated in the Gulf of Mexico OCS Region's Information Transfer Meeting (ITM), held March 22–24, 2011, in New Orleans' historic French Quarter. Participants represented universities, research institutes, Federal and State agencies, industry, and private companies. The research presented is funded by BOEMRE's Environmental Studies Program (ESP), often in partnership with other entities or agencies.

Several members of the Outer Continental Shelf Scientific Committee (SC) attended the ITM: Drs. D. Michael Fry, Lorrie Rea, Tyler Priest, and Joseph Smith. Appointed by the Secretary of the Interior, SC members evaluate studies that are proposed for the ESP, advise the Director about proposed studies' scientific value, and recommend studies for BOEMRE funding. At the ITM, SC members were able to see the progress of some of those studies.

Most of the 16 sessions held during the 3-day conference were related directly or indirectly to the April 20, 2010, *Deepwater*



*Horizon* oil spill. Several of the studies that had been underway at the time of the spill continued and collected important spill-related data; some ongoing studies have since been adapted to do the same.

Presentation subjects included impacts, methods of assessing and monitoring impacts, lessons learned, and spill-response technologies.

Interest and energy were high as presenters explained their research projects, discussed their methodologies for collecting and analyzing data, and exchanged ideas with colleagues about challenges, obstacles, outcomes, and possible implications.

In his keynote address, BOEMRE Director Michael R. Bromwich emphasized the bureau's commitment to rigorous, unfiltered, and

thorough science; greater independence and scientific integrity; and scholarly endeavors that strengthen BOEMRE's voice in the scientific community.

Recognizing that serious reform is often triggered by tragedy, Bromwich acknowledged the need for tough new rules defining boundaries. He also called for a renewed commitment to a culture of scientific integrity.

Among the more heavily attended sessions were two sessions dedicated to the fall 2010 *Lophelia II* cruises, part of a 4-year project to characterize deep-sea coral communities in the Gulf. Researchers from several disciplines participate in the *Lophelia II* project and cruises: marine archaeology, biology, geology, and ocean chemistry.

In the collegial sessions, presenters posed new research questions, such as "Do migrant birds carry effects of an oil spill with them?" and offered suggestions, such as a Gulfwide ecosystem-monitoring network to track continuing anthropogenic impacts.

The Gulf of Mexico OCS Region's ITM is held every two years. However, after 2012, it will be held annually. Proceedings from the 26<sup>th</sup> ITM will be available later this year; those from previous years are available on BOEMRE's website.

## Representative presentations:

- Bank erosion of navigation canals in the Western and Central Gulf of Mexico
- Changes in coastal fish communities following the *Deepwater Horizon* spill
- Effects of oil and gas exploration on estuarine bottlenose dolphin stocks in the Gulf of Mexico
- Effects of the *Deepwater Horizon* oil spill on migratory shorebirds
- Freshwater diversions and public oyster seed grounds
- Geophysical data analysis of the MC-118 hydrates observatory
- Gulf Coast shipbuilding and fabrication: a historical overview and context
- Movement and habitat associations of sea turtles in the Gulf of Mexico
- Potential wetland impact
- Spanish shipwrecks in ultra-deepwater
- Studies of bluefin tuna larvae from the Gulf of Mexico
- The Loop Current in Mexican waters

## FOR MORE INFORMATION

### Information Transfer Meetings, BOEMRE

[www.gomr.boemre.gov/homepg/regulate/envIRON/itm.html](http://www.gomr.boemre.gov/homepg/regulate/envIRON/itm.html)

### BOEMRE Scientific Committee

[www.boemre.gov/mmab/ScientificCommittee/ocssc.htm](http://www.boemre.gov/mmab/ScientificCommittee/ocssc.htm)

# First International Ministerial Forum on Offshore Drilling Containment

**“Ocean energy safety transcends national boundaries and requires global solutions.”**

The *Deepwater Horizon* oil spill was tragic and destructive. Perhaps equally tragic, it was not the first such offshore event that resulted in the loss of life and damage to the environment. But it was the impetus for initiating and garnering international cooperation in preventing such accidents.

Six days before the 1-year anniversary of the *Deepwater Horizon* event, a diverse group invited by Secretary of the Interior Ken Salazar began a dialogue on precisely those topics.

In the first Ministerial Forum on Offshore Drilling Containment, ministers and senior officials from 12 nations and the European Union—with representatives from academia, industry, and nongovernmental organizations—shared and discussed experiences, lessons learned, and best practices in safety, regulatory systems, and containment technologies in offshore exploration.

There is near-global agreement that just as we share the oceans, we should also share containment solutions and safety measures to prevent future tragedies and consider how to best work together.

Held in Washington, D.C. on April 14, 2011, and open to the public, the Forum was organized by Secretary Salazar to begin a dialogue on globally-shared challenges: strengthening capabilities for containing potential deepwater blowouts, developing global solutions for offshore containment technologies, recognizing the potential for global standards, and discussing the future of offshore drilling.

In their opening statements, speakers referred to experiences that had led and are leading to major changes in regulations, oversight, and technologies.

José Maria Botelho de Vasconcelos, Angola’s Minister of Petroleum, began by articulating a belief shared by the group: “The *Deepwater Horizon* opened a new era in drilling; if you think it’s unimportant, you need to experience an incident like that to understand.” Angola, which has an offshore area 233 mi<sup>2</sup> (375 km<sup>2</sup>) and 13,123 ft (4,000 m) deep that has potential for oil, is opening two blocks for leasing this year, with one project in deepwater.

“Past performance should not be used as a guarantee for the



L to R: D.N. Narashima Raju (India), Michael R. Bromwich, Ken Salazar, David Hayes (U.S.); Mario Gabriel Budebo (Mexico).

future. Industry is developing better tools, and we must be sure they develop technology that looks to the future, not only to what has already happened,” said the European Union’s Eero Ailio (DG Energy, Deputy Head of Unit, Coal and Oil Policy) in his opening statement.

Geoffrey Podger of the United Kingdom—one of the first nations to begin offshore energy development—spoke of the 1988 *Piper-Alpha* disaster, in which 167 people died, and the resulting changes in regulations. “We upped our game as regulators,” Podger said, and set about “procuring a subsea capping device for use anywhere in the North Sea environment.”

“We must continue to consider and respond to lessons from Macondo [*Deepwater Horizon*] and Montara [Australia],” Podger added.

Moderator of the first session, *Lessons Learned: The Need for Better Well Containment Capabilities Worldwide*, BOEMRE Director Michael R. Bromwich noted that the *Deepwater Horizon* event had “exposed the lack of ability to contain a spill,” and that “regulations had not kept pace with the expansion of drilling.” The panel discussion centered on the recent blowouts in the Gulf of Mexico (Macondo—*Deepwater Horizon*) and off the coast of Australia (Montara).

Australia’s Martin Hoffman, Deputy Secretary of the Department of Resources, Energy and Tourism, discussed in detail the Montara 2009 blowout which, though in shallower water than *Deepwater Horizon*, took approximately the same amount of time to bring under control. Unlike the

*Deepwater Horizon* investigation, the Montara inquiry is a no-blame inquiry, looking for faults but not using the findings for prosecution.

Currently, Australia is moving toward a national regulatory system that would include environmental aspects. Hoffman also pointed out that the fact that “the operators are the same around the world, are in all of our jurisdictions” calls for a global approach and international collaboration.

Don Winter, Chair of the Analysis of the Causes of the *Deepwater Horizon* Explosion, Fire and Oil Spill Committee, shared his own remarks. (Although he is chair of the committee charged with analyzing the causes of the *Deepwater Horizon* event, the committee is still analyzing data and preparing recommendations.)

Providing specific examples of how tragedy has necessitated innovative changes and standards, Winter spoke of the loss of the U.S. Navy nuclear submarine *Thresher* and 129 crew members in 1963. This loss led to the SubSafe Certification Program: standards for design, materials, fabrication and manufacturing, along with new equipment, logistics, exercises, and procedures for escape, survival, and rescue capability. Since SubSafe began in 1963, only one submarine—not SubSafe certified—has been lost to noncombat causes.

To emphasize the value of broad-based international cooperation, Winter pointed to the sinking of the Russian submarine K-141 *Kursk* in 2000, a tragedy that accelerated the creation of the International Submarine Escape and Rescue Working Group. A major outcome was the 2005 successful rescue of the crew of the *Priz*-class submersible, *AS-28*, another Russian vessel which had become entangled in lines and fishing nets 600 ft (190 m) down off the coast of Kamchatka. Responding to Russia’s emergency request for assistance, the British Royal Navy sent an unmanned *Scorpio* rescue sub, which was able to free the submarine.

The afternoon session, *Promoting Next Generation Well Containment Technologies*, was moderated by David Hayes, Deputy Secretary of the Interior. The panel presenters were James Dupree, BP Regional President, Gulf of Mexico; Owen Kratz, President and Chief Executive Officer of Helix Energy Solutions; Malcolm Webb, Chief Executive Officer of Oil & Gas U.K.; and Thomas Hunter, Chair, Ocean Energy Safety Advisory Committee.

Owen Kratz, President and CEO of Helix Energy Solutions, one of the two companies that had come forward with containment system solutions, gave a presentation describing their Helix Faster Response System. Underscoring that preparedness is key, Kratz pointed

out that, because of the difficulty in getting contracts into place during a crisis, their approach requires that contracts are in place before a crisis occurs.

One effect, in the United Kingdom, of the Macondo oil spill was described by Malcolm Webb, CEO of Oil & Gas U.K., a nonprofit group representing the oil and gas industry. “*Piper-Alpha* was horrific; it changed us and it revolutionized our approach to offshore safety. We recognized that Macondo would do the same in the U.S.” The Macondo oil spill spurred the formation of the Oil Spill Prevention & Response Advisory Group to explore, “What would we do if Macondo happened here?” Scheduled to disband in the summer of 2011, the group agreed to accept wherever the answers led.

Because of the stormy conditions in the North Sea, a capping device, rather than a containment system, was deemed necessary. In July, a lightweight (30-ton) capping device will be delivered that will be able to shut-in any rig in the U.K. in 10–30 days, considering weather.

Regardless of the solutions, Webb said, they must be open and available for all. He also pointed out that both localized and international initiatives are important.

In the discussion that followed, participants broached such related subjects as how to get companies together for a response, the efficacy of consortiums, financial aspects of a coordinated response, the challenges of recruiting the top talent, and the potential use of third-party verification.

While many acknowledged that developing international standards and protocols would be appropriate, it was agreed that the topic called for further definition, consideration, and discussion, in part to ensure that another level of bureaucracy is not created that may undermine the intended aim.

Perhaps the most significant outcome of this first forum, however, was the unanimous agreement to continue with a



L to R: Panel presenters in Session 1, Lessons Learned: Don Winter (U.S.); William Reilly (U.S.); Martin Hoffman (Australia).

similar forum next year. Secretary Salazar proposed a new organizational structure: establish a high-level group that will develop recommendations that ministers and secretaries can bring directly to heads of state. For example, Bromwich would bring recommendations to Salazar, who would then present them to President Obama and Secretary of State Hillary Clinton. This conceptual proposal was also unanimously endorsed in the last segment of the forum.

The dialog that began with this forum will continue, and the group will meet again next year. As Yevgeny Vasilyevich Baryshev remarked, “Unless we cooperate, we are all speaking in a small room with no windows.”

### FOR MORE INFORMATION

#### Forum agenda, speakers, and supporting materials

[www.doi.gov/whatwedo/energy/MFODC2011/index.cfm](http://www.doi.gov/whatwedo/energy/MFODC2011/index.cfm)

#### Oil Spill Prevention and Response Advisory Group (OSPRAG), Oil & Gas UK

[www.oilandgasuk.co.uk/knowledgecentre/OSPRAG.cfm](http://www.oilandgasuk.co.uk/knowledgecentre/OSPRAG.cfm)

### Forum participants:

- Angola: José Botelho de Vasconcelos, Minister of Petroleum
- Australia: Martin Hoffman, Deputy Secretary of the Department of Resources, Energy and Tourism
- Brazil: Heiter R.P. Lima, Senior Consultant, Petrobras
- Canada: Max Rulac
- India: R.P.N. Singh, Minister of State, Petroleum and Natural Gas, Government of India; D.N. Narashima Raju, Joint Secretary (Exploration), Ministry of Petroleum and Natural Gas
- The European Union: Eero Ailio, DG Energy, Deputy Head of Unit, Coal and Oil Policy
- Mexico: Juan Carlos Zepeda Molina, President, National Hydrocarbons Commission of Mexico; Mario Gabriel Budebo, Deputy Secretary of Hydrocarbons, Ministry of Energy
- The Netherlands: Jan de Jong, Inspector General of Mines, State Supervision of Mines
- New Zealand: Bradley Ilg, Senior Petroleum Geologist, Crown Minerals Group, Ministry of Economic Development
- Norway: Per Rune Henriksen, State Secretary, Ministry of Petroleum and Energy
- Russian Federation: Yevgeny Vasilyevich Baryshev, Head, Russian Federation State Marine Rescue Service
- The United Kingdom: Geoffrey Podger, Chief Executive, Health and Safety Executive; member, Department of Climate Control

## Offshore Technology Conference 2011: *Technology, Science, and Regulatory Updates*

Each year, the Offshore Technology Conference (OTC) showcases state-of-the-art technology for offshore drilling, exploration, production, and environmental protection. An international event for the development of offshore resources, the OTC began in 1969 and is held at the Reliant Center in Houston, Texas. Participants and attendees include engineers, scientists, technicians, executives, operators, and managers from all fields of the energy and petrochemical industry.

Held May 2–5, 2011, more than 78,000 people representing more than 110 nations attended the OTC, setting the largest attendance record in 29 years.

This year’s OTC highlights included discussions and presentations related to the “post-*Deepwater Horizon* new era of regulation and oversight” and panels of experts and government officials that addressed a variety of topics such as risk, drilling safety, renewable energy development, and spill-response issues.

Technical sessions and discussions covered such topics as new developments in wind energy and carbon sequestration, energy geopolitics, and exploring Russia’s energy industry.

Particular projects, such as major field developments in China and the Middle East, were also popular topics.

One of several new topics presented at OTC was Marine Archaeology. The full-day session drew more than 60 attendees and featured presentations by BOEMRE marine archaeologists.

In his talk, “Next Steps in Offshore U.S. Regulation,” BOEMRE Director Michael R. Bromwich announced to a standing-room only audience that the Department of the Interior will begin to extend its enforcement capabilities to offshore contractors.

Bromwich also announced the bureau’s intention to work with other nations’ regulatory agencies to develop a consistent set of regulations and standards for drilling activity and safety.

In addition, he explained the upcoming reorganization of BOEMRE functions into the Office of Natural Resources Revenue, the Bureau of Ocean Energy Management, and the Bureau of Safety and Environmental Enforcement. A National Offshore Training Center for inspectors will also be established.

## In Memoriam

### John Rankin

John Rankin, the first Gulf of Mexico OCS Regional Director, passed away on April 12, at the age of 92. He had lived in Russellville, Arkansas since his retirement from BOEMRE (then MMS) in 1985.

During World War II, Rankin served in the U.S. Navy, first as an Aviation Machinist's Mate and later as a commissioned officer on ships in the American, European, and Pacific theaters.

A former mayor of Russellville, Rankin resigned his office to accept a position with the Department of the Interior's Bureau of Land Management (BLM) in Washington, D.C., where he served on the Board of Hearings & Appeals, before being transferred to Denver as the Colorado State Land Office Manager for the BLM. Within a year he was transferred to the BLM's New Orleans OCS office, where he began a 25-year career.

Rankin was Regional Manager for the BLM in New Orleans, directing the Gulf of Mexico oil and gas leasing program. When, in 1982, the OCS lease management and regulatory functions of the BLM and the U.S. Geological Service were combined in the newly-formed Minerals Management Service, Rankin was named the first Gulf of Mexico Regional Director.

Rankin presided over the first billion-dollar sale of oil and gas leases in the Gulf of Mexico, wearing a red jacket that became a traditional part of banner lease sales.

When he retired in 1985, Rankin received the Department of the Interior Award for Excellence of Service, Meritorious Service, and Distinguished Service.

Rankin Bank, an important topographic feature in the Gulf, was named after Rankin, who worked hard to protect these coral reefs and led the way in demonstrating the compatibility of offshore oil and gas production and biological resource protection.

### Dr. Greg Stone

Dr. Greg Stone, James P. Morgan Distinguished Professor and Director of the Wave-Current Information System (WAVCIS) program, and internationally renowned coastal researcher, passed away on February 17 in Baton Rouge, Louisiana. He was 53 years old.

A highly respected faculty member of the Louisiana State University School of the Coast and Environment, Director of the Coastal Studies Institute (CSI), and a professor in the Department of Oceanography and Coastal Sciences, Stone received a B.S. with honors from the University of Ulster (Ireland), an M.S. from the University of West Florida, and, in 1990, a Ph.D. from the University of Maryland.

As a coastal scientist who produced cutting-edge



Sunset over the Gulf of Mexico, from Padre Island, Texas.

research, Stone focused on the oceanic processes that drive changes on different types of coasts. He specialized in the physics of waves, measuring the coastal effects of wave period, height, and kinetic energy, which are key to understanding the resilience of the Louisiana coast.

Stone and the CSI Field Support Group developed a series of offshore instrumented stations to monitor wind, waves, and currents that impact the Louisiana coast. The WAVCIS stations produce data that may be accessed by the public on the Web. This program has received international recognition for its technical innovation and scientific value.

With funding from BOEMRE (then MMS), the Louisiana State Department of Natural Resources, and the U.S. Geological Survey, Stone developed a pilot study to evaluate, with state-of-the-art numerical hydrodynamics models, how the loss of barrier islands and wetlands affect storm surge and wave energy along the coast. The study area included a section of the Louisiana coast that is eroding at the highest rate in the U.S: Terrebonne Bay, Timbalier Islands, and the Isles Dernieres.

This project was the first in the U.S. to qualitatively determine the connection between barrier island and wetland loss on the magnitude of change in storm surge and storm wave elevation. Reaching beyond conventional approaches, the project included wave propagation and height, hurricanes and storms, and other weather events. The report, published in 2003, is titled *Coastal Land Loss and Wave-Surge Predictions during Hurricanes in Coastal Louisiana: Implications for the Oil and Gas Industry*.

Stone was also involved in several other important BOEMRE studies, including *Environmental Investigation of the Long-term Use of Ship Shoal Sand Resources* (2004–2007) and *Environmental Investigation of the Long-term Use of Trinity and Tiger Shoals as Sand Resources for Large-scale Beach and Coastal Restoration in Louisiana* (2006–2009). His expertise was often called on during the *Deepwater Horizon* event.

## BOEMRE OCEAN SCIENCE

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### Outer Continental Shelf Scientific Committee Meeting Held in May

BOEMRE's Outer Continental Shelf (OCS) Scientific Committee held a public meeting May 17–19, 2011, in Hyannis, Massachusetts.

A public Federal advisory committee of distinguished scientists, the OCS Scientific Committee is chaired by Dr. Michael D. Fry, the Director of Conservation Advocacy for the American Bird Conservancy. The committee's 15 members are recognized experts in biological oceanography, marine biology, physical oceanography, and the social sciences.

During the meeting, BOEMRE Director Michael R. Bromwich updated the committee on the bureau's regulatory reform and reorganization efforts and the Department of the Interior's recently completed Scientific Integrity Policy.

The meeting included progress reports on BOEMRE's renewable energy program activities

pertaining to the National Ocean Policy, Atlantic Governance Councils, and ongoing and future research related to the *Deepwater Horizon* oil spill.

The committee also evaluated the studies plans proposed by BOEMRE's regional offices for Fiscal Years 2012–2014.

Through BOEMRE's director, the committee advises the Secretary of the Interior about the appropriateness, feasibility, and scientific value of the bureau's OCS Environmental Studies Program (ESP), and decisions related to environmental aspects of the offshore energy and marine minerals programs.

The committee reviews the relevance of the scientific information produced by the ESP and may recommend changes in its scope, direction, and emphasis.

More information about the OCS Scientific Committee is available at [www.boemre.gov/mmab/ScientificCommittee/ocsc.htm](http://www.boemre.gov/mmab/ScientificCommittee/ocsc.htm).