

**Upcoming
Events/Meetings:**

Oceans '10 - MTS/IEEE
September 20-23, 2010
Seattle, WA

Census of Marine Life 'Decade of
Discovery' Events
October 4-7, 2010
London, England

10th Meeting of the Conference of
the Parties on the Convention on
Biological Diversity
October 18-29, 2010
Nagoya, Japan

PICES 2010 Annual Meeting
October 23-31, 2010
Portland, OR

An Ongoing Disaster in the Gulf of Mexico

The disaster in the Gulf of Mexico began on April 20, 2010 when the *Deepwater Horizon* offshore drilling rig situated about 41 miles (66 km) southeast of the Louisiana coast experienced a catastrophic explosion and subsequent fire while drilling an exploratory well, killing 11 workers. Since then, the oil spill has dominated the news and filled the general public and marine scientists with both desperation (about the numerous consequences of the released oil, use of dispersants and the impending hurricane season) and hope (for a solution).

Although the most recent news states that the broken oil pipe has been capped, the *Deepwater Horizon* oil spill remains the largest in U.S. history. It will take decades for the Gulf of Mexico ecosystem to recover from the leak. The oil could devastate marine life in both the deep sea and along hundreds of miles of coastline, affect all the levels of the food chain, create areas of extremely low oxygen, and disrupt the lucrative Gulf seafood industries. This oil spill will undoubtedly touch the lives of all those living along the Gulf coasts.

Ocean Leadership's Role

On June 3, 2010, the Consortium for Ocean Leadership convened a federally-sponsored scientific symposium on the Louisiana State University (LSU) campus to discuss the urgent science issues regarding the *Deepwater Horizon* oil spill. Over 200 participants attended the event in Baton Rouge, including scientists from approximately 50 academic institutions, 10 non-profit organizations, and representatives from a dozen federal agencies. The participants were briefed by federal agency officials about the government's

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An Ongoing Disaster in the Gulf of Mexico *(continued)*

response and research activities. The key component of the meeting was breakout sessions focused on estimating the flow rate of the spill, projecting its fate, and determining the effects of the oil and the dispersants on the environment and human health.



To read the entire summary from the *Deepwater Horizon* Oil Spill Science Symposium, please visit www.oceanleadership.org/wp-content/uploads/2010/06/DeepwaterHorizonOilSpillSymposiumSummary.pdf. Ocean Leadership has also established a Gulf Oil Spill web site (www.oceanleadership.org/gulf-oil-spill) in order to make available the most comprehensive and up-to-date information on the response and restoration efforts and research opportunities in the Gulf of Mexico.

Robert Gagosian (Ocean Leadership President and CEO) and Chris D'Elia (Dean of the School of the Coast and Environment at LSU) authored an Op-Ed in the July 27 edition of the *Washington Post*. The Op-Ed, entitled 'Research on gulf oil spill shouldn't take a backseat to litigation,' expressed Ocean Leadership's view of the need for a comprehensive national science plan to address the Gulf of Mexico oil spill. The litigation associated with the *Deepwater Horizon* spill is expected to continue for years, meaning much of the information obtained from research and monitoring will

be tied up in a legal case and will not be made publicly available. The piece notes that because of the impending legal battle, the broader scientific community will be unable to use much of this information to understand the ongoing effects of the oil and dispersants, or to help our nation's policymakers better prepare for future accidents. To read the entire Op-Ed, please visit www.washingtonpost.com/wp-dyn/content/article/2010/07/26/AR2010072604443.html.

Members of the Census of Marine Life Community Respond

Dr. Sylvia Earle, Census of Marine Life U.S. National Committee member, testified on May 19, 2010 to the Committee on Transportation and Infrastructure of the U.S. House of Representatives on the impact of the leaking oil on natural resources in the Gulf of Mexico. Dr. Earle stated that the greatest problems facing the U.S. with respect to the *Deepwater Horizon* oil leak are ignorance and complacency. Much of her testimony focused on the possible toxic effects of the dispersant chemicals, which she said should not be used as they could damage the small organisms that are vital to the overall health of the ocean. She also noted that there was the "need to establish a data baseline to find out what species were in the Gulf prior to the oil spill, to help monitor the current situation and assist recovery over many years." Her thoughts on possible solutions included halting the use of dispersants and deploying sensors to evaluate the subsurface plumes of oil and their impact on the marine life in the water column and on the sea floor. To read her entire testimony, please visit <http://blogs.nationalgeographic.com/blogs/news/chiefeditor/2010/05/cheap-oil-is-costing-us-the-earth.html>. ★

Around the Globe with the Census of Marine Life

The Census Mapping & Visualization team now offers a spinning, interactive exploration of Census discoveries. The interactive map allows users to choose themes to learn about different ocean realms, Census scientific expeditions, and Census-studied species that are currently on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.

Census press releases, including the recent 'Census of the Hard-to-See', can also be explored.

To explore the globe with the Census, please visit <http://comlmaps.org/globe/>.





Education Corner

Gulf of Mexico Alliance

Given the current situation in the Gulf of Mexico, the U.S. program office for the Census thought it was an appropriate time to highlight the Gulf of Mexico Alliance. The Gulf of Mexico Alliance is a partnership between the states of Alabama, Florida, Louisiana, Mississippi, and Texas. It strives to increase regional collaboration to improve the ecological and economic health of the Gulf of Mexico. The Alliance works at local, state, and federal levels to address six priority areas including: water quality; habitat conservation and restoration; ecosystem integration and assessment; nutrients and nutrient impacts; coastal community resilience; and environmental education (see Education Link of the Quarter, below).

After hurricanes Katrina and Rita, the five Gulf Coast Governors signed the Gulf of Mexico Alliance Governors' Action Plan for Healthy and Resilient Coasts in March 2006. They recognized that the economy and quality of life for their citizens was directly linked to the Gulf of Mexico's ecological health. The plan allows for sharing science, expertise, and financial resources amongst the states.

The Gulf of Mexico Alliance web site includes a page highlighting the response, recovery, and restoration steps being taken to address the *Deepwater Horizon* oil leak. For more information, please visit <http://www.gulfofmexicoalliance.org/deepwaterhorizon/response.html>. ★

EDUCATION LINK OF THE QUARTER

Gulf of Mexico Alliance Environmental Education Network

The Gulf of Mexico Alliance Environmental Education Network (GOMAEEN) is a regional body of educators and outreach practitioners that addresses the environmental education priority of the Gulf of Mexico Alliance. GOMAEEN provides leadership and coordination of educational and outreach activities in the Gulf. Their environmental education efforts include formal and informal educational opportunities, professional development, and communication, in an attempt to reach audiences from "K to Gray." GOMAEEN is committed to providing environmental education, including local cultural and economic values, to encourage actions toward sustaining a healthy Gulf.

Teachers and educators can find resources, classroom lessons, databases, and maps organized by topic and grade level on the GOMAEEN web site. There is a digital library that acts as a clearinghouse for the "collection and dissemination of carefully selected and vetted electronic resources about the Gulf Coast region." The web site also provides a media center with numerous podcasts and videos.

For teachers and students interested in resources about oil spills, GOMAEEN has Frequently Asked Questions and a lesson page devoted to oil industry and spills. There are links to additional web sites, which offer information on topics from dispersants to real time information on the Gulf's loop current. For those directly affected by the current oil spill, the GOMAEEN home page offers a link to a 33 page document with information and contacts for the *Deepwater Horizon* Oil Spill, broken down by state.

Visit the GOMAEEN web site (<http://gulfallianceeducation.org/>) and find your source for Gulf of Mexico environmental information, local events, projects, and volunteering and funding opportunities!

GULF OF
MEXICO
ALLIANCE



USNC Holds Final Full Meeting in Washington, D.C.

The U.S. National Committee (USNC) for the Census of Marine Life (Census) held its last full committee meeting at the Ocean Leadership offices in Washington, D.C. on April 19-20, 2010. The main topics of discussion at the meeting included the production of three essays on how Census has influenced marine biodiversity research, data management, and technological/scientific responsibility over the past 10 years from the viewpoint of the U.S. USNC members also discussed their roles in the October 2010 'Decade of Discovery' events in London, as well as their own thoughts for the U.S. 2010 celebration event. After the meeting, the USNC was treated to a special tour of the Smithsonian Ocean Hall thanks to Nancy Knowlton (Sant Chair for Marine Science at the Smithsonian's National Museum of Natural History and member of the Census of Coral Reef Ecosystems (CReefs) project). ★



Frequently Asked Questions about the Census of Marine Life

Q: I just sent back my 2010 U.S. Census form. How is the Census of Marine Life conducted and what information are you looking for? I am fairly certain that marine life can't fill out forms and mail them back to your offices in Washington, D.C.!

A: This question is more common than you might think. Our "census" is very different from what the U.S. government tries to determine every ten years about the American population. Over 2,700 Census of Marine Life scientists work together as part of 17 different projects and 11 regional committees to assess what has lived, lives, and will live in the ocean. Our Census is not only interested in what marine life lives in the ocean, or where it is found, but more importantly, how such information can increase our understanding of the interactions and function of marine species in their environments.

Q: Is Census information intended mostly for scientists or will the general public be interested too?

A: Well, if the general public hasn't heard about the Census yet, we are hoping they will soon. Over the past ten years, Census information has been published mostly in highly scientific journals and discussed at marine science conferences. But recently, the Census has been highlighted in broader circulated venues such as *Discover*, *Time*, *Popular Science* and *The Economist* magazines. As part of our 'Decade of Discovery' events in London later this year (www.coml.org/coml2010), we are holding a major news conference in conjunction with National Geographic in the hopes of widely distributing our results to the general public. The news conference will be shown via the internet on www.CoML.org, so be sure to check out the web site on October 4, 2010 and learn more about our ten years of findings!

**Do you have a question about the Census of Marine Life?
Submit it to CoML@OceanLeadership.org and we'll answer it!**



1 2 3 4 5 6 7 8 9 10

Carnivorous Sponge Among Top 10 New Species

The deep sea carnivorous sponge *Chondrocladia (Meliiderma) turbiformis*, known only from Pyre and Gothic seamounts in the Graveyard seamount complex on the New Zealand sea floor, has been selected as one of the 2010 Top 10 New Species by the International Institute for Species Exploration (IISE). The carnivorous sponge was joined by a Dracula minnow and a deep sea worm that drops bioluminescent 'bombs' as a defense mechanism.

Each year, the IISE releases its top 10 list. This year IISE chose from over 18,000 recently confirmed new species. The mission of IISE is to "inspire, encourage and enable the advancement of taxonomy and exploration of earth's species."



Image courtesy of Jean Vacelet

To view the 2010 Top 10 New Species, please visit <http://species.asu.edu/Top10>. If you would like to nominate a species for the 2011 Top 10 New Species, please visit <http://species.asu.edu/species-nomination>. ★

PLoS ONE Catalogued in Web of Science, Receives an Impact Factor

In June, the journal *PLoS ONE* received its first impact factor of 4.351 from the Thomas Reuters Journal of Citation Reports 2009. *PLoS* was launched in 2006 and is an interactive, open-access journal of peer-reviewed scientific and medical research. *PLoS ONE* was indexed in the Web of Science in January, which spurred its receipt of journal-level citation data from Thomson Reuters.



PLoS one

www.plosone.org

The Census of Marine Life has encouraged publication of results in open-access journals, and *PLoS ONE* in particular. The new impact factor increases the profile of Census findings published in *PLoS ONE*. A collection of papers from the National and Regional Committees of the Census entitled 'Marine Biodiversity and Biogeography: Regional Comparisons of Global Issues' will be published in *PLoS ONE* in August, including a paper by the U.S. National Committee, entitled *An Overview of Marine Biodiversity in United States Waters*. Collections from the Tagging of Pacific Predators (TOPP) and Marine Barcode of Life (MarBOL) projects have already been published and are available here: www.ploscollections.org/static/poneCollections.action.

Seven Questions with Dr. Wes Tunnell

As a regular feature of the U.S. CoML Newsletter, we ask a member of the Census Community seven (or so) questions. This edition features an interview with Dr. Wes Tunnell, USNC vice-chair and Associate Director of the Harte Research Institute for Gulf of Mexico Studies.

Melissa Brodeur: How is the Harte Research Institute (HRI) for Gulf of Mexico Studies responding to the *Deepwater Horizon* oil spill?

Wes Tunnell: All of the HRI Endowed Chairs have responded to agencies, organizations, colleagues, and the media in their respective areas of expertise, from policy and law, socioeconomics, fisheries, biodiversity, mapping, and ecosystem studies. Although we did not hire the endowed chairs knowing about their expertise in the oil and gas industry and related to spills, their backgrounds and experience have been very helpful to many in an advisory capacity. Some will eventually become involved directly in research regarding the spill.

"[The Census] made strides measured in years that would have normally taken decades."

–Wes Tunnell

MB: Given the extent of the oil slicks and reports of underwater plumes, do you have any guess as to how long it could take the Gulf of Mexico to fully recover?

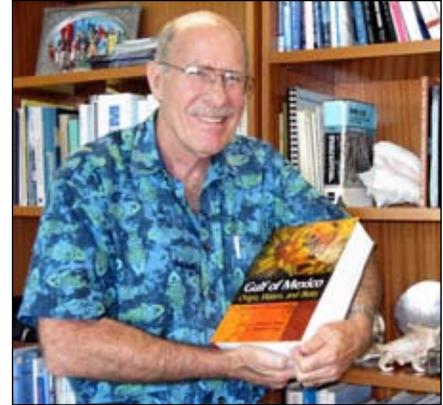
WT: The known impacts are those that have happened in many other spills over the past several decades. The fine grain, sandy beaches of the Texas coast rank three on the Environmental Sensitivity Index (ESI) scale of 1-10, with one being

least impacted and easiest to clean up and 10 being the most impacted and most difficult to clean up. Texas beach intertidal and shallow subtidal populations recovered within 2-3 years to pre-spill conditions. Salt marshes rank 10 on the ESI scale, so those of the Mississippi Delta will be greatly impacted and take much longer to recover, especially since you cannot clean them up once the oil reaches them. If you do try to clean them up, you will cause the oil to be pushed further down into the sediments and extend the recovery time even further.

The unknown impacts are the ones that concern scientists the most with this current spill. The impact from the use of dispersants at great depth and the formation of the underwater plumes are unknown factors that the science community has not dealt with before. We do not know what the impacts will be nor how long they will last.

MB: You recently led a massive international effort to document the marine life in the Gulf of Mexico (reported in the book *Gulf of Mexico Origin, Waters, and Biota, Volume I: Biodiversity*). What role, if any, do you think that data and research can play in the oil spill disaster?

WT: Since the publication of that book, we have converted the information into a database (thanks to the Sloan Foundation and NOAA), and we are currently making some mapping tools to go with that. We were able to provide



the scientific community with the known biodiversity of 8332 species from the northeast octant of the Gulf of Mexico where the spill is located. That number was further broken down by depth polygons to give more detail. Once the system is completed, it should be an excellent tool for management and scientific studies of the biodiversity of the Gulf.

MB: What function do you think the Census of Marine Life could perform in terms of the affected marine life?

WT: Knowledge gained by several projects can serve as a baseline of information before the spill (called pre-spill), so sampling protocols could be repeated to determine impacts or changes. A good example is the project by Gil Rowe, Bob Carney, and many others on the deep sea fauna of the northern Gulf, Continental Margin Ecosystems on a Worldwide Scale (COMARGE). It is a wonderful characterization that never would have been possible without Census, and now it can be used again to further study the impacts from the spill on those deep sea communities.

MB: On a different note, with the 10-year Census program concluding this year, do you have any specific fond memories or experiences with the Census that you would like to share?

(continued on next page)

Seven Questions continued...

WT: Other than all the great new biodiversity information gained and new science uncovered, there have been some incredible bonds developed around the world by scientists and institutions that have not worked together pre-Census. My new colleagues from Chile to Venezuela to France to New Zealand and more will definitely increase biodiversity studies and interactions for years, if not decades, to come.

projects that furthered science on biodiversity, and also the cooperation and collaboration by scientists worldwide. We made strides measured in years that would have normally taken decades.

The main weakness in my personal opinion is that we did not do a true census of marine life. With the World Registry of Marine Species and the Encyclopedia of Life, and some projects like the Biodiversity

and others have recently shown us pretty conclusively that it is important for us to know what lives in each Large Marine Ecosystem or ocean basin in order for us to do significant biogeographic analyses or comparative holistic studies of these large marine systems.

MB: After the Census 'Decade of Discovery' report is released in October this year, what do you think should be the next steps for the marine biodiversity research community?

WT: Besides consuming a few margaritas while kicked back on a tropical beach enjoying the local biodiversity, we should build upon what we have accomplished. We should continue the great collaborations and projects, as best possible, and we should get busy on those all-taxa inventories, so we will know what lives where in the oceans. ★

"The impact from the use of dispersants at great depth and the formation of the underwater plumes are unknown factors that the science community has not dealt with before."

–Wes Tunnell

MB: What do you think were the primary strengths and weaknesses of the program?

WT: The strengths were definitely the primary, worldwide, large

of the Gulf of Mexico Project, we are well on our way, but we did not do an "all-taxa inventory" like I would like to have seen accomplished. Mark Costello, Philippe Bouchet,

Census Scientific Steering Committee Meets in NYC



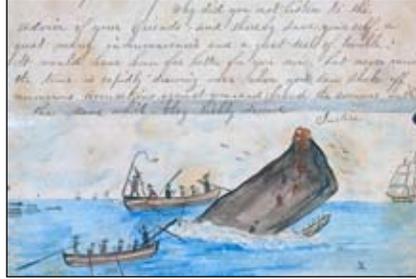
The Census of Marine Life held its latest Scientific Steering Committee (SSC) meeting in New York City June 2-4, 2010. The committee focused on a review of the soon-to-be published suite of products that will introduce the Census of Marine Life findings to the world. Additionally, partner organizations the Encyclopedia of Life (EOL) and the Scientific Council on Ocean Research (SCOR) updated the committee on their activities and explored ways in which Census could help the organizations achieve their goals. The SSC also presented the highlights of the Census and personal thoughts on their experiences in the program to the staff of the Alfred P. Sloan Foundation. This meeting was one of the final times the SSC was able to get together before the exciting 'Decade of Discovery' events in London, October 4-6, 2010.

Check out our Video Clip of the Quarter!

HMMap Featured in Whaling Documentary

www.pbs.org/wgbh/americanexperience/films/whaling/

The work of the Census History of Marine Animal Populations (HMMap) project was featured in the documentary film “Into the Deep: America, Whaling, and the World,” which aired on PBS stations in the U.S. on Monday, May 10, 2010. “Into the Deep” highlights the 300-year saga of the American whaling industry and the unique relationship between American whalers



and the giant creatures they hunted. The trailer and entire documentary (15 chapters) are available on the PBS web site at the link above. An interview with Dr. Tim Smith, Census and HMMap researcher, is also available at www.pbs.org/wgbh/americanexperience/features/interview/whaling-smith/.

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*For member’s biographies visit our website at: <http://coml.us/about/leadership/>.

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