

News from the Oil Spill Recovery Institute

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OSRI began several exciting new projects this summer. The first is funding research on the transport of oil through sea ice. The project is a portion of a much larger proposal to the Coastal Resource Recovery Center (CRRRC) in New Hampshire as a biological component to the Joint Industry Program examining oil spills in ice covered waters. The CRRRC funded project aims to understand the transport of oil through sea ice, the ability of micro-organisms to degrade the oil in ice, and combining the results in a model that will predict the exposure of organisms to different components of oil contained in ice.

OSRI has partnered with CRRRC on this program and is funding Hajo Eicken and Chris Petrich at the University of Alaska Fairbanks to model the flow through ice of the water-soluble compounds of oil. The team brings extensive experience with measuring and modeling properties of sea ice. Besides the modeling work, they will collaborate with Norwegian counterparts at SINTEF to set up appropriate laboratory tests to measure the transport of the water-soluble compounds.

The second new project is a socioeconomics project designed to examine the social disruption from oil spills and spill response. This project is also a collaboration with CRRRC. OSRI has been working to develop a socioeconomic research component, but has not been able to get a project funded on its own. When the CRRRC received a very highly rated socioeconomic proposal that fit the direction that OSRI was trying to go it led to a natural partnership between the two organizations.

The project is being led by Thomas Webler from the Social and Environmental Research Institute. It is designed to characterize effects, vulnerabilities, and the adequacy of existing data to inform decision-making in regard to social disruption from oil spills and spill response. OSRI's contribution covers the cost of adding Cordova, Alaska to their study sites. This provides a study site that has had a relatively long period for the effects to be fully realized. It also builds on the previous research done in relation to the Exxon Valdez oil spill.

A third project looks to build upon existing fish databases and habitat mapping efforts to examine the ability to use high-resolution habitat maps to predict fish associations. The project is led by Rob Bochenek at Axiom Consulting and Design.

It combines the herring data collected in Prince William Sound and Cook Inlet with the ShoreZone habitat mapping data to examine the habitats being utilized and to begin to tease out if certain habitats and areas lead to greater reproductive success for herring. This project is being funded by OSRI but is anticipated to be of use for the Exxon Valdez Oil Spill Trustees Council's upcoming herring restoration program.

Finally, the Oil Spill Recovery Institute joined together with Tesoro Maritime Company, Cook Inlet Spill Prevention and Response Inc., and Alaska Clean Seas to fund the test of a skimming system that utilizes a new oleophilic (oil loving) surface. The new surface, developed by CRUCIAL, INC., is made of a rough oleophilic material. The roughness of the material improves the skimmers capability to collect oil when compared to the traditional smooth oleophilic surfaces used in most systems. Another change to the system's the pumping system reduced the emulsification of the oil and water collected, which allows for more rapid separation of water from the oil collected.

CRUCIAL's system was tested at the national oil spill test tank facility, Ohmsett, in July 2008. Testing was conducted using the new ASTM testing protocols for skimmers and used Alaska North Slope Crude for the test material. A large disk skimmer with the new surface and other modifications was able to collect 387 gal per minute (gpm) of oil and had at an efficiency of eighty-three percent. Without the modifications the system would collect 130 gpm of the fresh crude oil. A whopping three-fold increase in the recovery rate with the new system.

While OSRI did not contribute to the development of this new technology, our ability to work with industry and oil spill response organizations to ensure the proper testing of new developments helps forward the ability to respond to oil spills.



Pictured is the Crucial skimmer being tested at the Ohmsett facility. Each disk on the skimmer has the new oleophilic surface applied. The splash guards have been removed allowing better visibility of the system.

Photo supplied by Eric Haugstad of Tesoro.

The full report on this article can be found at
http://pws-osri.org/programs/projects/annual_reports/2008/08-10-12.pdf