

Research Program Manager's Report, by W. Scott Pegau, Ph.D.

We are continuing to fund projects in accordance with the Science Plan and the Work Plan. I don't discuss all programs in the report, but focus on programs that had some changes in their design or are new to this year.

Understand

Observational Oceanography

The observational oceanography program placed two moorings in Hinchinbrook Entrance and Montague Strait in April and recovered them in September. The moorings are currently being refurbished with a planned deployment in October. Jennifer Ewald has been the oceanographer in charge of the program. She has decided to leave this winter and a replacement has been found. Mark Halverson is expected to start in January 2009 and pick up where Jennifer left off. Jennifer has been working to clearly identify the status of the different projects to make it easier for Mark to step in to the project.

The expected "Black Hole" mooring was not installed this year. There were issues with permits and equipment that kept it from being deployed with the other moorings. Rob Campbell has been working with a real-time mooring in Chenega Bay. It has been noted that there are issues with the conductivity data that may be related to grounding problems with older sensors. Data from this mooring is being transmitted through the Snotel system. The real-time moorings are expected to expand to two new locations in 2009.

OSRI provided most of the funding for the observational oceanography program; however, important financial contributions have also come from the Alaska Ocean Observing System (AOOS).

The PWSSC also had nine drifters refurbished for deployment as part of a model validation exercise planned for 2009. More details on the model validation program will be provided later.

Meteorological Stations

One additional SnoTel meteorological station was installed near Valdez in 2007. While permits have been received for two more sites a decision was made not to deploy additional sites due to the cost of deployment and maintenance. Existing sites are now starting to require more repair and the spare stations are being used for spare parts. OSRI has been funding the maintenance of the SnoTel stations in Prince William Sound with 7 of the 10 stations originally planned currently installed. Since some stations had not been installed the maintenance costs have been below the amount budgeted. With higher logistics costs associated with those stations we expect to fully expend the amount budgeted.

Data from these stations can be accessed from several locations. The NOAA weather service PWS roundup includes many of the sea level sites (<http://www.arh.noaa.gov/wmofcst.php?wmo= SXAK88PAVW&type=marine>). NOAA also uses the alpine sites for snow information on their river forecast page (http://aprfc.arh.noaa.gov/sd_pafc_sites.php). All stations can be accessed through NRCS (<http://www.wcc.nrcs.usda.gov/snotel/Alaska/alaska.html>). The web cameras can be found on the AOOS website (http://ak.aos.org/pws/web_cams.php).

Joint Programs with NPRB

NPRB and OSRI requested proposals for three areas, contaminant baseline studies, fish habitat association, and socioeconomic modeling. No qualified proposals were submitted for the contaminant baseline study. There were two proposals for the fish habitat association program. Neither were given enough support by OSRI or NPRB to justify funding the proposals as written. Because the STC gave this subject a high priority and funds were not being spent for collaborations with NPRB, OSRI requested that the reviewers revise their proposals addressing the reviewer comments and resubmit them for funding by OSRI alone. The revised proposals were then sent to two STC members for their comments and their recommendation to fund the proposal by Rob Bochenek was sent to the full STC for their approval to fund the project. There was a socioeconomic proposal that was selected for funding. However, the proposer had an indirect rate over 100%, which is the maximum allowed by NPRB. The proposer chose to withdraw their proposal rather than lower their indirect rate. An opportunity arose to contribute to a similar proposal that had been submitted to the Coastal Response Research Center. With the STC's agreement we contracted with the Social and Environmental Research Institute to add Cordova to their study sites. Their proposal to CRRC is titled, "Social disruption from oil spills and spill response; Characterizing effects, vulnerabilities, and the adequacy of existing data to inform decision-making". By contributing \$37K originally slated for work with NPRB we were able to add to a \$240K program funded by CRRC, greatly increasing the matching of our funds.

PWSSC Fellowships

Two fellowships were provided this past year. The first fellowship went to Mary Anne Bishop to develop new capabilities in deploying a mooring array as part of the Pacific Ocean Shelf Tracking (POST) network. The OSRI funds were used as non-federal match to allow the acquisition of equipment and provide a workshop on the acoustic technology. The DNR permit application for installing the receivers is provided for further information on the project.

The second fellowship went to Rob Campbell to hold a workshop to develop a plan to conduct a synthesis on the existing studies related to the ecology of Prince William Sound.

Modeling Projects

Funding for the Weather Research and Forecasting (WRF) model was originally planned to end in July 2008. Because of lack of funding for this important component in the Prince William Sound demonstration project, OSRI moved \$30K in FY08 from data management to continue support of the atmospheric modeling. The data management was redundant with other efforts and the atmospheric modeling was deemed critical to success of the demonstration project.

Model Validation Exercise

The culmination of the modeling work is to be a model validation exercise that was originally scheduled for 2007. AOOS is committed to conducting this exercise in the summer of 2009. A day-long meeting was held in January 2008 to review the status of efforts and begin the planning process for the exercise. Monthly planning meetings are now occurring with the lead modelers, OSRI staff, and AOOS staff. An analysis of the funding available from AOOS indicated there were insufficient funds to cover the cost of some critical components, such as atmospheric modeling and oceanographic observations, and the OSRI FY09 Work Plan requests funds to fill those gaps.

Respond

Joint Industry Program

OSRI contributed to the successful Joint Industry Program (JIP) Steering Committee meeting in Anchorage in October, 2007. The JIP has increased the number of exercises planned for the spring of 2008 to be better prepared for the 2009 experimental spill. Reports are being generated on the capabilities of different response strategies and equipment. These reports are extremely useful when trying to determine what types programs we might want to fund in the future.

OSRI's Work Plan includes funding for a joint request for proposals (RFP) with the Coastal Response Research Center (CRRC) for a biological program as part of the JIP exercise. A proposal was selected that included several components from different investigators. OSRI committed to funding a component of the proposal. OSRI is funding Dr. Hajo Eicken of UAF to work on transport of oil components through ice and to assist in the modeling component. The CRRC developed a RFP that highlights the potential for biodegradation of oil in ice. This program has not received strong support from OSRI's Scientific and Technical Committee. The total cost of this component was ~\$63K with \$45K from the FY08 budget and \$18K in the FY09 budget.

Joint Partnership Opportunities

We funded two projects in FY08. The first was with Prince William Sound Regional Citizens' Advisory Council on a project to update their dispersant bibliography (\$10K). This project has received support from the STC because of its value when developing RFPs in the future. The second was in partnership with Tesoro Marine, ACS, and CISPRI to conduct tests of a new skimmer surface material at the Ohmset facility. A report on the test results can be found on the OSRI website at http://pws-osri.org/programs/projects/annual_reports/2008/08-10-12.pdf.

Considerable effort was expended in trying to set up a demonstration project with a blimp based camera system attached to a boat. A set of specifications were developed and I worked with a company that had what appears to be the best system for the application to develop a quote so I would know what budget level was required. It took much too long to get the quote and once it was received it was over the \$20K we had set aside for the purpose. A quick check was made with a professor at UAA about a system they have that wouldn't meet the specifications we came up with, but would provide a good proof of concept. The proof of concept could be accomplished at a lower cost, but there was some discussion of the need for a full demonstration versus a proof of concept. In the end it was decided that it was too late in the fiscal year to get a project started and a recommendation was made to request that the \$20K unspent in FY08 be added to the FY09 work plan budget.

InnoCentive Challenges

We have completed a full cycle in the InnoCentive process. This has pointed out a few small differences between how I expected the process to work and the reality. Most of the differences have been that OSRI has had more control than I expected. We submitted three theoretical challenges to InnoCentive. The first to be completed was for means to break the viscous shear of oil at very low temperatures.

Three new theoretical challenges were developed and will be closing at the end of September. The three are for deicing response equipment, designing a boom system for use in ice environments, and an oil detection system for use in inclement weather.

I have been working with Lee Majors to determine what would be needed to test the breaking viscous shear solution that had been provided in the last round. A quote for developing a test plan was received (\$40K) and an estimate of building the equipment of \$12-20K. I still need to pursue arranging a test of the solution.

Education

Technology Scholarship

One of the Fellowships has been converted to an undergraduate scholarship offered through the Kenai Peninsula College. Brian Reith was awarded the scholarship in the spring of 2008 and completed one semester of school and a summer internship. Brian worked primarily with CISPRI doing a wide variety of tasks. He also spent two weeks on the North Slope with ACS also working on a variety of tasks. As part of the internship he wrote a report on icing of the rope mop skimmers and proposing a couple means to deice the equipment. Copies of the report are available on request.

Detecting Hydrocarbons in the Marine Environment

We collaborated with the Alliance for Coastal Technology to conduct a workshop on detecting hydrocarbons in the marine environment. The workshop was held in April 8-10 in Seward. The workshop brought together researchers, manufacturers, and resource managers to discuss the current sensor capabilities and future sensor needs. The workshop seemed to generate many good ideas, one of which was the blimp based remote sensing project. A final report has recently been completed and can be found on the ACT website and will be linked on the OSRI website.