NOAA/COTS Technical and Financial Semi-Annual Report

Period August 1, 2004 – January 31, 2005

Federal I.D. NAO4NOS4730304

The Gulf of Alaska Ecosystem Monitoring and Research Program:
Prince William Sound Observing System – 11.473

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Mid-year Report – February 15, 2005
Project Title: Enhancements to the Prince William Sound Ocean Observing System
Report Period: August 1, 2004 – January 31, 2005

Submitted by the Prince William Sound Science Center
To the Alaska Dept. of Fish & Game through EVOS Trustee Council
(for a grant awarded by the Coastal Services Center/NOAA)

Background – Project Goals

This project addresses infrastructure expansion plans for the Prince William Sound Ocean Observing System (PWSOOS) to:

1) deploy moored oceanographic buoys in Hinchinbrook and Montague Entrances to improve our understanding of the mechanisms and exchange rates of water between the Gulf of Alaska and the Sound
2) develop a real time data assimilation ROMS ocean circulation model to allow for a better understanding of the circulation patterns in PWS and water exchange mechanisms between the GOA and PWS to provide a solid scientific foundation for addressing fisheries and ecosystem management needs related to long-term oceanic and climatic variability.
3) improve the consistency and data quality from the existing array of meteorological sensors.

Additional enhancements are being leveraged against other funds to further upgrade the PWSOOS as follows:

4) deploy precipitation gauges in the surrounding watersheds,
5) develop a synoptic wave model to predict wave heights, nearshore currents, and wave-induced turbulence,
6) collaborate with the Alaska SeaLife Center on marine mammal investigations,
7) coordinate a workshop to discuss how an ocean observing system can be used to monitor biological organisms in real time, and which organisms should be monitored to fully utilize the power of real time instrument arrays.

Activities – August 1, 2004 – January 31, 2005

The contract providing authority to spend was executed on October 1, 2004.

I. Water exchange processes in Hinchinbrook Entrance and Montague Strait

The schedule originally proposed for deployment of oceanographic moorings across Hinchinbrook Entrance and Montague Strait was changed, primarily due to delays in the final contract award last fall. Equipment for the six oceanographic moorings was ordered in October and is expected to be received in late March or April. Preparations for the deployment – now scheduled for early June – are proceeding.

Expenses during this period

The only expense incurred during this report period ($11,003) was for equipment, three CTDs (Seabird Microcat or seacat) which samples temperature and salinity. The major equipment expense will occur on delivery of the acoustic Dopper current profilers in late March or April.

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II. Data assimilation modeling

Services of the Jet Propulsion Laboratory, University of California Los Angeles, have been secured through a contract with Raytheon Services Co. Totaling $150,000, the contract provides for the first year of a three-year project to develop a real time data assimilation model for PWS such as the Regional Ocean Model System (ROMS). Funds for the second and third years of this contract are secured in other grant awards. ROMS is a free-surface, hydrostatic, primitive equation ocean model that uses stretched, terrain-following coordinates in the vertical and orthogonal curvilinear coordinates in the horizontal. The contractors will work with modelers at the University of Alaska Fairbanks and, at the end of the three-year development period, plans are for the ROMS to be housed at the Alaska Supercomputing Center/UAF.

Expenses during this period

None.

III. Improving data consistency and quality control

Since this proposal was submitted in May 2004, plans have changed on the best and most cost-effective method available to address the need for improved consistency and quality of date from meteorological stations in PWS. The original proposal envisioned an upgrading of seven meteorological stations deployed in 2002 by the Oil Spill Recovery Institute (OSRI) through the use of Iridium Short Burst Data service and partnering with the Natural Resources Conservation Service for quality control screening and data dissemination via the Internet. Further investigations on the cost of the Iridium system and discussions with the NRCS have resulted in an agreement with NRCS for their installation of SNOTEL sites in nearly the same locations as six of the previous sites. Two of the stations will be installed at hatcheries (Esther Island and Chenega Bay) very near to the previous stations. This will improve access and reduce maintenance costs.

An agreement with NRCS was signed in January 2005 for installation of six meteorological stations in Prince William Sound and in the Copper River Delta region. The average cost per station is estimated at $11,050. OSRI and other partners are providing the balance of funds necessary for this project. Installation of the stations is planned in May or June 2005. The annual maintenance cost for each SNOTEL station ($2,500) will be provided by OSRI and other partners.

Expenses during this period

None.

Request for Approval of Revised Budget

We hereby request approval of the revised budget detailed on the attached spreadsheet and Budget Explanation page.