

**Data Management- McCammon/Bochenek (AOOS/Axiom, 15120114-D)**

<b>FY15 PROJECT PROPOSAL SUMMARY PAGE</b> <b>Continuing, Multi-Year Projects</b>					
<b>Project Title:</b> Data Management Support for the EVOSTC Long Term Monitoring Program					
<b>Project Period:</b> February 1, 2015 – January 31, 2016					
<b>Primary Investigator(s):</b> Rob Bochenek, Axiom Consulting & Design					
<b>Study Location:</b> EVOS Spill Affected Area					
<b>Project Website</b> (if applicable): <a href="http://www.gulfwatchalaska.org/">http://www.gulfwatchalaska.org/</a>					
<p><b>Abstract*:</b> This project supplies the EVOS Long Term Monitoring (LTM) effort with critical data management support to assist study teams in efficiently meeting their objectives and ensuring data produced or consolidated through the effort is organized, documented and available to be used by a wide array of technical and non-technical users. This effort leverages, coordinates and cost shares with several existing data management projects managed by the Alaska Ocean Observing System (AOOS) that are parallel in scope to the data management needs of the long term monitoring program. In the first two years, this project will focus on providing informatics support to streamline the transfer of information between various study teams and isolate and standardize historic data sets in the general spill affected area for use in retrospective analysis, synthesis and model development. These efforts continue into year three through five, but efforts will also begin to focus on developing management and outreach applications for the data and data products produced from the LTM program.</p>					
<b>Estimated Budget:</b>					
<b>EVOSTC Funding Requested*</b> (must include 9% GA):					
<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>TOTAL</b>
\$190.8	\$163.4	\$164.0	\$164.0	\$162.6	\$844.7
<b>Non-EVOSTC Funds to be used:</b>					
<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>TOTAL</b>
			698K		
<b>Date:</b> September 2, 2014					

## **I. EXECUTIVE SUMMARY**

As originally proposed, the objectives of this project are to 1) provide data management oversight and services for EVOS LTM project team data centric activities which include data structure optimization, metadata generation, and transfer of data between project teams; 2) consolidate, standardize and provide access to study area data sets that are critical for retrospective analysis, synthesis and model development; 3) develop tools for user groups to access, analyze and visualize information produced or processed by the LTM effort; and 4) integrate all data, metadata and information products produced from this effort into the AOOS data management system for long term storage and public use. Project investigators continue to provide core data management oversight and services for the Long-term Monitoring Program known as Gulf Watch Alaska. The focus continues to be on establishing – and implementing – protocols for data transfer, metadata requirements and salvage of historic data, both those data funded by the *Exxon Valdez* Oil Spill Trustee Council and ancillary historic data from other projects. Investigators meet with National Center for Ecological Analysis and Synthesis investigator Matt Jones to coordinate future activities. PIs have participated in regular PI meetings, including the in-person meeting in November 2013 and the January 2014 data meeting and are coordinating activities between the Herring and LTM programs. In addition, the AOOS Ocean Research Workspace, rolled out to PIs in Year 1, continues to be used as the internal staging area for PI data and work products, with individual PI user and group profiles created. Several training seminars have been held via webinars, and PIs are now using the system to organize and consolidate their project level data. Software engineers at Axiom are providing support for the Workspace, resolving bugs and implementing new functionality in response to user feedback. All 2012 data are now posted on the Workspace, per the Program Management data sharing protocols, with 2013 data now being posted. The Gulf Watch Alaska Data Portal was released in September 2013 as a key component of the Alaska Ocean Observing System’s Gulf of Alaska Ocean Data Explorer. The portal showcases Gulf Watch Alaska project data once it becomes public, alongside environmental data sets ingested by the project team.

Investigators have been involved in several exercises and meetings to optimize approaches to managing Gulf Watch data in more effective ways. Most notable of these activities occurred in January of 2014 during an EVOSTC sponsored Data Management Meeting. During that meeting, several recommendations were made which have spurred investigators to adapt their data management approach in support of the entire Gulf Watch program. Investigators have been modifying protocols defined in the Gulf Watch data management plan to address these issues.

## **II. COORDINATION AND COLLABORATION**

### **A. Within a EVOTC-Funded Program**

The Research Workspace technology being used for data management of the Gulf Watch Alaska program is designed to help facilitate the integration of datasets across disciplines and researchers within the Gulf Watch program. This technology is also being used by the EVOSTC-sponsored herring program. Teams and investigators are able to access each other’s datasets in a seamless fashion.

### **B. With Other EVOSTC-funded Projects**

The Research Workspace is also being used to organize and centralize data and electronic resources for historic EVOS funded projects. NCEAS and AOOS data management teams have been working together

over the span of the project to salvage and document as much information as possible for historic EVOS data that is in jeopardy of being lost to time.

### **C. With Trustee or Management Agencies**

In September 2013 the data management team released the Alaska Ocean Observing System's Gulf of Alaska (GOA) Data Portal, which integrates data and project information produced by Gulf Watch Alaska researchers with a large number of additional GIS, numerical modeling and remote sensing data resources. The team was able to leverage the AOOS Ocean Data Explorer portal which has been developed using other funding (primarily NOAA) and has these additional features: an integrated search catalog which allows users to search by category or key word, ability to preview data before downloading files, and advanced visualization tools. The platform provides open access to a large array of valuable scientific information that can be accessed and used by managers and scientists with Trustee Council agencies. AOOS data management has worked with several data consumers within USGS, NPS, BOEM and NOAA in accessing and using data contained within this data portal. The Research Workspace is also being used by the North Pacific Research Board's Gulf of Alaska Integrated Ecosystem Research Program. Historic data acquired through that program is also being provided to Gulf Watch Alaska PIs.

## **III. PROJECT DESIGN – PLAN FOR FY15**

### **A. Objectives for FY15**

- 1) Provide data management oversight and services for EVOS LTM project team data centric activities, which include data structure optimization, metadata generation, and transfer of data between project teams.
- 2) Consolidate, standardize and provide access to study area data sets that are critical for retrospective analysis, synthesis and model development.
- 3) Develop tools for user groups to access, analyze and visualize information produced or processed by the LTM effort.
- 4) Integrate all data, metadata and information products produced from this effort into the AOOS data management system for long-term storage and public use.

### **B. Changes to Project Design**

Small changes have been made to protocols within the Gulf Watch Alaska Data Management Plan to address concerns of the EVOSTC Science Panel and include clarification of QA/QC procedures and review of Standard Operating Procedures (SOPs) by the program's internal science advisory team.

## **IV. SCHEDULE**

### **A. Project Milestones for FY 15**

**Objective 1.** Provide data management oversight and services for EVOS LTM project team data centric activities, which include data structure optimization, metadata generation, and transfer of data between project teams.

*Assess and review year 4 data sets – To be met by September 2015*

**Objective 2.** Consolidate, standardize and provide access to study area data sets that are critical for retrospective analysis, synthesis and model development.

*Data ingested in year 3 will be available via data access tools – To be met by June 2015*

*Any additional historical data will be made available through the AOOS Gulf of Alaska portal - Ongoing*

**Objective 3.** Develop tools for user groups to access, analyze and visualize information produced or processed by the LTM effort

*New user tool platform (developed at 2014 PI meeting) released –  
To be met by June 2015*

**Objective 4.** Integrate all data, metadata and information products produced from this effort into the AOOS data management system for long-term storage and public use.

*This task is ongoing.*

## **B. Measurable Project Tasks for FY 15**

### **FY 15, 1st quarter (February 1, 2015 - April 31, 2015)**

*February EVOS synthesis workshop with Herring and Long-term monitoring programs*

*March Submit annual report*

*March Submit annual financial report*

### **FY 15, 2nd quarter (May 1, 2015-July 30, 2015)**

*May Participate in Herring Program annual PI meeting*

*July Submit Y5 work plan for review*

*June Release version 2 of user tool platform*

### **FY 15, 3rd quarter (August 1, 2015 – October 31, 2015)**

*September Oversee transfer of field year 4 data*

*October Assess year 4 datasets and metadata submitted through Ocean Workspace*

### **FY 15, 4th quarter (November 1, 2015- January 31, 2016)**

*January Annual Marine Science Symposium*

## **V. PROJECT PERSONNEL – CHANGES AND UPDATES**

None

## **VI. BUDGET**

### **A. Budget Forms (Attached)**

Please see included program workbook for budget forms.

### **B. Changes from Original Proposal**

No Change

### **C. Sources of Additional Funding**

AOOS brings a significant level of leveraged resources, infrastructure, regional data management projects and partnerships to this proposed effort. The data management effort for the LTM and herring projects could not be accomplished for the budgeted amount by a team without these leveraged resources.

1. AOOS – (540k to AOOS DM) Alaska oceanographic data management effort. Supports open source, standards based data system that serves up and archives real-time sensor feeds, models & remote sensing data, GIS data layers, and historical datasets. Data system developed on interoperability concepts and meets NOAA Integrated Ocean Observing System standards and protocols for streaming data feeds to national data assimilation centers. Data Management Committee chaired by Dr. Phil Mundy provides ongoing advice, prioritization and direction to the team at Axiom Consulting & Design. AOOS board is made up of federal and state agencies, and major marine research institutions in the state that have committed to data sharing. The AOOS board has committed to supporting a statewide data system for as long as AOOS exists.

Federal funding is stable, although we would like to see it increase. In the event AOOS was to end, all data and data products would be transferred to the University of Alaska.

2. NPRB GOAIERP – (80K) During this project year, NPRB will be providing funding to the AOOS data management team to support the Gulf of Alaska Integrated Ecosystem Research Program, which is performing research in the same area as Gulf Watch.
3. USFWS Seabird Data System – (\$50K) Project involves the creation and population of a series of new seabird metric databases (diet and productivity) and integrating these new databases with legacy seabird databases (species distribution and abundance at seabird colonies, pelagic species distribution and abundance, USGS seabird monitoring databases and NPRB's North Pacific Seabird Diet Database). Modern spatially explicit, web based data entry interfaces have and continue to be developed to assist researchers existing in distributed agencies to contribute their historic and current seabird metric data into standard data structures. Project will result in vastly increasing the amount and quality of seabird species distribution, diet and other seabird data available for use in retrospective analysis and management. Though data includes areas around all of Alaska, most available data is located in GOA and PWS.
4. AOOS – collaborator with Alaska Data Integration Working Group – an initiative with the Alaska Climate Change Executive Roundtable – to develop protocols for serving up project data to increase data sharing among federal and state agencies.
5. AOOS and NOAA – initiatives to develop data sharing agreements with private sector, including oil & gas companies.
6. Kenai Fish Habitat Partnership/Cook Inlet Regional Citizens Advisory Council (28K) – contract with Axiom to develop a data management system for their oceanographic and contaminants data in Cook Inlet.
7. NOAA – Project to Axiom to develop a Cook Inlet beluga sightings database.