

**Summary Notes**  
**Pacific States/British Columbia Oil Spill Task Force**  
**Oil Spill R&D Project Workgroup**  
**Conference Call 12/14/2010**

**PARTICIPATING:** Dianne Munson, Alaska Department of Environmental Conservation; Myola Martinez, Washington Department of Ecology; Don Pettit, Oregon Department of Environmental Quality; Judd Muskat and Joy Lavin-Jones, California Department of Fish and Game, Office of Spill Prevention and Response; Joe Mullin, Bureau of Ocean Energy Management, Regulation and Enforcement; Kurt Hansen, U.S. Coast Guard; Amy Merten, NOAA; Dr. Carl Brown and Patrick Lambert, Environment Canada; Curtis Martin, Hawaii Department of Health; David Gisclair, Louisiana Oil Spill Coordinator's Office; Richard Knudsen, Florida Fish and Wildlife Research Institute; Chuck Katz, Space and Naval Warfare Systems Center Pacific; Steve Lehman, NOAA SSC and Chair of the National Response Team's Science & Technology Committee; and Jean Cameron, Pacific States/British Columbia Oil Spill Task Force

**DISCUSSION:**

- Jean Cameron thanked everyone for participating and offering the member agencies of the Pacific States/British Columbia Oil Spill Task Force an opportunity to stay informed on oil spill research and development projects in both the U.S. and Canada. Judd Muskat, Project Chair, noted the value of knowing what others are doing in the field.
- After introductions, Judd led the call participants in reviewing the oil spill research and development projects which their agencies/organizations either have underway or are planning, as follows:

Judd Muskat, California Department of Fish and Game, Office of Spill Prevention and Response (OSPR)

- California has cut oil spill research program funding, so OSPR is only paying for projects already started. Planning is underway to begin some more limited research using in-house OSPR staff, with initial priority being placed on refining injury assessment techniques of oiled shorelines for NRDA purposes. OSPR's SSEP (Scientific Study and Evaluation Program) final reports are available at:  
<http://www.dfg.ca.gov/ospr/science/ssep.aspx>
- Judd's primary research project currently is a collaborative project with BOEMRE and Dr. Jan Svejksky, Ocean Imaging Corporation, on use of multi-spectral and thermal cameras to gather aerial information on oil slicks. This system was used for the Deepwater Horizon response, which was a good field test. The only problem was that the footprint of the imaging was too narrow in the Gulf with hundreds of square miles. They'll look at creating a wider field of view. They also plan to work on imaging oil emulsions to determine water content. Joe Mullin of BOEMRE reported that they had taken the imaging system to Cook Inlet, Alaska for an exercise and demonstration for the RRT. Boats were provided by the Cook Inlet Spill Prevention & Response, Inc. (CISPRI) and Alaska DEC also cooperated. Judd facilitated discussion of the images imported to the classroom ashore. Joe Mullin also reported that Judd Muskat and Craig Ogawa from the BOEMRE/Pacific Regional Office had received the U.S. Department of Interior's Cooperative Conservation Award for this project.
- Judd invited everyone to attend the OSPR/Chevron Technology Workshop on February 15-17, 2011 in San Ramon, CA. One day will be focused on dispersants and the remaining two days will focus on a variety of spill response technical issues, including SCAT software. Information on the OSPR/Chevron Technical Workshop is at: [http://www.dfg.ca.gov/ospr/public\\_meetings.aspx](http://www.dfg.ca.gov/ospr/public_meetings.aspx).
- He also noted that high frequency radar data is posted hourly on the web and can be used for GIS and GNOME applications. Following are the two CA sites that provide valuable HF Radar displays (as well as other marine data sets):
  - <http://www.cencoos.org/>
  - <http://www.sccoos.org/>

- Judd also provided the following link to a site managed by the Coastal Observing Research and Development Center at the Scripps Center of Oceanography that posts CA HF Radar hourly in shapefile and netCDF format: <ftp://sandbox.ucsd.edu/pub/DataRequests/CA-OSPR/>.
- OSPR is working on a database search tool to aid in identification of mystery oil samples. Earlier funding for this project under the SSEP program was cut, so the project is continuing in-house with no funding. A beta version of a search tool using Matlab has been developed to look for potential matches between mystery samples and >600 samples in a USGS database and >100 in a growing OSPR database. Samples are compared using 18 biomarker ratios identified by USGS. Preliminary results are promising, and the tool has helped link some mystery samples (tarballs and oiled birds) to particular natural seeps.
- OSPR continues to fund aerial surveys for marine birds and mammals at-sea, but funding has been cut for seabird colony surveys. Technology developed under these long-term projects was used in the Deepwater Horizon spill response, including use of dLog software to allow for real-time mapping of wildlife at risk, and use of digital photography and ImagePro software to count nesting and roosting waterbirds (primarily for NRDA).
- The Oiled Wildlife Care Network (funded under OSPR) continues to fund R&D and has an annual grant program for research to aid in oiled wildlife response. They are currently conducting a study tracking Western Grebes with implanted satellite tags (as a test for future post-release survival studies), and have funded various other projects including a study on the efficacy of using an infrared video camera to assess waterproofing of cleaned birds and mammals. They also are working with UPS (United Parcel Service) to develop hand-held units to help track oiled wildlife in care. The units will be able to print small bar code tags that will be attached to leg bands on birds; the units can then be used to scan the bar codes as the animals progress through various stages of cleaning and rehab.

#### Myola Martinez, Washington Department of Ecology

- Ecology has no current oil spill R&D projects, but their staff is involved in the Response Technology Workgroup of the NW Area Committee.
- They are also monitoring response technology Lessons-Learned from Deepwater Horizon spill.

#### Amy Merten, NOAA & CRRC

- Amy now leads the Spatial Data Team for NOAA's Office of Response and Restoration. She reported that NOAA's Environmental Response Management Application (ERMA), which is a web-based mapping platform, displayed data in a timely fashion during the Deepwater Horizon response. Data Management was a huge effort throughout the response, and continues. ERMA was used at all command posts providing real-time access to the Common Operational Picture, and was also used to provide information to the public, responding to more than 3 million "hits." Even Natural Resource Damage Assessment data - once validated - are published on ERMA. This will be an on-going effort. Those on the conference call who had participated in the Deepwater Horizon response were very complimentary. The public site for ERMA is <http://gomex.erma.noaa.gov/>
- Amy noted that there are a few West Coast ERMAs in the pipeline. An Arctic ERMA is the first priority; a workshop with Arctic stakeholders will be held in April 6-7, 2011 to begin that process. An ERMA for Puget Sound is also on the list, as is one for California.
- GRPs and planning information can be fed into ERMA for display. Richard Knudsen of the Florida Fish and Wildlife Research Institute stated that ERMA has greatly expanded the layers of data that can be collected and managed. His Area Contingency Plan information had been digitalized prior to Gulf spill, so it was readily incorporated into ERMA. Don Pettit of Oregon DEQ noted the difficulty of digitizing data in formats that are incompatible, so the group asked Amy if NOAA would establish standards for digitalizing cartographic and other data to be plugged into ERMA, should ERMA be brought to a response in our areas or when an ERMA is developed for our areas. She agreed to convene a conference call in January, 2011 to discuss GIS/ERMA standards and will also consider a workshop on this topic in conjunction with the International Oil Spill Conference in Portland, Oregon in May, 2011.

- Reporting for the Coastal Response Research Center (CRRC), Amy noted that the center's funding levels have remained the same since 2008 (i.e., no new funding). CRRC projects can be found at: <http://www.crrc.unh.edu/research.htm>. CRRC Projects still in process are:
  - [Guidance for Dispersant Decision Making: Potential for Impacts on Aquatic Biota](#) Dr. Deborah French McCay, Applied Science Associates, Inc.;
  - [Social Disruption from Oil Spills and Spill Response: Characterizing Effects, Vulnerabilities, and the Adequacy of Existing Data to Inform Decision-Making](#) Dr. Thomas Webler, and Dr. Seth Tuler, Social and Environmental Research Institute; and
  - [Investigation of Physical and Chemical Causes of Heavy Oil Submergence](#) Dr. Bruce P. Hollebhone, and Zhendi Wang, Environment Canada
  - Recently completed. [Development of a Predictive Bayesian Data-Derived Multi-Modal Gaussian Maximum-Likelihood Model of Sunken Oil Mass](#) Dr. James Englehardt, University of Miami.
- The CRRC project focused on modeling and tracking rates of biodegradation and transport of oil in ice is nearing completion. Several aspects of the multiple-PI have been completed.; see The oil-in-ice project repository is [http://www.crrc.unh.edu/arctic\\_response\\_issues/](http://www.crrc.unh.edu/arctic_response_issues/). Additionally, CRRC's April 2010 Arctic NRDA Workshop report is available at: [http://www.crrc.unh.edu/arctic\\_response\\_issues/](http://www.crrc.unh.edu/arctic_response_issues/).

#### Chuck Katz, Space and Naval Warfare Systems Center Pacific

- Chuck reported that the U.S. Navy recently analyzed their spill responders' needs in their operational areas, primarily bays and estuaries. They determined that improved trajectory modeling was needed, as well as data communications systems and technology to locate and track spills. Chuck sent this link to a "recent" document related to Navy R&D Investment into oil spill technology: <http://environ.spawar.navy.mil/Publications/pubs2.html> (Look for: Katz, Gauthier - 2007 Technical Document 3223).
- The Navy has begun to add hydrodynamic information to trajectory models like GNOME, starting with a project in Pearl Harbor.

#### Curtis Martin, Hawaii Department of Health (HDOH)

- Curtis reported that HDOH had worked with Brian Parscal of the Clean Islands Council to refine and improve the SMART protocol for testing the efficacy of dispersants; the new protocol was used in the Deepwater Horizon response. For more information, see Mr. Parscal's presentation on this topic at the Oil Spill Task Force's Annual Meeting (<http://oilspilltaskforce.org/2010conference/index.htm>).

#### Dr. Carl Brown and Patrick Lambert, Environment Canada

- Environment Canada's oil spill research is primarily focused on their database of oil and chemical properties, which includes oils from the Gulf of Mexico, Alaska and California. They're adding biofuels as well as fingerprinting products from the oil sands, including syncrudes and bitumen. Here's a link to the database: [http://www.etc-cte.ec.gc.ca/databases/OilProperties/oil\\_prop\\_e.html](http://www.etc-cte.ec.gc.ca/databases/OilProperties/oil_prop_e.html)
- Their lab supported the Deepwater Horizon response with information and analysis. They cooperated with BOEMRE to do modeling for dispersants applications and effectiveness in the Gulf of Mexico. They also worked with NOAA on the oil budget calculator for the spilled oil.
- They noted that the Canadian guidelines for dispersant use are being updated. Environment Canada is also following Deepwater Horizon Lessons Learned on a wide range of issues.
- Environment Canada is testing mechanical response methods for biofuel spills. They're also evaluating the eco-toxicity of biofuels as well as degradation properties. They've found that biofuel toxicity is similar to that of petroleum diesels.
- Their analysis of distinctions between petroleum and biological hydrocarbons should be useful for both spill response and site cleanup applications.
- They noted that they're working with CRRC on studies of submerged oils.

- Other research projects include the bio-availability of heavy oils and bio-remediated sites.
- Noting that three vessels grounded in the Canadian Arctic this summer, they reported that the Canadian federal government has allocated some funding for a Canadian Arctic Research Station in Nunavut; Environment Canada hopes to be involved.

Dianne Munson, Alaska Department of Environmental Conservation (ADEC)

- Diane provided the following list of past research projects and noted that ADEC's funding for oil spill R&D had expired in April of 2010.



Charter & PERP R&D  
Project List (2000- 20

- DEC is seeking funding to participate in the National Research Council project on oil in ice.
- Diane also reported that DEC will sponsor a conference on Pipeline Leak Detection in the fall of 2011.

Don Pettit, Oregon Department of Environmental Quality

- OR DEQ worked with Portland State University and the Oregon Health Division to develop OR-IRIS, the GIS based Oregon Incident Response Information System which provides information on natural, physical and jurisdictional settings and supports response to all hazards.
- After Judd reported that OSPR has a template for ACP maps and is also doing a pilot project to utilize Google Earth and Myola noted that Washington is converting their GRPs to ARC maps, Don identified the need for a standardized approach for cartographic data and products so they can work together. As noted under Amy Merten's report above, she agreed to take the lead on addressing this issue (see page 2). Judd also noted that the OSPR/Chevron workshop (see link on page 1) will include a GIS session focused on E-SCAT. Richard Knutson commented that mobile devices like those used for SCAT can also be useful for GRP applications.

Joe Mullin, Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE)

- Joe reviewed BOEMRE projects on dispersant research, chemical herders and use of chemical agents in pack ice, salt marshes, fresh water and open water environments.
- BOEMRE also has a project focused on the characteristics, behavior, and effective response techniques for spilled dielectric insulation oils in the marine environment. These oils could be used in wind turbines and electric substations offshore.
- BOEMRE is working with Environment Canada (EC) on a number of projects, as Dr. Brown noted above. BOEMRE has sent EC samples of ten oils from offshore wells in California and the Gulf of Mexico. In addition, Environment Canada is also the lead for a project validating models to predict the window of opportunity for dispersant use in the Gulf. BOEMRE is running various long-term fate and effect dispersant tests at OHMSETT while EC is running equivalent tests in their labs in order to compare small and large scale test results.
- Joe also noted that they're comparing the results of single large doses of dispersants with results of multiple low doses.
- He reported that he was unsuccessful in getting a permit to conduct an in-situ burn (ISB) at OHMSETT in order to study methods for recovering ISB residues.
- BOEMRE is working with various oil industry partners to use ground-penetrating radar to find oil in ice.
- Their R&D program is also focused on developing applications of the Multispectral Aerial Sensor for mapping oil thickness to the Arctic environment.
- BOEMRE is working with S.L. Ross to test chemical herders for biofuels.
- Joe noted that BOEMRE is studying how dispersants work on heavy oils and had results that differed from their hypothesis, so additional testing and review is underway to validate those results.
- The Department of Fisheries and Oceans Canada is the lead on a cooperative study on combining dispersants with fine minerals to treat oil spilled in low-energy, cold water environments. The hypothesis is that the fine

minerals (common components in drilling mud mixtures, so readily at hand on offshore platforms) would enhance the stability of the oil dispersion and reduce its toxicity.

- Joe sent the group the following list of the BOEMRE projects referenced above and their web links:



Research Projects  
Funded in 2009 and 2

- Looking ahead, Joe noted that additional divisions of BOEMRE are under consideration and it is not clear yet where the R&D program will be housed. He does not anticipate any change in their current funding levels, so there are a number of research proposals currently under review.
- Regarding OHMSETT, Joe noted that the tank has been retrofitted to handle wave energy projects; eight such projects are currently underway.
- He also noted the Wendy Schmidt Oil Cleanup X CHALLENGE, which is a \$1.4 million competition designed to inspire innovative solutions to cleaning up surface oil spilled from ocean platforms, tankers and other sources. The X CHALLENGE is a one-year competition that began on August 1, 2010 and will culminate in the summer of 2011, with competitive demonstrations taking place at Ohmsett. A \$1 million prize will be awarded to the team that demonstrates the ability to recover oil on the sea surface at the highest oil recovery rate (ORR) while maintaining a recovery efficiency rate (RE) of 70% or greater. For more information, see: [www.iprizecleanoceans.org](http://www.iprizecleanoceans.org).

#### Kurt Hansen, U.S. Coast Guard

- Kurt sent the group the following descriptions of current U.S. Coast Guard R&D projects:
  - **Recovery of Submerged Oil:** This is a continuation of a project started in 2006 to identify equipment and techniques that can detect and recover oil that is sitting on the bottom. The first phase resulted in a development of two techniques using sonar and underwater laser fluorometer for locating patches of bottom oil. Two of the systems evaluated are currently being used for the Deepwater Horizon Response; Coda Octopus sonar and a laser fluorometer from EIC. The development of recovery systems started with the award of three contracts in the fall of 2009 for the design development of complete systems. RDC is currently in the process of evaluating the designs and awarding 2-3 contracts to build prototypes and test at Ohmsett the fall of 2011.
  - **Response to Oil-in-Ice:** This project started in October 2009 to assess and then develop equipment and techniques to recovery oil in ice. Since industry has been funding a large amount of development, RDC has chosen to look at other opportunities to perform demonstrations or exercises in locations like the Great Lakes where icebreakers are stationed and logistics are easier than above the Arctic Circle. Workshops were held in Anchorage (April 23) and Cleveland (August 25) to gather experts and develop a list of potential exercises. A final white paper is being compiled with the objective of deploying some equipment in the Great Lakes during the next two winter seasons. In parallel, RDC will be monitoring industry's efforts through the American Petroleum Institute (API) which is starting up a multi- company large project in January, 2011. RDC budget is not completely set on this project.
- Kurt noted that the U.S. Coast Guard's R&D budget for FYI 2011 has not yet been determined.

#### Richard Knudsen, Florida Fish and Wildlife Research Institute (FWRI)

- Richard reported that he is updating the ESI Atlas for the Panhandle area of Florida. His group does GIS mapping for Georgia, the Florida Panhandle, and Mobile, Alabama. They plan to use GIS data for ESI areas to pre-set ICS forms.
- He's looking for techniques to add the locations of fish populations to maps; this would be useful in determining impacts from spills or dispersant use.
- Richard noted that they're using mobile devices to gather information on response staging areas.

- Another project is focused on gathering information on tides and currents for the tidal inlets along the Gulf coast; this information will be used to develop booming strategies that will then be added to Area Plans.
- He noted concerns with proposed oil drilling off of Cuba and likely impacts to Florida's coasts from any spills that could result.
- Richard explained that the Florida Institute of Oceanography is administering BP's R&D grants. Below is a list of research projects which they've recommended for funding:



FIO Selected  
Projects (2).xls

- Richard also sent this link to the projects that FWRI manages (FL ESI Atlases, Digital Area Contingency Plans (SE US - USCG funded), and the Florida Marine Spill Analysis System:  
[http://research.myfwc.com/features/category\\_sub.asp?id=7205](http://research.myfwc.com/features/category_sub.asp?id=7205)

#### David Gisclair, Louisiana Oil Spill Coordinator's Office (LOSCO)

- David reported that LOSCO funding has been cut 70%, so there's not much R&D underway at this time, nor has there been since 2008.
- He noted that Louisiana uses a spatial data format. The geospatial data organization documents are on the Louisiana Geographic Information Systems Council (LGISC) web site (<http://doa.louisiana.gov/lgisc/>). Four documents available on the home page as follows:

[http://lagic00.lsu.edu/LGISC/LSDI/20091112\\_LGISC\\_LSDI\\_Resolution.pdf](http://lagic00.lsu.edu/LGISC/LSDI/20091112_LGISC_LSDI_Resolution.pdf) (LGISC adoption of the LSDI)

[http://lagic00.lsu.edu/LGISC/LSDI/111309\\_lsdi\\_intro.pdf](http://lagic00.lsu.edu/LGISC/LSDI/111309_lsdi_intro.pdf) (major framework categorical descriptions)

[http://lagic00.lsu.edu/LGISC/LSDI/111209\\_lsdi\\_appendix1.pdf](http://lagic00.lsu.edu/LGISC/LSDI/111209_lsdi_appendix1.pdf) (framework organization details)

[http://lagic00.lsu.edu/LGISC/LSDI/111209\\_lsdi\\_appendix2.pdf](http://lagic00.lsu.edu/LGISC/LSDI/111209_lsdi_appendix2.pdf) (framework definitions)

Note, Appendix 1 is a compilation of FGDC, DHS, and LGISC geospatial framework categories. Using the organizational framework in Appendix 1, a list of the geospatial data sets compiled on the 2007 LA GIS DVD used in MC252 response is provided below as a "real world" geospatial framework implementation example:



la\_data\_list.xls

Also, see <http://lagic.lsu.edu/losocweb> and <http://atlas.lsu.edu> to search for additional GIS assets.

- He also noted the need for a common lexicon to coordinate response activities among various states, agencies, etc. (see Appendix 1 & la\_data\_list.xls above)
- David noted his concern regarding redundant research projects and suggested that federal agencies should "map" what's been done in and how it might be transferable to other projects or locations. He suggested that this should be a track at the upcoming IOSC.

#### Steve Lehman, NOAA SSC and Chair of the National Response Team's Science & Technology Committee

- Steve is a member of the Interagency Coordinating Committee for Oil Pollution Research (ICCOPR), which was created by OPA 90. The U.S. Coast Guard is working to revitalize ICCOPR, which has held several public meetings around the country this year seeking input on oil pollution research. (To see the Pacific States/British Columbia Oil Spill Task Force's 5/2010 statement to ICCOPR, please go to:  
[http://www.oilspilltaskforce.org/docs/comments/Statement\\_to\\_ICCOPR\\_May\\_2010.pdf](http://www.oilspilltaskforce.org/docs/comments/Statement_to_ICCOPR_May_2010.pdf)).
- In response to the issue raised by David Gisclair, Steve noted that eliminating redundant research efforts among U.S. federal agencies is one task identified in ICCOPR's charter.

- He reported that ICCOPR met last week and is updating their Charter as well as planning for future projects.
- Steve also noted that the National Response Team (NRT)'s Science and Technology Committee - which has been "dormant" for the last six months since everyone was tied up with the Deepwater Horizon response - will be looking at how to coordinate with ICCOPR as well as with Area Committees and RRTs.
- They plan to initiate a Response Research Clearinghouse web site that could be a nexus for oil spill researchers and funding.
- The S&T Committee has also discussed a "Science of Opportunity" database that would list new technologies – developed either by vendors or by researchers - that could be field-tested at spill responses under the direction of the NOAA Scientific Support Coordinators.
- He also noted that the NRT S&T Committee was considering an evaluation of the various command management software programs now available. Regarding the topic of competing software programs that don't integrate with one another, he noted that OSMOs (oil spill management organizations) rely on government data to populate their software, so we should all be working together to develop software standards.
- Steve reported that NOAA has funding for dispersant research that would help support RRT/Unified Command decision-making regarding dispersant use.

Dr. Buzz Martin, Oil Spill Prevention & Response, Texas General Land Office (TGLO)

- Dr. Martin had a conflict and was unable to join the conference call, but he provided the group with the following file describing TGLO's R&D projects:



TGLO\_R&D\_FY2010.  
PDF

- He also provided a weblink to an article in "Sea Technology" magazine on the TABS Responder Buoy (one of their R&D projects): [http://www.sea-technology.com/features/2010/1010/tabs\\_responder.php](http://www.sea-technology.com/features/2010/1010/tabs_responder.php)