Exxon Valdez Oil Spill Trustee Council

DRAFT Work Plan for Fiscal Year 2014

Issued September 19, 2013

Exxon Valdez Oil Spill Trustee Council
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FISCAL YEAR 2014

DRAFT WORK PLAN

Issued September 19, 2013

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Exxon Valdez Oil Spill Trustee Council

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Notice

The abstract of each proposal was written by the authors of the proposals to describe their projects. To the extent that the abstracts express opinions about the status of injured resources they do not represent the views of the Executive Director or other staff of the *Exxon Valdez* Oil Spill Trustee Council, nor do they reflect policies or positions of the Trustee Council.

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PLEASE COMMENT

You can help the Trustee Council by reviewing this draft work plan and letting us know your priorities for Fiscal Year 2014. You can comment by:

Mail:	Exxon Valdez Oil Spill Trustee Council 4210 University Drive Anchorage, AK 99508-4650 Attn: Draft Fiscal Year 2013 Work Plan
Telephone:	1-800-478-7745 Collect calls will be accepted from fishers and boaters who call through the marine operator.
Fax:	907-276-7178
E-mail:	elise.hsieh@alaska.gov

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Non-Program Proposals & Project Amendments

Project Number: **14120100**

Project Title: EVOS Administrative Budget

Primary Investigator(s): Elise Hsieh

PI Affiliation: N/A

Project Manager: N/A

Funding Received To Date:

FY12	FY13
$1,702,634	$2,025,279

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$1,358,479	$1,294,907	$1,241,483	$6,186,193.00

Requests include 9% GA

Abstract:

The budget structure is designed to provide a clearly identifiable allocation of the funds supporting Trustee Council activities. The program components are:

• Administration Management
• Data Management
• Science Management
• Public Advisory Committee (PAC)
• Habitat Protection Program
• Trustee Council Member Direct Expenses
• Liaison Program Support/Project Management
• Alaska Resources Library & Information Services (ARLIS)

The budget estimates detailed within those specified program components are projected based upon prior year actual expenditures and include the application of estimated merit step increases, as well as payroll benefits increases. Detailed budget component items are either “continuing” or “ongoing” from program directives already approved by the Trustee Council and cover necessary day-to-day operational costs of the Exxon Valdez Oil Spill Restoration Office and administrative costs associated with overseeing current Trustee Council program objectives.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Not Reviewed	Not Reviewed	Pending	Pending

Science Panel Comments

Date: September 2013

Not reviewed

Science Coordinator Comments

Date: September 2013

Not reviewed

Public Advisory Committee

Date: September 2013

Pending

Executive Director Comments

Date: September 2013

Not Reviewed

Trustee Council Comments

Date: October 2013

Pending

Project Number: **11100853 – Am.8.29.13**

Project Title: Pigeon Guillemot Restoration Research in Prince William Sound

Primary Investigator(s): David Irons

PI Affiliation: USFWS

Project Manager: USFWS

Funding Received To Date:

FY07	FY08	FY09	FY10	FY11	FY12
$317,000	$284,300	$48,400	$0	$281,000	$0

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	FY17	FY18	Total
$396,656	$391,206	$154,015	$139,968	$124,708	$1,206,551

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

This amendment to project 11100853, Pigeon Guillemot Restoration Research in Prince William Sound, Alaska, provides an opportunity to restore the population of Pigeon Guillemots (*Cepphus columba)* in Prince William Sound, Alaska, which has fallen by more than 90% at the Naked Island Group since 1989. A restoration plan for Pigeon Guillemots in PWS was prepared to address the species' lack of population recovery following injury by the 1989 Exxon Valdez oil spill. Predation on nests and adults by mink is now the primary limiting factor for guillemot reproductive success and population recovery at the most important historical nesting site for guillemots in PWS (i.e., the Naked Island group). Mink on the Naked Island group are descended in part from fur farm stock and apparently arrived on the island group during the 1980s. Control of predatory mink at these islands was selected as the preferred restoration alternative because it is feasible and most likely to result in the recovery of guillemots in PWS. Other alternatives are either currently unavailable or unlikely to be effective. A control effort is likely to be successful but if it is not then the agencies would discuss alternatives, one of which would be to amend the EA and remove the remaining mink from the islands. Potential negative effects of the preferred alternative are either negligible or largely avoidable. The Naked Island group guillemot population would likely increase five-fold within the first 10 years following mink control, and the Sound-wide population of guillemots would likely increase within 15 years of mink control at the Naked Island group, once the Naked Island group had become a source population for other parts of PWS.

Phase I : Completion of the NEPA process for the proposed action. (Completed)
Phase II: Control of predatory mink on the Naked Island Group, PWS Alaska

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Not reviewed

Science Coordinator Comments – FY14

Date: September 2013

Not reviewed

Public Advisory Committee – FY14

Date: September 2013

Pending

Executive Director Comments – FY14

Date: September 2013

Not Reviewed

Trustee Council Comments – FY14

Date: October 2013

Pending

Science Panel Comments – FY12

Date: June 2011

This proposal has been previously submitted to the EVOS Trustee Council and reviewed by the Science Panel. Support for the work was strong among the Science Panel members. One concern that arose pertained to the question of whether the mink found today on Naked and nearby Islands in the Naked group are descendants of the animals introduced artificially or whether these are fully native mink with an intact natural genome. That question has now been answered with DNA analysis revealing a mixed genome, not reflecting a pure native stock. This answer would appear to satisfy the question of whether these mink are natural (no) and to allow the extermination to move forward, if supportable scientifically by the Science Panel and Trustee staff and if politically and financially acceptable to the Trustee Council.

Here we will provide a review of the adequacy of the science. First, it is noteworthy that PIGUs are the only bird species still listed as Not Recovering after EVOS. Second, the importance of Naked Island and its potential recovery to this species is evident – the Naked Island group held about 25% of the PIGU population in PWS prior to the spill despite representing only 2 % of the PWS shoreline. Third, the inference that mink represent the impediment to PIGU recovery on Naked is strong, based especially on comparison Smith Island where mink are absent and PIGU survival is good. Fourth, the contention that strong recovery of PIGUs on Naked would lead to spread and re-colonization of other suitable sites in PWS is a reasonable expectation, so restoration on Naked pays a wider dividend of recovery elsewhere in PWS. Fifth, we know that the introduced foxes are now gone from Naked so that isn't the problem. Sixth, the alternatives analysis is compelling in showing that no other restoration option would work and that eradication is the only solution. For example, providing more of the now reduced lipid-rich prey would be useless, resulting in feeding mink better not in enhancing PIGU survival and abundance. Culling would be a half-step and require costly intervention forever, and thus can be rejected as a viable restoration option. Seventh, elimination of predatory mammals on islands is a well-established practice to enhance ground-nesting seabirds and other birds. Consequently, this proposal makes good sense scientifically and addresses an ongoing restoration failure of importance. The only questions involve the costs and the potential use of dogs, if trapping fails to get every last mink in the eradication process. The costs are 2.4 Million or 1.3 Million if a National Wildlife Foundation match is obtained. We concur that these cost estimates are reasonable because a 3-5 year time frame is needed to complete the removal. So while high, the expenditures are likely justified. The use of dogs in the removal of mink seems to possibly conflict with animal rights as an unacceptably cruel practice.

Science Coordinator Comments – FY12

Date: June 2011

This proposal is scientifically compelling and builds on four years of work focused on this topic. While the idea of a direct restoration project is appealing, I am concerned that the total project cost is very high in relation to the total number of nests that they project will be added to the island complex.

Public Advisory Committee Comments – FY12

Date: June 2011

Nor reviewed.

Executive Director Comments – FY12

Date: June 2011

I do not have a recommendation for this project. The project is very compelling because it potentially provides active restoration for an injured species. However, the high cost and speculation regarding the longterm outcome needs to be weighed carefully by the Council.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	No consensus	Not Reviewed	No consensus

Science Panel Comments – FY07

Date: Fall 2006

This proposal investigates the efficacy of direct restoration techniques for the pigeon guillemot population in PWS. They will genetically sample mink that reside on Naked Island Archipelago to determine if the population was introduced or native and make recommendations for a recovery plan for pigeon guillemots based on the findings. Pigeon guillemots are one of two non-recovered species and this project represents one of the few restoration based proposals that have been submitted. The genetic sampling of mink and studies examining the relative contribution of mink vs. other predators to pigeon guillemot survival and reproduction are important in evaluating mink removals as a potential restoration activity. However, there is some concern that removal of mink may not be an appropriate restoration activity if the mink are in fact native. Also, food limitation studies may be difficult to interpret with respect to restoration and are perhaps premature. Mink removal may still prove an effective restoration tool even if food quality is poor. Furthermore, given the likely annual variation in food supply, a lack of food in one year may not be a reasonable predictor of future food limitation. We recommend funding the initial year of this proposal and suggest that efforts be made to provide genetic evidence on mink at the end of that year so that reasoned decisions can be made regarding future funding

Science Coordinator Comments – FY07

Date: Fall 2006

The Science Director is on a long-term detail from the FWS and must therefore, recuse herself from making recommendations on FWS proposals. The PI on this proposal is employed by the FWS.

Public Advisory Committee – FY07

Date:

Not Reviewed.

Executive Director Comments – FY07

Date: April 2011

Salaries and logistics are the major expenses of this proposal. Assuming mink predation on pigeon guillemots, any direct restoration will likely involve controlling the mink population on Naked Island. Before this can be undertaken a determination must be made whether the mink population is indigenous or introduced. Therefore, I only recommend funding the minimum mink capture and genetic testing program necessary to determine where

the population is indigenous or introduced. I further recommend local trappers and logistics be utilized in this effort to reduce expense.

FY07 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
Fall 2006	Fund reduced	Not reviewed	Not reviewed	Fund reduced

Long-Term Monitoring of Marine Conditions and Injured Resources and Services Program Projects

Project Number: **14120114**

Project Title: GulfWatch Alaska Program (Long-Term Monitoring Program)

Primary Investigator(s): Molly McCammon

PI Affiliation: AOOS

Project Manager: NOAA, ADFG, USFWS, USGS

Funding Received To Date:

FY12	FY13
$2,904,600	$2,675,800

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$3,141,600*	$2,656,600*	$2,405,000*	$13,783,500

Requests include 9% GA
**Includes additional funds requested for 14140114-Q Lingering oil and a FY shift of funds from FY14 to FY15 for lingering oil 14140114-S*

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

The goal of the Long-term Monitoring (LTM) program, now known as Gulf Watch Alaska, is to provide sound scientific data and products that inform management agencies and the public of changes in the environment and the impacts of these changes on Exxon Valdez oil spill (EVOS) injured resources and services. The five-year program includes: 1) four monitoring components (environmental drivers, benthic, pelagic, lingering oil); 2) data management services; 3) integrated syntheses of data; 4) historic data recovery and syntheses; and 5) science outreach.

The program has six primary objectives:
1. Sustain and build upon existing time series in the EVOS-affected regions of the Gulf of Alaska.
2. Provide scientific data, data products and outreach to management agencies and a wide variety of users.
3. Develop improved monitoring for certain species and ecosystems.
4. Develop science synthesis products to assist management actions, inform the public and guide monitoring priorities for the next 20 years.
5. Enhance connections between the Gulf Watch Alaska and Herring Research and Monitoring (HRM) programs.
6. Leverage partnerships with outside agencies and groups to integrate data from broader efforts.

Some highlights from our progress in year 2 of the program include:
a) Successful completion of annual field data collection and reporting for all monitoring projects under the program.
b) Published 70 (19%) of the 370 historical, EVOS-funded data sets, with an additional 26 in process of publication.
c) Refined sampling protocol to improve sampling efficiency for forage fish data collection in Prince William Sound.
d) Website featuring program news and summaries and access to the program data portal.
e) Cross specialty communication and participation with shared vessel time and staff time between projects and programs.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011 – Individual Panel Member Comments

Individual Comment 1:

Seabird monitoring costs double in year 3 – The explanation is clear, although the basis for why two surveys may be needed in year 3 and what is lost when only 1 is done is unclear. Cost breakdown for Coordination, data management, outreach, and administration – The suite of activities included under this heading is now explicit as are the total costs associated with each one in the budgets provided. I wish to
note, however, the "conceptual modeling" project of Hollmen does not fall into any of these categories – it is a scientific study, not an administrative service, outreach activity, coordination, or data management task, and should be reviewed as such. In that context, I examined the Hollmen proposal and have some concerns. Although intended to be "conceptual modeling", I find no mention of any concepts in the proposal. I cannot find

indication of the methodological approaches to be used and why they were chosen. For example, will this be a Bayesian process? Will modeling be ecosystem based? Will ECOPATH of something analogous be employed? There are no literature cotations in this proposal. For 395K over 5 years, more detail would seem to be called for. I cannot find a CV included for the PI, Hollmen. Does she have modeling experience, and, if so, in what types of models?

Synthesis concerns – the PIs provide a thoughtful and compelling response to this issue, providing an excellent overview and demonstrating potential for meaningful syntheses.

Data management – The PIs make a strong case for the cost efficiencies associated with leveraging that lower the costs of the data management for EVOS Trustee projects by joining with AOOS in a coordinated effort with a single consultant-provider. The response also makes a justifiable case for why teaming up with AOOS makes sense – because of their presumed permanence as compared to other science programs. I am impressed that Phil Mundy chairs the AOOS external advisory committee and concur that he has the experience and wisdom to provide rational advice and guidance. Nevertheless, the bottom line after all is said and done is – Does Axiom deliver the data products that are acceptable to the scientists it is serving. This response document appears to argue that the scientists that participate in the Monitoring Program are indeed satisfied. So that helps me side with continuing the relationship with Axiom. Nevertheless, this document implies a willingness to interact with NCEAS and to discuss their recommendations for improvements in all aspects of Axiom's data management services and I think that facilitating that set of interactions in a meaningful way (meaning to sufficient depth and not just superficial) is important for piece-of-mind given delays in delivery of reports from Axiom on past EVOS Trustee contracts. I am also curious to know of the outstanding final reports have indeed been completed successfully at this time. I see argued in this response document that the past scientist clients of AXIOM are satisfied with the company's services, which addresses one major issue raised by the science Panel.

I am pleased by the acceptance of specific suggestions by the science panel.

Date: April 2011

This proposal is well presented and provides a thorough long-term monitoring program for the spill area. The team is experienced and well -qualified to complete the proposed work. The outreach and education strategies and partnerships are well thought-out and have the potential to provide effective means to disseminate information and engage community members in understanding the results of the integrated monitoring program. The potential future development of a citizen monitoring program would provide another effective strategy. The Science Panel was especially impressed with the section called 'cross-cutting' that showed the linkages with the Herring Program. Gathering and making data available will be the keystone of this program. The Science Panel expressed serious concerns about past performance of some participants and that the data management team does not have sufficient expertise or scientific guidance to deliver a useable data system. In addition, it is not clear at all there is a plan for the inclusion of structurally diverse data: where and how will such data be organized so that relevant data and metadata from a broad array of disciplines can be assembled in one database. The panel viewed this as this as an informatics problem that, if not resolved at the onset, will jeopardize the long-term program. There is a very clear need to overcome critical technological impediments to accomplishing synthetic, integrative environmental science, while at the same time promoting more open access to information and data sharing. It is critical that this database be open source and be compliant with the Knowledge Network for Biocomplexity metadata compliant with Ecological Metadata Language. In addition, there should be a plan from the outset as to how to incorporate this data into NPRB's GOAIERP program at the end of the first five-year contract cycle.

Therefore, we strongly recommend that the Council provide assistance from an organization such as the National Center for Ecological Analysis and Synthesis (NCEAS) for peer review and technical assistance to the data management team. With regard to the separate lingering oil monitoring proposal included within the Program proposal, the Panel has no objection to the funding of this additional project.

Science Coordinator Comments – FY12

Date: April 2011

I agree with the science panel and Executive Director. I also have serious concerns regarding the data program and would encourage the Council to assist the team by providing funding for a collaborator to assist the data team in their development of the data program. My concerns regarding the proposed contractor are based on a poor past performance with meeting deadlines and producing deliverables. I also believe that the final product would greatly benefit if Axiom was given assistance from a group that has experience working with large heterogeneous data sets.

The PI's that are included in this program proposal have extensive experience gathering data in PWS and have contributed to several long-term data sets that will be the foundation of this program. The team's quick response to our data set questions demonstrates their ability to work together and to openly share information with their fellow researchers.

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

There has been strong concern about the program's data manager serving the entire program. Since April, the data manager's work has been favorably reviewed, has submitted late deliverables to the Council and several data management options have been produced by this program and outside entities. These options presented are in conjunction with leaders in the field of heterogeneous scientific database management and are excellent options. I recommend the Council pursue one of these options to ensure successful management of the data produced by this and past Council-funded efforts.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund
April 2011	Fund	Fund	No Consensus	Fund

Project Number: **14120114-A**

Project Title: GulfWatch Alaska Program - Continuous Plankton Recorders

Primary Investigator(s): Sonia Batten

PI Affiliation: Sir Alister Hardy Foundation for Ocean Science

Project Manager: NOAA

Funding Received To Date:

FY02-FY11	FY12	FY13
	$	$

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. Many important species, including herring, forage outside of Prince William Sound for at least some of their life history (salmon, birds and marine mammals for example) so an understanding of the productivity of these shelf and offshore areas is important to understanding and predicting fluctuations in resource abundance. The Continuous Plankton Recorder (CPR) has sampled a continuous transect extending from the inner part of Cook Inlet, onto the open continental shelf and across the shelf break into the open Gulf of Alaska monthly through spring and summer since 2004. There are also data from 2000-2003 from a previous transect. The current transect intersects with the outer part of the Seward Line and provides complementary large scale data to compare with the more local, finer scale plankton sampling on the shelf and in PWS. We propose to continue sampling this transect through 2016. Resulting data will enable us to identify where the incidences of high or low plankton are, which components of the community are influenced, and whether the whole region is responding in a similar way to meteorological variability. Evidence from CPR sampling over the past decade suggests that the regions are not synchronous in their response to ocean climate forcing. The data can also be used to try to explain how the interannual variation in ocean food sources creates interannual variability in PWS zooplankton, and when changes in ocean zooplankton are to be seen inside PWS. The CPR survey is a cost-effective, ship-of-opportunity based sampling program supported in the past by the EVOS TC that includes local involvement and has a proven track record.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

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Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011 – Individual Panel Member Comments

No comments available.

Date: April 2011

No comments available.

Science Coordinator Comments – FY12

Date: April 2011

No comments available.

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund
April 2011	Fund	Fund	No Consensus	Fund

Project Number: **14120114-B**

Project Title: GulfWatch Alaska Program - Administration, Science Review Panel and PI Meeting Logistics, and Outreach and Community Involvement

Primary Investigator(s): Katrina Hoffman

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$263,300	$274,700

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$298,600	$293,400	$288,100	$1,418,200

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of Gulf Watch Alaska (GWA), the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services program submitted by McCammon et al. To meet Gulf Watch Alaska's long-term restoration monitoring goal, this 5-year long-term monitoring program will:

1. Implement the guidance of Trustee Council planning efforts;
2. Sustain and build upon existing time series;
3. Enhance collaborations between principal investigator projects in the proposed monitoring program and with the proposed Herring Program;
4. Leverage partnerships with outside agencies and groups to integrate data from a broader monitoring effort than that funded by the Trustee Council;
5. Provide data and scientifically-based data products to a wide variety of users; and
6. Develop science synthesis products to assist management actions, inform the public and guide the evolution of monitoring priorities for the next 20 years.

This project addresses administration and fiscal management of the program. To achieve that, the Prince William Sound Science Center is serving as the administrative lead and fiscal agent responsible for: managing award contracts for all non-Trustee Agency projects within the program; ensuring the program and projects adhere to all reporting policies, practices and timelines; serving as a liaison between the program and EVOSTC staff; coordinating travel and logistics for principal investigator annual meetings; coordinating travel and logistics for outreach efforts; participating in an annual audit; and providing administrative support to the outreach and community involvement component of the GWA program. The Outreach and Community Involvement component is coordinated by the Alaska Ocean Observing System. See McCammon's program project proposal form for details.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund
April 2011	Fund	Fund	No Consensus	Fund

Project Number: **14120114-C**

Project Title: GulfWatch Alaska Program - Seabird Abundance in Fall and Winter

Primary Investigator(s): Mary Anne Bishop

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$51,700	$78,600

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$80,900	$83,400	$86,300	$380,900

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Gulfwatch Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et.al. The vast majority of seabird monitoring in areas affected by the Exxon Valdez oil spill has taken place around breeding colonies during the reproductive season, a time when food is generally at its most plentiful. However, late fall through winter are critical periods for survival as food tends to be relatively scarce or inaccessible, the climate more extreme, light levels reduced, day length shorter and water temperatures colder. Of the seabirds that overwinter in PWS, nine species were initially injured by the Exxon Valdez oil spill, including three species that have not yet recovered (marbled murrelet, Kittlitz's murrelet and pigeon guillemot). Here we propose to continue to monitor from 2012 through 2016 seabird abundance, species composition, and habitat associations using multiple surveys (up to 5 surveys per season) during late fall and winter. The data will improve our predictive models of seabird species abundance and distribution in relation to biological and physical environmental factors. In addition, by monitoring the top-down forcing by seabirds, a major source of herring predation, this project will complement the suite of PWS HRM studies, including improved mortality estimates for herring population models. This project is part of the pelagic component within the integrated Gulfwatch LTM program submitted by McCammon et. al. Our project uses as observing platforms the vessels associated with the LTM Humpback Whale surveys and PWS HRM Juvenile Herring Abundance Index as well as the Extended Adult Herring Biomass Surveys and integrates the seabird observations with those studies.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund
April 2011	Fund	Fund	No Consensus	Fund

Project Number: **14120114-D**

Project Title: GulfWatch Alaska Program – Data Management

Primary Investigator(s): Rob Bochenek

PI Affiliation: Axiom Consulting and Design

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$163,500	$163,400

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$164,000	$164,000	$162,600	$817,400

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

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 utilized by a wide array of technical and non technical users. This effort leverages, coordinates and cost shares with a series of existing data management projects which are parallel in scope to the data management needs of the long term monitoring program. In the first two years, this project would 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 would continue into year three through five but efforts would also focus on developing management and outreach applications for the data and data products produced from the LTM program.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14
Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

Please refer to comments which can be found under 12120114 - McCammon and 1210120 - Jones.

Science Coordinator Comments – FY12

Date: June 2011

Please refer to comments which can be found under 12120114 - McCammon and 1210120 - Jones.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

Please refer to comments which can be found under 12120114 - McCammon and 1210120 - Jones.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Modify	Modify	Not reviewed	Modify

Project Number: **14120114-E**

Project Title: GulfWatch Alaska Program – Long term monitoring of oceanographic conditions in Prince William Sound

Primary Investigator(s): Robert Campbell

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$238,100	$193,200

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$197,300	$203,700	$209,300	$1,041,600

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. This project is intended to provide physical and biological measurements that may be used to assess bottom-up impacts on the marine ecosystems of Prince William Sound. Specifically, it is proposed to deploy an autonomous profiling mooring in central Prince William Sound that will provide high frequency (~daily) depth-specific measurements of physical (temperature, salinity, turbidity), biogeochemical (nitrate, phosphate and silicate) and biological (Chlorophyll-a concentration) parameters that will be telemetered out in near real-time. Several regular vessel surveys are also proposed to provide ground-truth data for the mooring, and to attempt to capture some of the spatial variability in PWS. As well as the mooring site, the surveys will visit all four of the SEA bays to maintain ongoing EVOSTC funded time series measurements at those sites and to support proposed herring research (Pegau et. al). The major entrances (Hinchinbrook Entrance and Montague Strait) will also be visited. The surveys will make the same suite of measurements as the mooring, and will also collect water and plankton samples. This project will also link significantly with the herring research efforts proposed by Pegau et al., and will analyze plankton samples collected during intensive studies of juvenile herring feeding and energetics.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-G**

Project Title: GulfWatch Alaska Program – Long-term monitoring of oceanographic conditions in Cook Inlet/Kachemak Bay to understand recovery and restoration of injured near-shore species

Primary Investigator(s): Angela Doroff

PI Affiliation: ADFG

Project Manager: ADFG

Funding Received To Date:

FY12	FY13
$191,900	$177,400

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$166,500	$133,700	$108,800	$778,200

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is designed to assist in the evaluation of recovery and restoration of injured resources in the foot print of the Exxon Valdez oil spill (EVOS). It is important to know if oceanic conditions and changes in the Gulf of Alaska are synchronous with near-shore trends, and monitoring at multiple sites will help discern such relationships. Mapping currents and water mass movements of a region contributes to our understanding of patterns in the abundance and diversity of marine plankton, invertebrates, fish, birds, and mammals in coastal Alaska. The complex structure of fronts where water masses meet and the patterns associated with the movement of water masses are still not understood for lower Cook Inlet. In this study, we will be mapping the waters in lower Cook Inlet and Kachemak Bay to understand the intrusions of the Alaska Coastal Current and to identify spatial and temporal changes of various other currents in this region and relate these observations to injured resources. Developing an understanding of the structure of the physical oceanography will help us understand the connectivity of water movement and potential plankton transport between lower Cook Inlet and Kachemak Bay. By determining the local species of phytoplankton and zooplankton and understanding their seasonal distribution we will begin to understand the biological patterns associated with upper trophic levels of the nearshore marine system. Information from this project will also be useful to local mariculture operations, subsistence harvesters of hard shell clams and other invertebrates, NOAA Regional Ocean Circulation Model development, and monitoring programs for harmful algal blooms.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-H**

Project Title: GulfWatch Alaska Program – Science Coordination and Synthesis

Primary Investigator(s): Kris Holderied

PI Affiliation: NOAA

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$123,500	$139,000

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$148,300	$146,100	$151,600	$708,500

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is part of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et al. Long-term monitoring has been implemented within the Exxon Valdez Oil Spill (EVOS)-affected region under a variety of organizations and programs. However, many of these efforts have been conducted independently, with emphasis on monitoring of single species or within individual disciplines. By explicitly providing for science coordination and syntheses of data from our long-term monitoring program, as well as incorporating an interdisciplinary framework into program development and implementation, we seek to improve open access to multi-disciplinary data and promote use of integrated information from the entire program for both research and resource management in the EVOS-affected region. The science coordination and synthesis component of our integrated program improves linkages between monitoring in different regions as well within a given region, as a way to better discern the impacts of environmental change on restoration and continued recovery of injured resources. Science coordination includes facilitating program planning and sharing of information between principal investigators, developing annual reports on the science program, and coordinating ongoing evaluation of the overall program. Science synthesis efforts helps integrate information across the entire program and is closely coordinated with the conceptual ecological modeling and data management teams in our integrated program.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-I**

Project Title: GulfWatch Alaska Program – Conceptual Ecological Modeling

Primary Investigator(s): Tuula Hollmen

PI Affiliation: Alaska SeaLife Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$83,100	$91,900

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$95,600	$78,600	$81,900	$431,000

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. Under this research project, we will develop conceptual ecological models to support the synthesis and planning relating to the long term monitoring program in Prince William Sound, outer Kenai coast, and lower Cook Inlet/Kachemak Bay. To develop these models, we will summarize system components, processes, and influences into a synthetic framework. The conceptual models will assist in identification of data needs and development of further long term monitoring priorities, and support ecosystem based understanding, monitoring, and management of resources within our study area. The conceptual models will also provide guidance for development of numerical and quantitative models of system function and responses to external influences. Finally, the conceptual models will provide a communication tool among scientists, resource managers, policy-makers, and the general public, and will offer outreach opportunities for our project by using data visualization and interactive web-based tools. Development of conceptual ecological models is a multi-step, iterative process, responding to evolving understanding of the structure and dynamics of the system by revising and refining models throughout the process. Specific steps of the process involve: defining goals and scope of the modeling, summarizing current understanding of system structure and processes, defining environmental and anthropogenic influences included in the modeling, development of relevant hierarchies and submodels, refining models with increased understanding of system function, and development of interactive and visualization tools to provide methods to use models for long term planning, development of hypotheses, data exploration, and outreach.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-J**

Project Title: GulfWatch Alaska Program – Seward Line Monitoring

Primary Investigator(s): Russ Hopcroft

PI Affiliation: University of Alaska, Fairbanks

Project Manager: ADFG

Funding Received To Date:

FY12	FY13
$98,000	$59,800

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$100,500	$104,000	$107,700	$470,200

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

The ocean undergoes year-to-year variability in the physical environment, superimposed on longer-term cycles, and potential long-term trends. These variations influence ocean chemistry, and propagate through the lower trophic levels, ultimately influencing fish, seabirds and marine mammals. Over the past 50 years the Northern Pacific appears to have undergone at least one clear "regime shift", while the last 12 years have seen multi-years shifts of major atmospheric indices, leaving uncertainty about what regime the coastal Gulf of Alaska is currently in. Regime shifts are often expressed as fundamental shifts in ecosystem structure and function, such as the 1976 regime shift that resulted in a change from a shrimp dominated fisheries to one dominated by pollock, salmon and halibut. Long-term observations are also critical to describe the current state, and natural variability inherent in an ecosystem at risk of significant anthropogenic impact. Given the potential for such profound impacts, this proposal seeks to continue multidisciplinary observations which began in 1997 along the Seward Line and in PWS that assess the current state of the Northern Gulf of Alaska, during 2012-2017. Such observations form critical indices of ecosystems status that help us understand some key aspects of the stability or change in upper ecosystems components for both the short and longer-term. By analogy, the weather has been for more than a hundred years, yet regular observations are still needed to know what is happening and what can be expected in the near future.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-K**

Project Title: GulfWatch Alaska Program – Continuing the Legacy: Prince William Sound Marine Bird Population Trends

Primary Investigator(s): David Irons

PI Affiliation: USFWS

Project Manager: USFWS

Funding Received To Date:

	FY12	FY13
	$206,300	$24,200

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$211,100	$24,200	$215,700	$681,400

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

We propose to conduct small boat surveys to monitor abundance of marine birds in Prince William Sound, Alaska, during July 2012, 2014, and 2016. Eleven previous surveys have monitored population trends for marine birds and mammals in Prince William Sound after the Exxon Valdez oil spill. We will use data collected to examine trends from summer to determine whether populations in the oiled zone are increasing, decreasing, or stable. We will also examine overall population trends for the Sound. Continued monitoring of marine birds and synthesis of the data are needed to determine whether populations injured by the spill are recovering. Data collected from 1989 to 2010 indicated that pigeon guillemots (*Cepphus columba*) and marbled murrelets (*Brachyramphus marmoratus)* are declining in the oiled areas of Prince William Sound. We have found high inter-annual variation in numbers of some bird species and therefore recommend continuing to conduct surveys every two years. These surveys are the only ongoing means to evaluate the recovery of most of these injured marine bird species. Surveys would also benefit the benthic monitoring and forage fish monitoring aspects of the Long-term Monitoring Project as well as the Herring Project.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-L**

Project Title: GulfWatch Alaska Program – Long-term monitoring of Ecological Communities in Kachemak Bay: a comparison and control for Prince William Sound

Primary Investigator(s): Brenda Konar

PI Affiliation: University of Alaska, Fairbanks

Project Manager: USFWS

Funding Received To Date:

FY12	FY13
$48,100	$48,200

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$48,100	$48,100	$47,400	$239,800

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. As part of this component, we monitor rocky intertidal, seagrass and clam gravel beach systems as well as the sea otter abundance and diet in Kachemak Bay. This component is complementary to work being conducted under this program in Prince William Sound and Katmai.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-M**

Project Title: GulfWatch Alaska Program – Long-term killer whale monitoring

Primary Investigator(s): Craig Matkin

PI Affiliation: North Gulf Oceanic Society

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$7,200	$132,800

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$132,800	$132,900	$132,900	$538,700

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

The proposed project is a continuation of the annual monitoring of AB pod and the AT1 population killer whales in Prince William Sound-Kenai Fjords. These groups of whales suffered significant losses at the time of the oil spill and have not recovered at projected rates. Monitoring of all the major pods and their current movements, range, feeding habits, and contaminant levels will help determine their vulnerability to future perturbations, including oil spills. The project also extends the scope of the basic monitoring to include an innovative satellite tagging program used to examine habitat preference, feeding ecology and assist in relocating whales for feeding studies. It continues examination of feeding habits using observation, prey sampling and innovative chemical techniques. The study will delineate important habitat, variations in pod specific movements and feeding behavior within a temporal and geographic framework. We will examine the role of both fish eating and mammal eating killer whales in the near-shore ecosystem and their impacts on prey species. Community based initiatives, educational programs, and programs for tour boat operators will continue to be integrated into the work to help foster restoration by improving public understanding and reducing harassment of the whales.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-N**

Project Title: GulfWatch Alaska Program – Long-term monitoring of humpback whale predation on Pacific herring in Prince William Sound

Primary Investigator(s): John Moran

PI Affiliation: NOAA

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$127,400	$128,800

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$139,600	$141,600	$54,400	$591,900

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al. We will evaluate the impact by humpback whales on Pacific herring populations in Prince William Sound. Following protocols established during the winters of 2007/08 and 2008/09(EVOSTC project PJ090804). We will continue to monitor the seasonal trends and abundance of humpback whales in Prince William Sound. Prey selection by humpback whales will be determined through acoustic surveys, visual observation scat analysis and prey sampling. Chemical analysis of blubber samples (stable isotopes and fatty acid analysis) will provide a longer term perspective on whale diet and shifts in prey type. These data will be combined in a bioenergetic model to determine numbers of herring consumed by whales, with the long term goal of enhancing the age structure modeling of population with better estimates of predation mortality.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-O**

Project Title: GulfWatch Alaska Program – Monitoring long-term changes in forage fish distribution, abundance, and body condition in Prince William Sound.

Primary Investigator(s): John Piatt

PI Affiliation: USGS

Project Manager: USGS

Funding Received To Date:

FY12	FY13
$209,900	$202,500

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$202,500	$202,500	$150,300	$967,600

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al.

In response to a lack of recovery of wildlife populations following the Exxon Valdez Oil Spill (EVOS), and evidence of natural background changes in forage fish abundance, there was a significant effort to document forage fish distribution, abundance, and variability in Prince William Sound (PWS) since the 1990's. We propose to adopt some of these earlier sampling techniques, and also incorporate new methods to monitor forage fish in Prince William Sound with fishing and acoustic surveys of forage fish, and to measure indices of forage fish condition.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-P**

Project Title: GulfWatch Alaska Program – GAK1 Monitoring

Primary Investigator(s): Tom Weingartner

PI Affiliation: University of Alaska, Fairbanks

Project Manager: ADFG

Funding Received To Date:

FY12	FY13
$109,500	$112,500

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$115,700	$119,100	$122,500	$579,300

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al.

This program continues a 40-year time series of temperature and salinity measurements at hydrographic station GAK 1. The data set, which began in 1970, now consists of monthly CTDs and a mooring with 6 temperature/conductivity recorders throughout the water column and a nitrate sensor at 150 m depth. The project monitors four important Alaska Coastal Current ecosystem parameters that will quantify and help understand interannual and longer period variability in:

1. Temperature and salinity throughout the 250 m deep water column,
2. Near surface stratification,
3. Near and subsurface nitrate supply on the inner shelf.

In aggregate these variables are basic descriptors of the Alaska Coastal Current, an important habitat and migratory corridor for organisms inhabiting the northern Gulf of Alaska, including Prince William Sound.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-R**

Project Title: GulfWatch Alaska Program – Long-Term Monitoring: Nearshore Benthic Ecosystems in the Gulf of Alaska

Primary Investigator(s): Brenda Ballachey

PI Affiliation: USGS

Project Manager: USGS

Funding Received To Date:

FY12	FY13
$282,400	$304,100

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$331,900	$309,600	$331,900	$1,559,900

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

We propose to continue the long-term nearshore marine monitoring program which has been ongoing in the GOA since 2006, supported by the National Park Service-Southwest Alaska Network and the US Geological Survey, and supported by the Gulf Watch Alaska project since 2012. The sampling design consists of three primary sampling locations in nearshore habitats in the central GOA region, including Prince William Sound (PWS), Kenai Fjords National Park (KEFJ), and Katmai National Park (KATM). Additionally, we will coordinate with nearshore sampling ongoing in Kachemak Bay as part of the Gulf Watch Alaska project. In western PWS, KEFJ and KATM, we plan to continue sampling at established sites on an annual basis through 2016. In eastern and northern PWS, we plan to continue sampling at established sites in alternate years, with eastern PWS scheduled for 2014. Monitoring includes measurements of water quality (temperature, salinity), intertidal invertebrates and algae, sea grasses, sea otters, black oystercatchers, and surveys of marine birds and mammals. The monitoring also includes measures of nearshore ecosystem productivity, predator-prey dynamics, and stable isotope and contaminant analyses.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120114-S**

Project Title: GulfWatch Alaska Program – Lingering Oil - Extending the Tracking of oil levels and weathering (PAH composition) in PWS through time

Primary Investigator(s): Mark Carls

PI Affiliation: NOAA

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$19,600	$13,100

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$8,700*	$169,200*	$6,500*	$217,100

Requests include 9% GA

**Funds originally requested for FY15 are now being requested in FY14 due to a shift in sampling dates, because the majority of the funds will be needed (in FY15). The FY14 request is equal to the value originally approved for FY15. This transposition of funding year requests results in no net effect on the total budget. See Part B, Summary of Project to Date for a detailed explanation.*

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et al. This project fills three needs: understanding exposure levels (past and present) for species such as mussels, intertidal invertebrates, sea otters, and harlequin ducks, (2) understanding the natural degradation of quantity and composition of PAH over a long time course, and 3) definitive long-term source identification by measurement of geochemical biomarkers (triterpanes, hopanes, and steranes). The objectives are 1) to determine oil quantity and weathering in 12 PWS beaches 25 years post spill (with repeats every 5 years thereafter), 2) provide supplementary support analyses for other long-term monitoring collaborators, 3) maintain and expand the hydrocarbon database, and 4) produce annual, final, and published reports. The subset of PWS beaches to be monitored are those where sequestered oil is expected to linger for decades. At least three predictive data sets will be considered in determining which beaches are monitored: (1) mussel bed time series started in the early 1990s, (2) beach surveys that were continued up to 2004, and spatial modeling analysis that was initiated in 2008.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011

No comments available.

Science Coordinator Comments – FY12

Date: June 2011

No comments available.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

No comments available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

Project Number: **14120120**

Project Title: GulfWatch Alaska Program – Lingering Oil - Collaborative Data Management and Holistic Synthesis of Impacts and Recovery Status Associated with the Exxon Valdez Oil Spill

Primary Investigator(s): Matthew Jones

PI Affiliation: NCEAS

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$441,100	$464,700

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$372,100	$379,200	$73,900	$1,733,900

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/30/13.*

The AOOS-led Long-Term Monitoring (LTM) and the PWSSC-led Herring Research and Monitoring (HRM) programs propose an ambitious monitoring and research agenda over the next five years. These efforts could facilitate a more thorough understanding of the effects of the oil spill if the new data and information on the spill-affected ecosystems are effectively managed and collated along with historical data on these systems, and then used in a comprehensive synthesis effort. We propose a collaboration among NCEAS and the AOOS LTM and HRM teams to help build an effective data management cyberinfrastructure for proposed monitoring efforts and organize these data with historical data, including previous EVOSTC-funded efforts, to prepare for synthesis and ensure all data are organized, documented and available to be used by a wide array of technical and non-technical users. Building on the LTM and HRM syntheses and modeling efforts and the 20-year historical data from EVOSTC projects and any available current data, NCEAS would convene two cross-cutting synthesis working groups to do a full-systems analysis of the effects of the 1989 oil spill on Prince William Sound and the state of recovery of the affected ecosystems.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2013

Executive Director Comments – FY14

Date: October 2013

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

These comments are from the two science panel members that have been tasked by the panel to with work with the EVOSTC staff on the data management and synthesis topic. The Panel does not believe that Axiom currently has the capacity to conduct the most effective management of the data. The biological investigations produced by the suite of projects included in this proposal package generate data that are challenging to code in ways that facilitate their combination with other data such as physical or chemical variables. The discipline that handles these challenges is known as informatics. The Science Panel views the inexperience of Axiom personnel as a critical problem. This concern does not imply inadequate capability of the key staff of Axiom. It is a reflection of their limited experience. Consequently, establishing a partnership between Axiom and NCEAS makes sense because Matt Jones and NCEAS are willing to share their cutting-edge expertise. NCEAS is the “National”

Center for Ecological Analysis and Synthesis and the principals of the NCEAS proposal are leaders in this field. Pairing NCEAS with Axiom, would promote information sharing of NCEAS' expertise, such emerging data standards as DateOne and on a suite of data manipulation and synthesis tools, such as meta-analysis methods. This information transfer represents critical capacity building within Alaska that would greatly benefit EVOSTC, AOOS, NPRB, and other important research and monitoring enterprises. The willingness of NCEAS to collaborate with Axiom is evident from their proposals and discussions with Rob Bochenek, Elise, Molly, and others. Nevertheless, the most creative and appealing aspect of the proposal provided by NCEAS, and which builds on technical metadata processing that NCEAS excels in, relates to the second phase of work – the synthesis activities. Some syntheses have indeed been supported by the EVOS Trustee Council over the years. These include very important outputs of the program – a synthesis of novel oil toxicity mechanisms in pink salmon by Rice et al. 2003; a book edited by Spies that placed the oil and natural resources of coastal Alaska in a context of changing climate; reviews of the delayed and indirect mechanisms by which EVOS oil caused ecological injuries by Peterson et al. (2003); and reviews of multi-year EVOS oil persistence on Alaskan beaches by Short and colleagues. Despite these valuable legacies, more synthesis is needed into the future, including on herring, where numerous potential explanations for its lack of recovery exist and a growing body of diverse data requires synthesis to extract now cryptic insights.

Phase II of the NCEAS proposal promises facilitation of just such synthesis outputs. This activity is extremely important for both the Herring and especially the Long-term Monitoring programs. The Panel recommends funding of this Phase II, under conditions that reflect engagement of the PIs from these two programs to develop the questions to be addressed and help select the experts who will participate in the study groups and synthesis efforts. The Panel notes that failure to solve the problem of creating an enduring depository for EVOS-Trustee funded data is a long-standing problem. At least 10 year ago, the EVOS Trustee Council and staff endorsed the responsible and ethically necessary principle that each study funded by the Council must deliver all resulting data in electronic form to the council staff as part of their final reporting obligations. Despite this mandate, there exists now no data base of the historically-funded projects. This issue has great capacity to embarrass the Council and the memory of the past failures motivates the Panel to recommend finally solving this problem by engaging the undeniable expertise and preeminence of NCEAS to collaborate in this venture.

Science Coordinator Comments – FY12

Date: April 2011

I concur with the science panel and strongly recommend that this proposal be funded. Data may be the single largest legacy of these programs and it is critical that the work starts on the strongest foundation possible.

Public Advisory Committee – FY12

Date: June 2011

No comments received.

Executive Director Comments – FY12

Date: June 2011

I also strongly concur with the science panel and science coordinator. The PAC was also strongly in favor of this very important collaboration, historical data recovery and the synthesis work.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund

PWS Herring Research and Monitoring Program Projects

Project Number: **14120111**

Project Title: PWS Herring and Monitoring Program

Primary Investigator(s): David Irons

PI Affiliation: USFWS

Funding Received To Date:

FY12	FY13
$1,262,992.00	$1,264,786.00

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$1,358,479	$1,294,907	$1,241,483	$6,186,193.00

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

The goal of the Herring Research and Monitoring program is to improve the predictive models of herring stocks through observations and research. The program is designed around a twenty year time frame with changes in emphasis of the process studies every five years. During this period we have four objectives to help us move towards our goal. They are: Provide information to improve input to the age-structure-analysis (ASA) model, or test assumptions within the ASA model. Inform the required synthesis effort. Address assumptions in the current measurements. Develop new approaches to monitoring.

A combination of monitoring and process studies will be used to address these objectives. The monitoring projects follow changing conditions and provide inputs to modeling efforts. The process studies are designed to be much shorter and to answer a very specific question.

The monitoring components include tracking the prevalence of disease, increased adult biomass surveys, and juvenile condition and biomass surveys. All of the monitoring components address the first objective.
There are seventeen studies that range in length of one to five years designed to address the different objectives. To address the first objective we are examining the age that fish join the spawning stock, the genetic structure, and examining the approaches available to model herring stocks. To address the second objective we are working on gathering relevant datasets and providing visualization, conducting an analysis using the herring scale library owned by ADF&G, and providing coordination between projects to examine the connectivity. To address the third objective there are intensive studies of juvenile condition and acoustic estimates of juvenile populations, trying to determine if immigration may impact our surveys, providing validation to the acoustic surveys, and conducting laboratory studies of disease. We are looking to herring tagging, disease forecasting, and non-lethal acoustic validation to address the last objective.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: June 2011 – Individual Panel Member Comments

Individual Comment 1:

Linkages among the projects are done in a thoughtful and detailed fashion. I see huge progress in how well the leaders of the herring program are viewing this Program as a whole and integrating its pieces. I commend the PIs. Specifically, the logistic coordination is compelling and achieves cost efficiencies as well as intellectual linkages. The temporal staging of various research efforts is likewise logical and well conceived. And I concur that the acoustics studies do involve three different efforts with different gear, sampling methods, and targets, so that any synergies are limited, largely to whether adult herring are encountered during sampling targeting juveniles and this is addressed.

Date: April 2011

This program seeks to add to the existing body of knowledge that began under the PWS Herring Survey program in FY10. The proposed projects will provide both new and continuing information regarding the current status of herring in PWS. The data collected under this program will be made available to researchers and the public and will provide critical information for resource managers. The continuation of current outreach and education strategies from the PWS Herring Survey projects and the additional strategies in the proposal have the potential to provide effective means to disseminate information and engage the fishing community and other community members in understanding the results of the integrated monitoring program.

The Panel recommends funding most components of this proposal, but reiterates the same serious concern about the data management components. Again the science panel strongly recommends that the Council provide assistance from an organization such as the National Center for Ecological Analysis and Synthesis (NCEAS) for peer review and technical assistance to the data management team.

The success of this proposal will depend on the reliability of herring spawn surveys which are not part of the present groups of proposals. Herring assessments in PWS, and everywhere else in the eastern Pacific, use spawn surveys as an essential part of the assessment. The approach currently used in PWS differs from all others in the use of miledays, whereas all other jurisdictions use a static measure of spawn, once spawning is completed. Also, the completeness of the spawn surveys has been questioned. (Note: these comments should not be construed as criticism of ADFG or their staff because the panel recognizes the effort and dedication made by such staff. On the contrary, the comments and recommendations related to spawn surveys should be seen as an initiative to provide assistance to field staff associated with herring assessment. The benefits of such assistance will accrue both to the science and management of PWS herring). Nearly all of the proposals are predicated on the availability of reliable herring spawning biomass assessments that are, in turn, dependent on accurate spawn surveys. To provide credible support for these proposals and for management advice future estimation of spawn must be made with a level of accuracy that consistent with that used in other jurisdictions. To provide credible management advice future estimation of spawn must be made with a level of accuracy that is required to support the assessments. There are concerns that substantial amounts of spawn may have gone undetected in some years and that some of the past spawn estimates may have been made inaccurately through error in the estimated width and density of spawn. Such concerns may not be valid but there is no way to determine this without additional work. Therefore to evaluate whether the accuracy and reliability of present and past estimation of herring spawn in PWS is accurate, we recommend developing diver-assisted surveys. The science panel noted that diver surveys, yielded different results in the past (details provided in Recommendations to Team Leader). This would also include an assessment model and biological sampling review. Herring Stock Assessment Modeling: A Science Panel Recommendation for Review Success of the herring program will depend on the reliability of ADF&G herring spawn surveys. Nearly all of the proposals are predicated on the availability of reliable herring spawning biomass assessments that are, in turn, dependent on accurate herring assessments.
Herring assessments in PWS, like everywhere else in the eastern Pacific, use spawn surveys as an essential part of the assessment. The approach used in PWS, however, differs from all others in that PWS uses mile-days, whereas all other jurisdictions use a static measure of spawn, once spawning is completed. Herring assessments also rely on accurate bio-sampling for estimates of size and age of herring. Recently, the completeness of the spawn surveys has been questioned and many have questioned the reliability of the present assessments. Additional effort may be required for all aspects of herring assessments to ensure that they are done well and are well-regarded. These comments above should not be construed as criticism of ADFG or their staff, as their present staff is clearly dedicated and hard-working.

To provide credible support for these proposals and for management advice future estimation of spawn must be made with a level of accuracy that consistent with that used in other jurisdictions. To provide credible management advice future estimation of spawn must be made with a level of accuracy that is required to support the assessments.

Science Coordinator Comments – FY12

Date: April 2011

I concur with the science panel. I also have serious concerns regarding the data program and would encourage the Council to assist the team by providing funding for a comprehensive review of the data program. I also concur with the science panel that the fundamental data that will be utilized by the program should be rigorously reviewed to ensure the best possible platform for the herring projects. I do believe that the data that has been gathered by ADF&G for PWS herring has been carefully gathered and reviewed. I would like to continue working with staff at ADF&G to determine what actions would have the greatest benefit to both the herring program and ADF&G managers. The possible addition of a staff position at ADF&G that would work closely with herring program would be of tremendous value to both the program and the management agency.

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

There has been strong concern about the program's data manager serving the entire program. Since April, the data manager's work has been favorably reviewed, has submitted late deliverables to the Council and several data management options have been produced by this program and outside entities. These options presented are in conjunction with leaders in the field of heterogeneous scientific database management and are excellent options. I recommend the Council pursue one of these options to ensure successful management of the data produced by this and past Council-funded efforts.

In addition, the program and ADF&G have discussed what actions would enhance the program's value to the management of herring. Both entities recommend the Council fund 70% of a ADF&G biometrician III or a fisheries scientist I to coordinate with the herring program and to also focus on a modeling effort. This is included in our draft administrative budget and has the strong support of individual Science Panel members. We have continued to decrease our admin budget, but are also positioning our staff and agency staff to support the long-term programs.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund
April 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-A**

Project Title: PWS Herring Program - Validation of Acoustic Surveys for Pacific Herring Using Direct Capture

Primary Investigator(s): Mary Anne Bishop

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$68,100	$90,600

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$148,000	$141,100	$145,300	$593,000

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Acoustic surveys provide a relatively low-cost, remote sensing tool to estimate species-specific fish biomass and abundance. Interpreting acoustic data requires accurate ground truthing of acoustic backscatter to confirm species and length frequency of insonified targets. Since November 2012, juvenile and adult herring acoustic surveys have been conducted in November and late March, respectively. Pelagic trawls are the recommended method for validating species composition and for obtaining relatively unbiased information on length frequency distribution, age, and other biological information. Here we propose to use a low-resistance, light-weight midwater sweeper trawl capable of towing speeds (up to 3 knots) as a method to ground truth acoustic surveys for juvenile herring. Our pelagic trawl surveys will take place in conjunction with and onboard the same vessel as three studies in the PWS Herring Research and Monitoring program: a) Juvenile Herring Abundance Index (years 2-5); b) Acoustic Consistency: Intensive Surveys of Juvenile Herring (year 3). Because of concerns of the Alaska Department of Fish and Game, for the March Expanded Adult Herring Surveys (years 2-5) we are being required to use gillnets and jigging for validation. Our project will provide data on species composition and length frequency to aid in the interpretation of current and historical acoustic surveys. In addition it will provide adult herring samples to Alaska Department of Fish and Game for the adult herring age-structure-analyses model and will provide juvenile herring samples to researchers investigating juvenile herring fitness and disease. Our trawls will also provide fishery-independent surveys for non-herring species, thus increasing our knowledge of pelagic fishes in Prince William Sound.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-B**

Project Title: PWS Herring Program - Tracking Seasonal Movements of Adult Pacific Herring in Prince William Sound

Primary Investigator(s): Mary Anne Bishop

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$70,700	$17,500

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$17,400	$0	$0	$105,600

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Knowledge of fish movements and migrations are critical to understanding fish population dynamics. In Prince William Sound (PWS) adult herring disperse after spawning, however their movement patterns are poorly understood. Currently the only information on adult herring movements are a small number of observations from fishers that suggest PWS herring are regularly migrating out of PWS and onto the shelf. This proposal focuses on verifying adult Pacific herring movements using detections of tagged fish. The Herring Marking Workshop sponsored by EVOS in December 2008, reviewed all potential marking methods for herring and conditionally endorsed acoustic tagging as a method for determining herring movements. This pilot project will acoustic tag wild adult herring for the first time. Herring will be sampled from around Port Gravina, a spring spawning area. We will examine detections from acoustic arrays to determine seasonal movement patterns in and out of Prince William Sound. The proposed project builds on our previous and current research on acoustic-tagged fishes. This project will synergize with efforts of the Ocean Tracking Network (OTN). The ability to track herring is critical to answer many questions including those about stock structure, migration habits, and the occurrence of skip-spawning. Determining the capabilities of this technology will help guide our choice of future research emphasis.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-C**

Project Title: PWS Herring Program – Data Management Support

Primary Investigator(s): Rob Bochenek

PI Affiliation: Axiom Consulting and Design

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$130,800	$130,800

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$22,500	$23,300	$24,000	$331,400

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

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 utilized by a wide array of technical and non technical users. This effort leverages, coordinates and cost shares with a series of existing data management projects which are parallel in scope to the data management needs of the long term monitoring program. In the first two years, this project would 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 would continue into year three through five but efforts would also focus on developing management and outreach applications for the data and data products produced from the LTM program.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Please refer to comments which can be found under 12120114 - McCammon and 1210120 - Jones.

Science Coordinator Comments – FY12

Date: April 2011

Please refer to comments which can be found under 12120114 - McCammon and 1210120 - Jones.

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

Please refer to comments which can be found under 12120114 - McCammon and 1210120 - Jones.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Not reviewed	Fund
April 2011	Modify	Modify	No Consensus	Modify

Project Number: **14120111-D**

Project Title: PWS Herring Program - Non lethal sampling: In situ estimation of juvenile herring sizes

Primary Investigator(s): Kevin Boswell

PI Affiliation: Florida International University

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$0	$43,676

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$51,263	$0	$0	$94,939

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

A common source of bias in acoustic surveys is proper partitioning of size classes and their respective contribution to biomass estimates (see Simmonds and MacLennan 2005). This is particularly evident when considering the probability of encountering multiple size classes (or age classes) within a given survey region, or even within a large school. Several approaches have been successful in estimating in situ size distributions, though many require appropriate light fields to determine target sizes (Foote and Traynor 1988; Gauthier and Rose 2001; Kloser and Horne 2003). Recent application of imaging sonars have proven useful for acquiring high-resolution measurements of target-length distribution, without the need for ambient or external light sources, thereby reducing the potential of behaviorally mediated bias in length estimation. Further, automated analysis software has been refined to rapidly provide length estimates and target tracking parameters, even for tightly schooling fishes.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Project Number: **14120111-E**

Project Title: PWS Herring Program – Expanded Adult Herring Surveys

Primary Investigator(s): Michele Buckthorn

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$6,500	$84,400

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$68,100	$90,600	$84,400	$334,000

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Prince William Sound herring stock biomass estimates from hydroacoustic surveys provide a direct measure of the stock abundance and are also a primary input into the age-structured assessment (ASA) model that is the forecasting tool used for managment. Prior to 2001, the hydroacoustic surveys were conducted exclusively by the Prince William Sound Science Center (PWSSC). Since 2001, the effort has been shared between PWSSC and the Cordova office of Alaska Department of Fish and Game (ADF&G). While the ADF&G considers the hydroacoustic surveys to be critical (Steve Moffitt, personal communication) the lack of a commercial herring fishery in PWS since 1998 has reduced management priorities for herring. Thus the PWSSC contribution has become critically important for the long-term, especially if a future fishery appears only a remote possibility. With the level of effort available over the past several years, PWSSC and ADF&G individually have achieved herring biomass estimates with a precision of about ±30%, which is insufficient for management purposes. However, the combined effort currently meets management requirements for precision. Current stock assessment efforts by ADF&G resource managers in PWS focus on the largest spawning aggregations. The objective of this study is to increase the current survey area of adult spawning beyond the Port Gravina and Fidalgo areas to provide a more precise estimate of spawning biomass. We propose to extend the PWSSC acoustic surveys to help identify the relative contributions of additional spawning aggregations over temporal and spatial scales. This will help establish more accurate estimates of the total herring biomass in PWS and provide an alert to changes in biomass in different regions. Beginning in FY2013 and continuing until 2016, hydroacoustic surveys will be conducted in late spring (April-May) to assess adult spawning biomass. ADF&G will continue to conduct direct sampling for age/length/weight. Additional direct capture will be conducted using a midwater trawl at adult spawning sites (See Bishop proposal).

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-F**

Project Title: PWS Herring Program – Juvenile Abundance Index

Primary Investigator(s): Michele Buckthorn

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$90,100	$80,100

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$66,100	$84,900	$83,000	$404,200

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Management of the Pacific herring stock in Prince William Sound (PWS), Alaska, is based primarily on an age-structured-assessment (ASA) model. The current model, developed in 2005, incorporates both hydroacoustic estimates of the adult herring biomass and an index of the male spawning, called the "mile-days of spawn". Unfortunately, the forecast is based on measurements from the previous year and does not have a direct measure of future age 3 recruitment. Current knowledge suggests that most mortality occurs during the first winter of life, so the relative recruitment may be fixed by the end of the first year. Consequently, estimates of relative abundance of age 1 and age 2 fish should provide an index of future recruitment. An index of age 0 fish would also provide a forecast of recruitment if additional information were available on the magnitude of the first year mortality. We will conduct annual fall surveys (FY2013-2016) of 8 bays; four of which will be the Sound Ecosystem Assessment (SEA) bays (Cooney et al. 2001). This will maintain a continual database from these locations. The other 4 bays will be selected based upon the survey results of the current EVOSTC FY10 Herring Survey Project (# 10100132). Surveys will be conducted using 120 kHz split-beam hydroacoustic unit in a stratified systematic survey design (Adams et al. 2006). For this study, direct capture will be directed to size and species composition. A midwater trawl will be used to sample randomized transects within each strata.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-G**

Project Title: PWS Herring Program – Intensive surveys of juvenile herring

Primary Investigator(s): Michele Buckthorn

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$50,100	$29,757

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$46,543	$6,800	$0	$133,200

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Hydroacoustic surveys of juvenile herring nursery areas in Prince William Sound have been conducted during fall and late-winter for the last several years. The number of locations surveyed have varied from 5-9, including the 4 Sound Ecosystem Assessment (SEA) bays. However, each seasonal effort has conducted only a single night survey in each of these locations. Thorne (2010) examined seasonal changes from fall 2006 to spring 2009. He showed that apparent overwinter mortality of age 0 herring appeared to be greatest in Simpson Bay and least in Whale Bay. However, the differences in seasonal abundance could be attributed to mortality, emigration, or changes in ambient light. We propose to address these uncertainties with an intensive fall and late winter/spring intensive survey. The fall series will start mid-October 2014 and extend to the first week of December. The late winter/spring series will begin the 3rd week of February 2015, and extend into the 2nd week of April. We propose to conduct the surveys in two bays sufficiently adjacent to cover each bay each night, such as Simpson Bay, Port Gravina, Windy Bay or St. Mathews Bay. In addition to the hydroacoustic surveys, we propose a single night of direct capture effort in each location for each of the survey weeks (See Bishop, this proposal). The survey design will follow the historic zig zag transects run by Thorne since 1993 in order to remain consistent with that sampling design and to put the long term fall and spring surveys into context.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-H**

Project Title: PWS Herring Program – Outreach & Education

Primary Investigator(s): Lindsay Butters

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$16,500	$30,500

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$32,700	$36,000	$38,300	$154,000

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

The Outreach & Education project is designed to enhance the PWS Herring Program research activities by showcasing their relevancy, broadening their applicability and extending their impact to people in the community. PWSSC educators will work with PWS Herring Research and Monitoring principal investigators (PI) and project collaborators to prepare public education materials that communicate the purpose, goals and results of the research program to "non-scientist" audiences and stakeholders in communities in and beyond the spill affected area.

Outreach and education products will extend and transfer Pacific herring and marine ecosystem information to inform the public of local research activities and improve their ecological and ocean science literacy.

The specific objectives of this proposal, which includes the outreach and education components of the PWS Herring Research and Monitoring Program, are to:

1) Disseminate PWS herring research information and lessons learned in this program to individuals, groups, policy makers, resource managers and institutions in PWS, including the effected fishing community.

2) Extend and transfer PWS herring research-based outreach and education products to general audiences in and beyond the spill affected areas of PWS.

3) Integrate community involvement into the planning and sampling programs through citizen science opportunities and public workshops

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-K**

Project Title: PWS Herring Program – Herring Disease Program (HDP)

Primary Investigator(s): Paul Hershberger

PI Affiliation: USGS

Project Manager: USGS

Funding Received To Date:

FY12	FY13
$0	$0

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$281,900	$291,900	$298,000	$871,800

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

The Herring Disease Program (HDP) is part of a larger integrated effort, Prince William Sound Research and Monitoring (outlined in a separated proposal by Dr. Scott Pegau). Within this integrated effort, the HDP is intended to evaluate the impact of infectious and parasitic diseases on the failed recovery of the PWS herring population. The framework for the 2012 – 2016 HDP involves a combination of field surveillance efforts, field-based disease process studies, and laboratory-based controlled studies. Field surveillance efforts will provide continued and expanded infection and disease prevalence data for herring populations in Prince William Sound (PWS), Sitka Sound, and Puget Sound. During FY 2014 we will continue the health assessments of adult herring from Prince William Sound and Sitka Sound, we will continue to rear colonies of specific-pathogen-free Pacific herring for controlled studies in the laboratory, and we will develop a chromogenic in situ hybridization assay that will be capable of identifying Ichthyophonus in histological tissue sections.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Project Number: **14120111-L**

Project Title: PWS Herring Program – Herring Condition Monitoring

Primary Investigator(s): Scott Pegau

PI Affiliation: PWS Science Center

Project Manager: USGS

Funding Received To Date:

FY12	FY13
$0	$230,000

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$ 238,700	$251,500	$253,900	$974,100

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Outlined here is a single herring monitoring project that is a part of an integrative program that will enhance the current herring monitoring efforts and examine aspects of particular life stages to allow better modeling of Prince William Sound herring populations. The long-term goal of the program is to improve predictive models of herring stocks through observations and research.

This project will be furthering the development of a herring overwintering mortality model that began with an ongoing monitoring project that began in 2007 and incorporates results from Prince William Sound herring research dating as far back as the 1990's. The model runs by applying herring condition observations made before and after winter. Accordingly, herring are sampled in November and the following March. Present sampling will end in March 2012. Proposed sampling will commence in November 2012 and end in March 2016. A future project is expected to continue the time series beginning in November 2016. The purpose of the time series is to relate overwinter mortality to herring recruitment.

This project will be furthering the development of a herring overwintering mortality model with additional data types as well energy levels per se. The goal is use physiological indicators to realistically modify the daily energy loss rate in the overwintering model. The results of model improvement will be tested using the March data model validation approach begun during the project that began in 2007.

Additionally, we will be assessing effects of competition of other juvenile fishes on condition of age-0 herring using stable isotope analysis on an opportunistic basis.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Project Number: **14120111-M**

Project Title: PWS Herring Program – Juvenile Herring Intensive Monitoring

Primary Investigator(s): Scott Pegau

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$207,000	$77,300

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$20,400	$0	$0	$304,700

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Described here is a single process study project that is a part of an integrative program that will enhance the current monitoring efforts, and examine aspects of particular life stages to allow better modeling of Prince William Sound herring populations. The long-term goal of the program is to improve predictive models of herring stocks through observations and research. The herring monitoring program is necessarily of coarse temporal and spatial resolution with just two observations per year at narrowly defined sampling sites spread around the large area comprising Prince William Sound. Data interpretation requires a greater context to impart greater meaning. In the case of temporal variation of herring condition it would be useful to know (1) how sensitive the herring overwinter mortality model is to starting time, and (2) the timing of recovery from winter starvation. In the case of spatial variation of herring condition it would be useful to know how sensitive the herring overwinter mortality model is to immigration and emigration from areas immediately adjacent to where herring are sampled at the time of our November and March surveys.

Fine-scale temporal and spatial variability at designated herring monitoring sites has never been characterized and therefore remains a data gap with potential ramifications for interpreting observed variation of herring condition that is part of the herring monitoring program as well as the aforementioned modeling. This will be addressed by sampling at Simpson Bay, which has been a key monitoring site for juvenile herring since the 1990's. Energy content and RNA/DNA will be measured monthly from September 2011 until June 2012 to assess fine-scale temporal variability. Fine-scale spatial variability will be assessed by sampling in November and March five separate sub-areas of a more extensive Simpson Bay than what is typically done during surveys. The results of the analysis will be contributed to the herring synthesis effort that will take place in FY14.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-O**

Project Title: PWS Herring Program – Coordination and Logistics

Primary Investigator(s): Scott Pegau

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$364,125	$510,229

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$388,088	$339,016	$338,627	$1,940,085

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

This project is for the coordination and logistics aspects of the proposed program titled, "PWS Herring Research and Monitoring". The objectives of the program are 1) Provide information to improve input to the age-structure-analysis (ASA) model, or test assumptions within the ASA model, 2) Inform the required synthesis effort, 3) Address assumptions in the current measurements, and 4) Develop new approaches to monitoring. The Coordination and Logistics program objectives are to 1) ensure coordination between projects to achieve the program objectives, 2) Provide a synthesis from existing results, and 3) provide logistical support to the various projects.

Coordination includes scheduling of projects to ensure the maximum sharing of vessel time and so that projects dependent on results or samples from another project are in the correct order. Coordination will be primarily through email and teleconference, but each year all the investigators are required to meet in person. Coordination is also taking place with the existing Herring Survey program, the Long-Term monitoring program, and ADF&G herring sampling.

Logistics is primarily in providing vessel time although a remotely operated vehicle is requested in this budget to support non-lethal fish identification and being able to search under the ice. The synthesis to be provided by this project is leveraging the required synthesis of the existing Herring Survey program. We intend to update that effort with new results and add a section on how environmental conditions affect herring growth.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

Science Coordinator Comments – FY12

Date: April 2011

Public Advisory Committee – FY12

Date: April 2011

No comments received.

Executive Director Comments – FY12

Date: April 2011

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Fund	Fund	Fund	Fund

Project Number: **14120111-P**

Project Title: PWS Herring Program – Genetic Stock Structure

Primary Investigator(s): Jeffrey Guyon

PI Affiliation: NOAA

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$0	$0

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$50,500	$53,100	$0	$103,600

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Understanding if there is one PWS herring stock or multiple stocks is important for proper management of fisheries. We propose to study the genetic uniqueness of herring from PWS to determine if it may be a complicating factor in the recovery process. A previous genetic study of herring in the region indicated that the PWS herring population was genetically distinct from other stocks spawning outside the Sound (O'Connell et al. 1998), providing an impetus for additional work. Several recent studies have made advancements in herring research using microsatellite loci, and have detected fine-scale genetic differentiation among local regions of herring (Beacham et al. 2008; Andre et al. 2011; Wildes et al. 2011). Each microsatellite locus contains multiple alleles making microsatellites ideal genetic markers for analyzing migratory fish with limited stock structure like herring. Based on our experience studying Pacific herring in Southeast Alaska using microsatellite markers (Wildes et al. in 2011), successful completion of this proposal will require (1) increasing the number of genetic samples per collection from the 50 used in the previous analysis (O'Connell et al. 1998) to 150 fish, (2) using an increased number of informative markers (from 5 to 15), (3) analyzing at least two years of collections to examine temporal stability, and if sampling allows (4) spatial stability from collections from two different historical locations (east, west). Evaluation of temporal and spatial variation of herring population(s) in and around PWS using updated genetic protocols will provide important information about herring life history that will contribute to improving the application of the ASA model.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Project Number: **14120111-Q**

Project Title: PWS Herring Program – Modeling the population dynamics of PWS herring

Primary Investigator(s): Trevor Branch

PI Affiliation: University of Washington

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$36,907	$87,014

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$97,836	$100,406	$104,920	$427,083

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 8/29/13.*

Shortly after the Exxon Valdez oil spill, the Prince William Sound herring populations collapsed and have not yet recovered. We propose a modeling project to (1) revise and update the ASA model used to manage this population, (2) conduct simulations to test which data sources are most important in assessing the current status of this population, and (3) collect data on herring populations worldwide to find out how often these populations collapse under ordinary conditions.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

Science Panel Comments – FY13

Date: September 2012

Due to the change in the funding cycle, the program only began their work four months prior to this review. We have reviewed the work completed to date and are comfortable with the program continuing their proposed work.

Science Coordinator Comments – FY13

Date: September 2012

I concur with the science panel.

Public Advisory Committee Comments – FY13

Date: September 2012

Nor reviewed.

Executive Director Comments – FY13

Date: September 2012

I concur with the science panel.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
September 2012	Fund	Fund	Not Reviewed	Fund

Science Panel Comments – FY12

Date: April 2011

The Herring Program team clearly gave careful thought to how modeling should be done and who should do it. Their choice and recruitment of Trevor Branch at UW is superb. This is a young rising star in fisheries dynamics modeling, who has many experienced colleagues with whom to interact. His proposal represents a good guideline for the modeling work he will begin, identifying some key processes of high value to the herring program. We expect to see evolution of the modeling as the project develops and see Branch as a leader who will make adaptive additions and modifications as new issues arise. We would like to have seen a more overt mention of how competing drivers of herring mortality will be tested against one another – physiological stress, starvation, top-down predation, and disease. These are clearly embedded in the life history modeling, but model fits to choose the factor or combinations of factors that best fit observed abundance changes would be welcome.

Agency Staff Comments – FY12

Date: August 2011

The proponent is a great choice for this work, and having this as a doctoral project is a cost-effective way to get some very good work done. The project description is light on details, and that is acceptable to a limited extent, given that the work includes an investigation of what has been done and the available data (via the management strategy evaluation), and that it is important to be flexible in model development.

It would be helpful to have more details on the "holistic" model. For example, the Hulson et al. age structured analysis is referenced in relation to the management strategy evaluation, but there is no clear description of how the proposed holistic life-stage model relates to or builds off of the ASA, i.e., what the structure of the "holistic" model will be. Another concern is that is not clear if or how the "holistic" model will be used to aid in identifying the limiting factors in herring recruitment and recovery. That could be an important aspect of the overall herring program. The disclaimer in the second paragraph of the "Statement of the Problem" is disconcerting given the intellectual effort that the proposal aims to expend on model development:
"While we do not anticipate that there will be a major change in our modeling ability in the next five years, we expect that the combination of monitoring and focused process studies will provide incremental changes over the next twenty years and result in a much better understanding of herring populations by the end of the program."
Perhaps the proponent could offer a more detailed, though conditional description of what the expected benefits might be.

Other items
The order of the three tasks is a bit confusing. The tasks given in Methods (p. 3-4) are:
1. Management strategy evaluation to identify most informative datasets –
2. Predict future levels of recruitment – a meta-analysis of time series for other herring and clupeid stocks.
3. Holistic model of herring dynamics – life stage model (age based), tasks conducted by UW students and faculty with access to Hilborn, Punt, and Essington.

The expected order of completion of these tasks as given under Milestones (p.7) is
1. model (by 9/14),
2. MSE (by 9/15), and
3. predict recruitment (by 9/16)

It is not clear why a model will be developed first, and then a different model (ASA) used in the management strategy evaluation. Also, the work to predict future recruitment, as described, appears correlational and doesn't appear to involve the "holistic" model or a mechanistic understanding of herring dynamics, yet the timeline has this work occurring after initial model development. How would this work be related to the "holistic" model? Timeline (p. 7) FY12 dates are given as beginning October 1, 2013. Should that be 2011? The budget includes research assistant-ship and tuition for a Ph.D. student – essentially a half time position dedicated to this research. This is a cost efficient use of funds.

Science Coordinator Comments – FY12

Date: April 2011

I concur with the Science Panel's comments. The PI's identified are skilled and well-respected in their field and will bring valuable experience to this complex project.

Public Advisory Committee – FY12

Date: April 2011

The PAC concurs with the Science Panel recommendation to fund the Branch modeling project. There were no objections.

Executive Director Comments – FY12

Date: April 2011

Not available.

FY12 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
April 2011	Fund	Fund	No Consensus	Fund

Project Number: **14120111-R**

Project Title: PWS Herring Program – Aerial Survey Support

Primary Investigator(s): Scott Pegau

PI Affiliation: PWS Science Center

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$0	$0

Funding includes 9% GA

Funding Requested by Fiscal Year:

FY14	FY15	FY16	Total
$65,000	$65,000	$0	$130,000

Requests include 9% GA

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/3/13.*

This project is for providing aerial survey support to the EVOSTC sponsored Herring Research and Monitoring (HRM) and Gulf Watch Alaska (GWA) programs. For the HRM program the aerial support will be used to help collect herring samples for the genetics project and to provide an aerial index of age-1 herring abundance. For the GWA program the aerial support will be used by the forage fish project. The desire is to provide an aerial index of forage fish abundance and guide the capture efforts of the vessel. In turn the vessel will be providing ground truth of fish types and size of schools for better interpretation of the aerial based forage fish information. This proposal request is strictly for aerial support, all analysis and vessel funding will come from the existing projects. Funding for this project will be managed as a supplement to the HRM Coordination and Logistics project (12120111-O) led by Dr. Pegau.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Science Coordinator Comments – FY14

Date: September 2013

Public Advisory Committee Comments – FY14

Date: October 2012

Executive Director Comments – FY14

Date: October 2012

NOAA Harbor Protection Program Projects

Project Number: **14120112**

Project Title: NOAA Harbor Protection Projects – Project Management

Primary Investigator(s): Laurel Jennings

PI Affiliation: NOAA

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$19,883	$0

Funding Requested by Fiscal Year:

FY14	FY15	FY16	FY17	FY18	Total
$6,540	$0	$0	$0	$0	$6,540

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/3/13.*

The National Oceanic and Atmospheric Administration (NOAA) Restoration Center (RC) proposes to establish a new funding opportunity for Prince William Sound coastal communities to help them prevent small but damaging toxic releases originating from harbors and marinas. This opportunity will build upon existing resources and knowledge and provide communities with a long serving set of methods for handling small spills and re-engage an already informed group of concerned citizens to help run the program after the five years of EVOS funding is completed. This effort will review past EVOS assistance to harbors ensuring that past EVOS expenditures for equipment are utilized to the maximum efficiency, identify technology advancements that can improve current activities in the marinas, and create a local investment and ownership in the success of chosen projects. The purpose of this project will be to protect marine resources negatively affected in EVOS from future aggravation and pollution.

The invitation cycle has been completed and five proposals were submitted to the Council in 2/13 for their review. The Council requested revised proposals from two of the five proposers which were submitted on 9/3/13. This request for funding is for travel costs only to assist with project monitoring. The total requested above is based on both proposals receiving funding. If only one proposal is selected the request is as follows:

Project	Travel	Cost
Cordova – Snow management & Harbor water quality improvement projects (2 projects for one travel expenditure)	ANC to Cordova (round trip), 1 person, 2 days X 3 monitoring trips	$1300 x 3 = $3,900
Anchorage – Project management	SEA to ANC (round trip), 1 person, 2 days	$2,100
	TOTAL	**$6,000**

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Not reviewed

Science Coordinator Comments – FY14

Date: September 2013

Not reviewed

Public Advisory Committee – FY14

Date: September 2013

Pending

Executive Director Comments – FY14

Date: September 2013

Not Reviewed

Trustee Council Comments – FY14

Date: October 2013

Pending

Science Panel Comments – FY12

Date: June 2011

Not reviewed.

Science Panel Comments – FY12

Date: April 2011

In response, the Proposer has reduced their budget to $1 million and has indicated funding from NOAA in the final proposal. The panel has several key concerns regarding the proposed program. First, a significant portion of the funding requested will be spent in administrative and travel costs for the Seattle, WA and Anchorage, AK based team. Second, the narrative does not provide enough information to determine the potential effectiveness of the program. Finally, there is no established plan for outreach and education that would be critical for this type of effort. There are only general descriptions of types of activities that might be included in community-specific plans. There are references other Best Management Practices (BMP) but does not commit to following any particular BMP. There seems to be overlap in scoping and assessment phases with an already existing Alaska Clean Harbor project funded for $282,615 by CIAP grant (see CIAP approved state plan, http://dnr.alaska.gov/coastal/CIAP/ciap_Fall.htm). Unless coordination is required, there may be duplication of effort with the Clean Harbor program at significantly higher expense in this project. Travel costs seem high, especially in the implementation phases that do not involve public outreach. Most of the staff is coming from Seattle which increases the cost, but there is not much justification in the proposal other than relationship building with communities. The listed project managers do not seem to have much experience with harbor operations, so technical assistance may be limited.

Science Coordinator Comments – FY12

Date: June 2011

The team has reduced their budget as requested by the Council. I continue to be concerned that the first projects will not even be selected until June 2013 leaving only three field seasons available for the actual work. Also, the current timeline would not allow the Council (who will only be meeting annually in Aug/Sep) the opportunity to review the projects prior to their selection and implementation.

Public Advisory Committee Comments – FY12

Date: June 2011

A revised proposal with funds leveraged has reduced the cost of this effort, which will be managed by NOAA

staff. While there are merits to the cleanup of harbors, the Trustee Council should proceed with caution, as there are few details at this time explaining what this project will accomplish.

Executive Director Comments – FY12

Date: June 2011

The proposer has responded to SP and TC concerns and submitted a reduced-budget proposal that mitigates issues identified prior. However, the PAC has identified concerns with funding an largely administrative process and I agree with the Science Coordinator's concerns. This is an important focus area, as also discussed by the PAC, but due to those issues, my "fund" recommendation is fairly soft.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
June 2011	Not reviewed	Do not fund	Do not fund	Fund
April 2011	Do not fund	Do not fund	Do not fund	Do not fund

Project Number: **14120112 - A**

Project Title: NOAA Harbor Protection Program – Cordova Clean Harbor

Primary Investigator(s): Ivy Patton

PI Affiliation: Native Village of Eyak

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$0	$0

Funding Requested by Fiscal Year:

FY14	FY15	FY16	FY17	FY18	Total
$193,722	$72,996	$77,355	$0	$0	$344,074

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/3/13.*

Like many public harbors, the Cordova Harbor is faced with chronic oil and debris pollution. Annually waters in and around the harbor are coated with spilled petroleum products, mostly the result of contaminated bilge water, and debris from boat maintenance projects. The constant presence of oil within the harbor has led to it being used as a positive control for hydrocarbon studies in Prince William Sound (Thomas et al. 2007). Additionally, litter management in the harbor is a constant challenge for city staff.

Cordova's harbor is located in the heart of town, and is heavily relied upon by the commercial fisherman, recreationists, tourists, and subsistence users for work, food, and recreation. Locals and tourists alike take walks on the Breakwater Trail or the dock floats, and they enjoy sitting at the Fisherman's Memorial park bench overlooking the harbor. People are often seen fishing from the dock floats, and sea otters, seals, sea lions, and shorebirds frequent the harbor for foraging and shelter. The amount of debris and hazardous waste in the Cordova Harbor is not only a health risk, but also an eyesore. By improving the water quality and appearance of the Cordova Harbor, the human services injured resource will be enhanced.

Each year, from May through September, the harbor's 700 slips are fully occupied, and additional transient moorage is heavily utilized. With a broad range of vessels operations using the harbor including commercial fishing boats, tenders, charter, pleasure, sail, houseboats (liveaboards), and subsistence skiffs, a portfolio of approaches is required to improve water quality including an increased and consistent public education and awareness of clean harbor practices and resources

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Pending

Science Coordinator Comments – FY14

Date: September 2013

Pending

Public Advisory Committee – FY14

Date: September 2013

Pending

Executive Director Comments – FY14

Date: September 2013

Not Reviewed

Trustee Council Comments – FY14

Date: October 2013

Pending

Individual Science Panel Comments – FY12

Date: December 2012/January 2013

Reviewer 1:

This proposal describes several projects, each of which could make important contributions to preventing water pollution in the Cordova harbor and Orca Inlet and one of which can provide proof of concept for responding to small oil spills. The proposal reflects past work in various groups in Cordova-Eyak coming together under the banner of Clean Harbors to support this project on behalf of the environment and natural resources of the area. Several components make up this proposed project. It will address antifreeze pollution by pursuing recycling possibilities. It will address the lead pollution of improper disposal of batteries with a battery storage shed. It will hold a conference and then conduct pilot studies of containment and removal of small oil spills, including purchase of boom. It will conduct a variety of outreach efforts including educational possibilities through the high school ocean science bowls. All of this seems well conceived. The question is whether this fits the profile of EVOS Trustee funding policies. First, the EVOS Trustee Council has not previously invested in pollution prevention or in research or implementation of response actions. That is clearly what this proposal is all about. Second, the cost of this project is very high – 417 K in EVOS Trustee Council funds. Third, I cannot find evidence that the responsible PIs have a track record of demonstrating experience and success in handling this level of funding in a previous similar project. Fourth, I question the value of the PAH sampling in mussels, given that the response activities for small oil spills represent merely a pilot project not a sustained set of responses that could be sufficient to allow detection of reduced pollution in the mussels. Fifth, the sampling design for collecting mussels (From where? How many? Why the proposed frequency?) is not adequately justified. Sixth, this proposal needs to do a better job of relating pollution reduction to enhancing recovery of injured species, to show the connection typically required for EVOS Trustee Council funding.

Reviewer 2:

I appreciate that groups are coalescing on behalf of the community to improve water quality of the Cordova Harbor. Several projects have been proposed, including 1) proper disposal of antifreeze, batteries and trash, 2) small oil spill response, 3) workshops, public education and outreach, and 4) monitoring of water quality. A substantial component of this proposal is exploratory (e.g., workshops, contest), but I favor a more cost-effective approach of implementing best available practices. There are a great many harbors that are addressing these same issues, and it should be straight forward to adopt existing practices. I am also not convinced that the monitoring PAHs in mussels is the best use of funds for tracking success of this multi-pronged approach to cleaning up the harbor. Furthermore, mussels will be collected from only one location in the harbor. How will

this provide meaningful data on small spills that are patchy in space and time? This is the most expensive of the proposals, and the budget could be trimmed to focus on components that would have a direct, immediate impact on improving water quality while concomitantly reducing associated administrative costs

Reviewer 3:
This proposal is presented by a group of concerned citizens including the NVE and others such as PWS keeper, Cordova fishermen, etc. Their goals are to bring a presence to Cordova Harbor to promote clean boating practices, engage local harbor staff, businesses, etc. in supporting services and to assist with improving user clean practices. Previously NVE and CCH has addressed antifreeze disposal, dealing with small spills in the harbor and developing cleanup approaches, extending outreach activity for education of harbor users, and evaluation of changes through PAH monitoring of mussel tissues. While the other tasks are worthy, the last item on PAH levels in mussels is too ambitious and the design is probably not such that useful data can be obtained. It is suggested this last task be eliminated. This is an expensive proposal and cost savings could be realized in a number of areas, particularly in administration.

Science Coordinator Comments – FY13

Date: January 2013

Overall, the proposal is clear and maximizes the local, state, and federal resources available. The costs are clearly detailed and the objectives are reasonable in both time frame and cost. The amount of cooperation and coordination that has already been achieved is remarkable and I appreciate that much of the planning and design has already occurred prior to this funding request.

My primary concern is with the projects that address small-spill response though workshops and a demonstration project. While these projects would certainly be useful for OSRI or the oil and gas industry, they may not be able to receive funding through the EVOS Trustee Council who is usually not able to fund any activities in oil spill prevention and response. I would recommend that these projects be removed from the proposal and the budget be reduced accordingly. I also suggest that some clarification is needed about the antifreeze demonstration project to ensure that this project would result in a long term solution to the harbor's need for dealing with antifreeze. In response to several of the science panel members concern regarding the PAH monitoring in mussels, the sampling and monitoring proposed is part of the existing NOAA Mussel Watch Program. This information would add to the long-term data set that already exists through this program.

Public Advisory Committee Comments – FY13

Date: January 2013

Abstracts were submitted to individual members of the PAC for comment. No comments were received.

Executive Director Comments – FY13

Date: February 2013

I support the recommendations and observations of the Science Coordinator, though I also note the remaining concerns of the Council's legal advisers.

Executive Director Comments – FY13

Date: January 2013

This project was solicited by NOAA under EVOSTC project 12120112, Phase I of which was funded in the FY’12 Work Plan. Phase I was funded by the Council at a reduced sum of $20,000 for an invitational process and work with spill area communities to encourage submission of proposals reducing contamination originating from harbors and marinas. It should be noted that there are concerns regarding the proposals that were submitted under this program. This has long been a tenuous funding area for the Council. In the past, the Council funded acquisition of waste management facilities and activities and aided their implementation, but there was concern about the very indirect links between such projects and restoration. The projects submitted under NOAA's invitation have simply renewed these concerns. Moreover, some of the proposals are for projects that are very similar to those that have been funded by the Council in the past and have, apparently, not been successful or not

maintained, both of which are inimical to Council policies. Lastly, some of the proposals seek funding that is aimed at correcting illegal behaviors on the part of members of the public or of governmental entities and seek monies that would augment, probably unlawfully, the appropriations of local governments and one or more State agencies.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
January 2013	No consensus	Modify	Not reviewed	Modify

Project Number: **14120112 - B**

Project Title: NOAA Harbor Protection Program – Snow Management Analysis

Primary Investigator(s): Kristin Carpenter

PI Affiliation: Copper River Watershed Program

Project Manager: NOAA

Funding Received To Date:

FY12	FY13
$0	$0

Funding Requested by Fiscal Year:

FY14	FY15	FY16	FY17	FY18	Total
$103,818	$137,591	$77,355	$0	$0	$ 241,409

Abstract:

**This abstract is excerpted from the PI's Proposal, dated 9/3/13.*

The Copper River Watershed Project (CRWP) proposes to demonstrate that application of best management practices to managing snow in a developed community will improve the water quality of snowmelt discharges that flow directly into the Cordova harbor and Orca Inlet, the habitat range of the majority of PWS juvenile herring. Synthesized research on the long---term effects of the Exxon Valdez oil spill found that chronic persistence of oil has sub---lethal impacts on marine populations. Over the course of a winter, contaminants that commonly accumulate in snow include oil, grease, sediment, nitrogen, phosphorous, and metals. The CRWP will work with the City of Cordova and the Alaska Department of Transportation & Public Facilities to examine current snow handling practices in Cordova, identify Best Management Practice procedures and structures that could help reduce the concentration of contaminants in snow melt run---off, implement BMP structures at three snow storage sites, conduct water quality testing to assess the effectiveness of the BMP structures, and produce a guidance report for distribution to other municipalities.

FY14 Funding Recommendations:

Science Panel	Science Coordinator	PAC	Executive Director
Pending	Pending	Pending	Pending

Science Panel Comments – FY14

Date: September 2013

Not reviewed

Science Coordinator Comments – FY14

Date: September 2013

Not reviewed

Public Advisory Committee – FY14

Date: September 2013

Pending

Executive Director Comments – FY14

Date: September 2013

Not Reviewed

Trustee Council Comments – FY14

Date: October 2013

Pending

Individual Science Panel Comments – FY12

Date: December 2012/January 2013

Reviewer 1:

This proposal describes an engineering analysis of options for conducting snow removal and storage in Cordova in ways that are intended to minimize negative impacts on water quality and habitat during its melting phase (and create cost economies to the Town). Funding does not cover implementation of the recommendations. Previous engineering reviews imply that beneficial changes are likely to emerge, although no smoking gun of water quality violations has been identified. One year of minimal water quality sampling is proposed but sampling design is only generally presented. The NGO (PIs) responsible for this proposal and project if funded has previous experience with project management and apparently successful implementation. Costs are modest ($68 K) to EVOS. Community outreach and education components seem reasonable and appropriate. What exactly the contracted engineering consultants will do and what ranges of options exist is rather vague, so more history of the similar analyses done by the engineers would have been a useful guide as to the breadth of their analyses likely to be done for Cordova. The tie-in to injured species is minimal – herring were once abundant in Orca Inlet and fresh-water salmon rearing habitats are potentially polluted by contaminants in the melting snow. I am not convinced enough of the relevance to restoration and recovery of EVOSlisted species, but the project has merit.

Reviewer 2:

An analysis of snow management in Cordova has been proposed to reduce likely contamination of the watershed, which might affect salmon, herring and shorebirds. A surprising shortcoming of the proposal is that a specific set of likely alternatives to current management practices was not presented, providing little basis for assessing the potential outcomes of this proposal. Water quality will be assessed during wet and dry periods, but here too, details are lacking making it difficult to evaluate the success of the study. Recommended changes to the management plan that are easily incorporated will be tried in the second year of the project. Outreach and education components are appropriate, and the cost of the proposal is reasonable ($68K).

Reviewer 3:

This proposal conducts an evaluation of the snow removal and sanding options for Cordova. It does not include any implementation costs. The connection to injured resources in the spill area is somewhat tenuous.

Reviewer 4:
This is a "scoping" proposal for dealing with management of snow from the Cordova area where melt results in contaminant loading into salmon habitat. A BMP for snow removal will be developed and in 2014-2015, a demonstration implementation of snow management will occur. There will be public outreach and education with K-12 student involvement. This seems like an appropriate use of funds and is a reasonable cost. The specific details of the plan are lacking but could be provided. Also, this is a clear way to improve harbor health, but not clear if specific enhancement of damaged species will occur.

Science Coordinator Comments – FY13

Date: January 2013

A snow management plan for Cordova would likely be highly beneficial to the marine habitat. With the recent record snowfall years it becomes even more important that the pollutants contained in the snow are not contributing to a decline in water quality or detrimental to critical marine habitat.
However I have concerns regarding the actual implementation of the analysis. This project will only produce a report that would need the financial support of the City to be implemented.

Public Advisory Committee Comments – FY13

Date: January 2013

Abstracts were submitted to individual members of the PAC for comment. No comments were received.

Executive Director Comments – FY13

Date: February 2013

I support the recommendations and observations of the Science Coordinator. While appreciative of the efforts made by the proposers and the project support by NOAA, legal and practical concerns remain.

Executive Director Comments – FY13

Date: January 2013

This project was solicited by NOAA under EVOSTC project 12120112, Phase I of which was funded in the FY'12 Work Plan. Phase I was funded by the Council at a reduced sum of $20,000 for an invitational process and work with spill area communities to encourage submission of proposals reducing contamination originating from harbors and marinas. It should be noted that there are concerns regarding the proposals that were submitted under this program. This has long been a tenuous funding area for the Council. In the past, the Council funded acquisition of waste management facilities and activities and aided their implementation, but there was concern about the very indirect links between such projects and restoration. The projects submitted under NOAA's invitation have simply renewed these concerns. Moreover, some of the proposals are for projects that are very similar to those that have been funded by the Council in the past and have, apparently, not been successful or not maintained, both of which are inimical to Council policies. Lastly, some of the proposals seek funding that is aimed at correcting illegal behaviors on the part of members of the public or of governmental entities and seek monies that would augment, probably unlawfully, the appropriations of local governments and one or more State agencies.

FY13 FUNDING RECOMMENDATIONS

Date	Science Panel	Science Coordinator	PAC	Executive Director
January 2013	No consensus	Do not fund	Not reviewed	Do not fund