



August 24, 2016

Elise Hsieh, Executive Director
 Exxon Valdez Oil Spill Trustee Council
 4210 University Drive
 Anchorage, AK 99508-4626

Dear Elise:

Final FY 2017-2021 Proposal Submittal for Long-term Monitoring

17120114-A. Program Management I – Program Coordination and Science Synthesis

Gulf Watch Alaska, the long-term monitoring program of the *Exxon Valdez* Oil Spill Trustee Council (EVOSTC), has finalized our program and project proposals for fiscal years 2017-2021 funding based on comments received from EVOSTC’s Science Panel on May 19, 2016. Below is the final budget summary and response to Science Panel comments for the Program Management I project.

EVOSTC Funding Requested (including 9% GA)

FY17	FY18	FY19	FY20	FY21	TOTAL
\$225,700	\$225,400	\$227,900	\$236,600	\$248,300	\$1,164,000

Non-EVOSTC Funding Available

FY17	FY18	FY19	FY20	FY21	TOTAL
\$69,000	\$69,000	\$69,000	\$69,000	\$69,000	\$345,000

Science Panel comment: *The Panel is encouraged and gratified by Mandy Lindeberg’s acceptance and participation in the role of Science Lead and looks forward to her leadership. The Panel did express concern that the science coordinator position is intended to be filled after the start of the Program. This key position will be responsible for the design and implementation of the Program and it may take longer than anticipated to find an individual with the appropriate education and skill sets. Is there a plan in place, if the hiring process takes longer than planned or a qualified candidate is not identified? If the position is not a NOAA employee as hoped, will this impact the projected five year cost?*

PI Response:

- The Science Panel's concern for filling this key position is very appropriate. We have not treated the issue of hiring a Science Coordinator or Program Coordinator lightly. National Oceanic and Atmospheric Administration (NOAA)/National Marine Fisheries Service leadership has now approved administration of these positions and there are options to deal with any delays without additional costs to the program.

The Science Coordinator will be a NOAA employee located at the Auke Bay Laboratory in Juneau. The creation of a NOAA position has been approved and will be advertised in fall 2016. A qualified individual has been identified; however, the position will be advertised competitively and the most qualified individual will be hired. We hope to bring on Dr. Robert Suryan as our Science Coordinator who has recently moved to Juneau from Oregon State University's Department of Fisheries and Wildlife (Assoc. Prof.) and brings a wealth of knowledge on marine ecosystems and long-term population dynamics to our program. Dr. Suryan also has history with the EVOS and was part of the Alaska Predator Ecosystem Experiment (APEX) program during the 1990s.

The Program Coordinator will be a NOAA contractor. A request for proposals for a qualified contractor who can perform the work within the approved budget will be advertised in fall 2016. The current Science Coordinator, Donna Aderhold, has indicated interest in submitting a proposal for the Program Coordinator contract; however, the contract will be awarded to the most qualified, cost effective proposer. Donna's understanding of the program and expertise with marine science practices and policies (including National Environmental Policy Act compliance and Marine Mammal Protection Act and Endangered Species Act regulatory processes), scientific groups, and being a wildlife ecologist will strengthen our program.

Curriculum vitae for both candidates have been provided in the Program proposal Attachment I.

- \$44K was moved laterally from PM II to PM I's budget in an effort to reduce costs in the PM II proposal and address unforeseen needs in the PM I budget (e.g., additional costs for program coordinator position recently required by NOAA).

Sincerely,

Mandy Lindeberg
Gulf Watch Alaska Program Lead designate

Attachment: Gulf Watch Alaska: Environmental Drivers Component Project Proposal:
17120114-A—Program Management I—Program Coordination and Science
Synthesis

**EVOSTC FY17-FY21 INVITATION FOR PROPOSALS
PROGRAM PROJECT PROPOSAL SUMMARY PAGE**

Project Title

Gulf Watch Alaska:

17120114-A—Program Management I - Program Coordination and Science Synthesis

Primary Investigator(s) and Affiliation(s)

Mandy Lindeberg, NOAA Auke Bay Laboratories

Date Proposal Submitted

24 August 2016

Project Abstract

This project is the Program Management Component I of the integrated Long-term Monitoring of Marine Conditions and Injured Resources proposal submitted by Lindeberg et al. (2016) to the *Exxon Valdez* Oil Spill Trustee Council. This project explicitly provides for program coordination and science synthesis of data collected under the long-term monitoring program, which we refer to as Gulf Watch Alaska (GWA). The GWA Program Management II proposal compliments this proposal and addresses administration, logistics, and outreach. The leadership team of the GWA program (comprised of PM I and II) manage over two dozen principal investigators and collaborators producing a wealth of scientific information on the northern Gulf of Alaska ecosystem and spill-affected area. Program coordination and science synthesis is a key component that improves linkages between monitoring efforts spanning large regional areas (Prince William Sound, Gulf of Alaska shelf, lower Cook Inlet). Program coordination includes facilitating program planning and sharing of information between principal investigators, other Trustee funded programs, and non-Trustee organizations. High quality products and science synthesis efforts help communicate monitoring results by delivering reports, publishing data, developing scientific papers, supporting outreach and integrating information across the entire program. The GWA program has matured in the first five years and successful management of the program will continue into the next five-year increment.

EVOSTC Funding Requested (*must include 9% GA*)

FY17	FY18	FY19	FY20	FY21	TOTAL
\$225.7	\$225.4	\$227.9	\$236.6	\$248.3	\$1,164.0

Non-EVOSTC Funding Available

FY17	FY18	FY19	FY20	FY21	TOTAL
\$69.0	\$69.0	\$69.0	\$69.0	\$69.0	\$345.0

1. Executive Summary

The Gulf of Alaska (GOA) in the northeastern Pacific Ocean is considered to be one of the most productive marine ecosystems in the world, with numerous complex interactions and food webs (Spies 2006a). Primary and secondary production (phytoplankton and zooplankton) are considered to be key drivers of the overall ecological productivity and function within the region. The northern GOA watersheds, estuaries, and bays are part of a larger, interconnected oceanic system in which natural physical forces such as currents, upwelling, downwelling, precipitation and runoff, all play important roles in determining regional primary productivity (Mundy 2005, Harwell et al. 2010).

The northern GOA hosts a wide variety of commercially important species that support many of Alaska's coastal communities as well as the state-wide economy. The groundfish fisheries of the northern GOA contributed an estimated \$375 million dollars in gross product value in 2012 (A'mar et al. 2013), while the Cook Inlet driftnet and Prince William Sound (PWS) purse seine salmon fisheries provided a five-year average of \$61.4 million in real gross earnings to permitted commercial fishers from 2007-2011 (Shriver 2012). Tourism in these areas also plays a large role in the economies of the coastal communities of the GOA, home to six U.S. National Parks, the Alaska Maritime National Wildlife Refuge, and numerous Alaska State Parks and recreational areas. Charter fishing, wildlife and eco-tours, and cruise ships also capitalize on the amazing ecological diversity and productivity of the area.

STATEMENT OF THE PROBLEM

Several large-scale ecological perturbations have occurred within the northern GOA region over the past century. In March, 1964, a magnitude 9.2 earthquake shook Southcentral Alaska, causing areas of land to displace as much as 18 meters and areas of uplift as much as 9 meters near the epicenter in PWS (ADMM 1964). Large areas of uplifted terrain from the earthquake elevated nearshore habitats above the intertidal zone, changing these coastal ecosystems. In March of 1989, the *Exxon Valdez* oil tanker ran aground on Bligh Reef spilling an estimated 750,000 barrels of crude oil into PWS (Rice et al. 1996). The spill devastated coastal marine habitats and their occupants, as well as the dependent coastal communities of the area, from Cordova to Kodiak. In the 25 years following the *Exxon Valdez* oil spill (EVOS), numerous studies and efforts were conducted to understand the impacts of the spill on the region and restore injured resources through work funded by the *Exxon Valdez* Oil Spill Trustee Council (EVOSTC) (Mundy 2005, Spies 2006b, Harwell et al. 2010). As time has progressed, chronic effects directly related to the spill have become more difficult to ascertain due to attenuation of the oil within the environment, regime shifts, changing climate, natural variability, and anthropogenic changes.

Long-term observations are fundamental requirements to detect ecological changes due to natural or manmade drivers such as the EVOS. Full recovery from the EVOS will take decades and requires long-term monitoring of both the injured resources and factors other than residual oil that may continue to inhibit recovery or impact resources that have recovered. Long-term monitoring information is necessary for assessing recovery of injured species, managing those resources along with the services they provide, and informing the communities who depend on those resources. In order to accomplish this, a monitoring program must have strong program coordination that produces not only long-term datasets but informative synthetic interpretation of those datasets.

BACKGROUND

Since the EVOS, there have been numerous planning efforts to develop a coordinated, long-term monitoring strategy for the oil spill affected area, including: the overall guidance in the 1994 Restoration Plan; the

detailed ecosystem monitoring plans of the 2002 Gulf Ecosystem Monitoring and Research Program; and more specific plans such as the nearshore restoration and ecosystem monitoring plans (Schoch et al. 2002, Dean and Bodkin 2006). In addition, the National Park Service (NPS) has developed and implemented an ecosystem-monitoring program, under the Inventory and Monitoring Program, for national parks within the EVOS-affected region (Katmai and Kenai Fjords National Parks). The National Oceanic and Atmospheric Administration's (NOAA's) Alaska Fisheries Science Center has initiated a fisheries oceanographic survey to monitor the pelagic ecosystem over the continental shelf in the GOA and University of Alaska Fairbanks' (UAF's) long standing GAK-1 oceanographic station and Seward Line transect. This program builds on a decades-long time series established for the central and western GOA. All of these plans recognize that monitoring programs in this region face constraints from insufficient funding to meet all needs, the logistics of sampling in remote areas, and the challenge of monitoring a system known to experience broad ecosystem changes on decadal and multi-decadal scales. The recent tragedy of the Deepwater Horizon oil spill in the Gulf of Mexico further highlights the need for robust long-term observations of marine resources and conditions.

The EVOSTC initiated funding for the Gulf Watch Alaska (GWA) Long-Term Monitoring Program in 2012 (McCammon et al. 2011). The program has been a consortium of 15 field projects, ten of which started before 2012 and several with data sets extending prior to the EVOS. A wide array of information and tools have been coordinated and synthesized by the GWA program to date (published datasets for public access online; Annual Reports, 2012-15; Synthesis Report in 2015; principal investigator [PI] journal publications, etc.). The program has fostered partnerships that include: professional administrative support (PWSSC - Prince William Sound Science Center); advanced data housing (AOOS - Alaska Ocean Observing System); large-scale nearshore ecological monitoring under the NPS Southwestern Alaska inventory program (SWAN); oceanographic monitoring through the UAF/Kasitsna Bay Laboratory/National Estuarine Research Reserve System/PWSSC partnerships; multi-agency and Northern Gulf Oceanic Society pelagic ecosystem monitoring; and finally, a significant outreach capacity through the agency partners, AOOS and PWSSC. Student participation has provided for deeper investigations into marine bird abundances, forage fish sampling methods, oceanography and sea otter diets. Collectively, this group represents unsurpassed expertise and knowledge of the GOA ecosystem and spill-affected region. A monitoring program of this size requires a cohesive management team to provide leadership, administration, coordination, and communication at all levels.

OVERALL GOALS & OBJECTIVES

The overarching goal of the GWA program is to provide sound scientific data and products to inform management agencies and the public of changes in the environment and the impacts of these changes on injured resources and services. Specifically, the goals are to:

- A. *Collect and analyze long-term ecological monitoring information from the Gulf of Alaska Exxon Valdez Oil Spill affected region;*
- B. *Make monitoring data publicly available for use by stakeholders, managers, and in integrated analyses; and*
- C. *Assess monitoring data holistically in order to better understand the range of factors affecting individual species and the ecosystem.*

The program coordination and science synthesis efforts support these goals by: documenting the overall scientific information from the monitoring program, improving information sharing between program PIs

and with other EVOSTC programs (Herring Research and Monitoring (HRM), Data Management, Lingering Oil, and Cross-program Publishing Groups). There are three primary objectives for continuing the GWA program's coordination and science synthesis project:

1. *Provide communication and data sharing;*
2. *Provide and document integration of monitoring results; and*
3. *Provide communication of monitoring information to trustee agency, other resource managers and the public.*

2. Relevance to the Invitation for Proposals

This proposal has relevance to the invitation by facilitating program management and science synthesis of GWA's long-term monitoring program in the following categories:

1. Responds to priorities, focal areas, and areas of interest in the FY 2016 Invitation for Proposals;
2. Directly addresses the goals and priorities for "Monitoring and Research" outlined by the EVOSTC in the 1994 EVOS Restoration Plan; and
3. Follows additional EVOSTC guidance including the 2010 & 2014 Injured Resources and Services Update.

The GWA program directly responds to the focal area of long-term monitoring of marine conditions and injured resources. GWA is an integrated monitoring program with field projects nested within three monitoring components or areas of interest (environmental drivers, pelagic monitoring, and nearshore monitoring). The program has overarching program goals to collect ecological data and provide this information to resource managers, and to improve how information is used to manage species injured by the EVOS.

The GWA program coordination and science synthesis project proposes to continue providing leadership staff for researchers and to help develop program-level synthetic reports, scientific publications, and scientific presentations to managers and communities. The program management team of GWA will work collectively to ensure the program milestones are met and all proposed work is completed, including timely delivery of report and data products. A successfully managed program will benefit the EVOSTC, other EVOSTC focus areas (HRM, Data Management, Lingering Oil, and Cross-program Publication Groups), agencies, non-governmental agencies, educators, and the public as we face a changing GOA ecosystem.

RELEVANCE TO THE 1994 RESTORATION PLAN GOALS AND SCIENTIFIC PRIORITIES AND INJURED RESOURCES

The 1994 Restoration Plan identifies the continuing need for a sustained and interdisciplinary monitoring system to inform restoration needs and activities for injured resources and services. Specific language in the 1994 Restoration Plan cites the need for monitoring to “understand the physical and biological interactions that affect an injured resource or service, and may be constraining its recovery,” recommends an “ecosystem approach,” and recognizes that “an ecosystem approach to restoring injured resources and services may require restoration activities that address a resource’s prey or predators, or the other biota and physical surroundings on which it depends...” The management strategy we propose to implement for the overall long-term monitoring program maintains a priority for continuing long-term datasets of injured species and to use an ecosystem approach to determine recovery from the EVOS or other perturbations.

Guidance from the EVOSTC recognizes there are not sufficient funds to accomplish all necessary restoration and monitoring activities and that partnerships are necessary to meet EVOSTC goals. Specifically, the 1994 Restoration Plan states that “restoration will take advantage of cost-sharing opportunities where effective” and “priority shall be given to strategies that involve multi-disciplinary, interagency, or collaborative partnerships.” Our proposed monitoring program will expand the efforts previously funded by EVOSTC through leveraging collaborations with multiple agency monitoring programs and other research programs (such as those of the North Pacific Research Board [NPRB] and the AOOS), and with HRM program under this funding opportunity.

The 1994 Restoration Plan included a policy that “restoration will include a synthesis of findings and results, and will also provide an indication of important remaining issues or gaps in knowledge.” The GWA program management team will be key for accomplishing this policy which has an understanding of scientific project results and coordination with the data management program since the onset of the program (2012).

We are also committed to the 1994 Restoration Plan policy that “Restoration must reflect public ownership of the process by timely release and reasonable access to information and data.” GWA has a data management policy that addresses this directly in a transparent and timely fashion. Participating PIs are required, at the beginning of each 5-year increment, to sign a GWA program and data management plan (see Attachment 1 at end of this document). Upon acceptance of this program by the EVOSTC, a GWA data management plan with signature sheet will be distributed to all PIs for review and acceptance via signature.

3. Project Personnel

The GWA program coordination and science synthesis personnel are part of the Program Management Team (PMT) and consist of the Program Lead, Mandy Lindeberg (in-kind contribution 0.5 full time equivalent [NOAA FTE]), the Program Science Coordinator (NOAA term-funded 1 FTE) and the Program Coordinator (NOAA affiliate) (Figure 1). These personnel will provide leadership and work closely with all program members.

Program Lead

Mandy Lindeberg (NOAA) *(Please see CV attached to program proposal)*

Fisheries Research Biologist
NOAA Auke Bay Laboratories
Alaska Fisheries Science Center, National Marine Fisheries Service (NMFS)
17109 Pt. Lena Loop Rd, Juneau, Alaska 99801
(907) 789-6616
mandy.lindeberg@noaa.gov

Lindeberg will serve as overall program and science lead and the primary point of contact for the EVOSTC. She will ensure program coordination, collaborations and awareness with other agencies and monitoring initiatives in the region. This position combines the responsibilities held in the previous 5-year program by Molly McCammon (former program lead) and Kris Holderied (former science lead). If awarded another five years of funding, program and science leadership can be led by one individual instead of two now that the program has advanced to a more mature, operational state. We think this approach will lead to reduced program management costs. Lindeberg has been involved in oil spill research and nearshore habitat studies throughout Alaska's coastline for over 25 years. Her research includes oil spill studies on injury assessment and long term monitoring of nearshore flora, fauna, and persistence of oil in the spill region. Lindeberg has been a part of the GWA program serving as Pelagic Component Lead (2013-16), co-PI for the Nearshore component (2011-16), and co-PI for the Lingering oil component (2011-16).

Lindeberg will be responsible for overseeing coordination of individual program components, science synthesis and integration, and ensuring a coordinated monitoring program that meets project milestones and deliverables. She will oversee project synthesis efforts and coordinate preparation of scientific reports and papers for the EVOSTC, and work with investigators to support outreach efforts. She will also be responsible for coordinating the efforts of the GWA program with the HRM program, other Trustee programs, and non-Trustee organizations. Lindeberg will oversee the work of the Science Coordinator and Program Coordinator.

Science Coordinator

TBD, PhD, NOAA FTE

The Science Coordinator will be a NOAA employee located at the Auke Bay Laboratory in Juneau. The creation of a NOAA position has been approved and will be advertised in fall 2016. A qualified individual has been identified (see CV in program proposal, Attachment 1); however, the position will be advertised competitively and the most qualified individual will be hired.

The Science Coordinator will lead efforts to integrate and synthesize data collected under the program while also providing technical review, editing, research, and writing of program documents. The Science Coordinator will work directly with the Science Review Team and Science Coordinating Committee (See Figure 1). In addition, the Science Coordinator will seek partnerships between GWA and external programs to leverage the data and platforms supported GWA to increase the regional significance and prestige of the program. The Science Coordinator will work directly with journal's special issue process and EVOSTC staff to ensure publication of peer-reviewed articles and scientific reports, promote across-component synthesis publications, and lead small working groups assembled to pursue specific scientific issues. The Science Coordinator provides technical feedback on data tools and user access, and works closely with the Program

Lead, Administrative and Outreach Lead (PWSSC Director), and Program Coordinator on scientific meeting agendas, discussion facilitation, and more.

Program Coordinator

TBD, NOAA affiliate

The Program Coordinator will be a NOAA contractor. A request for proposals for a qualified contractor who can perform the work within the approved budget will be advertised in fall 2016. The current Science Coordinator, Donna Aderhold, has indicated interest in submitting a proposal for the Program Coordinator contract position (see CV in program proposal, Attachment 1); however, the contract will be awarded to the most qualified, cost effective proposer.

The Program Coordinator will work closely with PMT members to provide administrative assistance to the program and PIs with primary efforts toward compiling program reports and budgets, tracking progress and program accomplishments. Duties include assisting the Science Coordinator and the Administrative and Outreach Lead (PWSSC Director) with meeting and teleconference logistics, notifying PIs of due dates, facilitating communication between program teams (i.e., Science Coordinator, Science Review Team, and Science Coordinating Committee), small working groups (i.e., plankton working group, integrated pelagic surveys working group), and all of the program PIs, providing content updates to internet and program outreach materials, and outreach events.

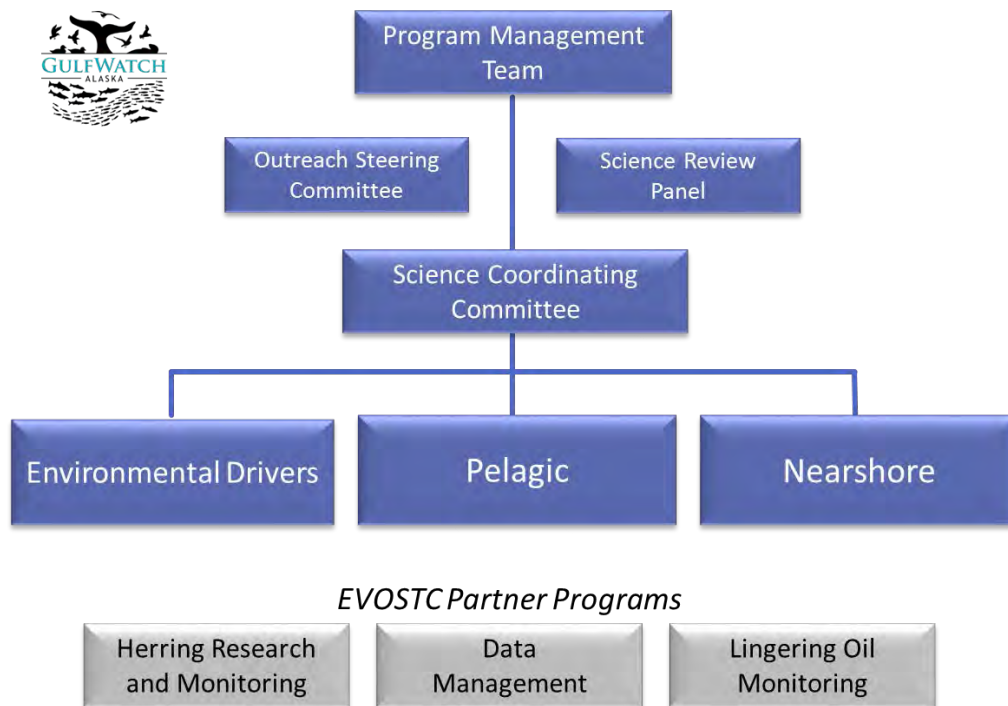


Figure 1. Gulf Watch Alaska organizational chart.

4. Project Design

A. OBJECTIVES

The program coordination and science synthesis project is not a hypothesis-driven component of the program. However, management of the GWA program has several objectives for the next five-year increment (FY2017-21). These objectives are to remain focused on:

1. Provide **communication and data sharing** - this includes coordinated **planning** between PIs of the individual monitoring projects, as well as with other agencies and research organizations;
2. Provide and document **synthesis and integration of monitoring** results across programs - working with project PIs, data management, HRM, and lingering oil teams as well as other agencies and research organizations; and
3. Provide **communication of monitoring information** to Trustee agencies, other resource managers, and the public - this includes data management, data synthesis, presentation and outreach, as well as other agencies and research organizations.

Program coordination and science synthesis efforts will be closely aligned with our program administration and outreach efforts, as well as from other EVOSTC-funded programs (HRM, data management, lingering oil and cross-program publication groups). The program coordination and science synthesis efforts of the GWA program will help fill a gap between data collection and synthetic analyses and communication needed to help understand drivers of ecological patterns and factors that may be limiting injured resources in the spill affected region. Science coordination and synthesis will bridge gaps between monitoring projects and other research in the spill-affected region, including NPRB, the Gulf of Alaska Integrated Ecosystem Research Program (GOAIERP), the NPS Inventory and Monitoring Program, Oil Spill Recovery Institute (OSRI), other agency monitoring programs. Additionally, relationships can include separately-funded projects of AOOS, and multi-agency and university collaborative programs such as the Geographic Information Network of Alaska (GINA), Alaska Statewide Digital Mapping Initiative, and Landscape Conservation Cooperatives (LCCs).

B. PROCEDURAL AND SCIENTIFIC METHODS

Mandy Lindeberg will serve as the program lead for the GWA program and contribute approximately 6 months of in-kind labor (NOAA) to program coordination and synthesis efforts. Upon approval of funding by the EVOSTC, a full-time science coordinator will be hired to conduct the science coordination and synthesis efforts and program coordinator will be hired to assist with program planning, tracking, reporting and outreach efforts.

OBJECTIVE 1: PROVIDE COMMUNICATION AND DATA SHARING

The Program Lead, with support from the Science and Program Coordinators will:

- a. Coordinate with the Administrative and Outreach Lead and program PIs on overall GWA planning, meetings, reporting, and evaluation.
- b. Collaborate on ways to provide schedules, deadlines, and field work to interested parties (e.g., Google calendar, Google sites, public website, shared workspaces, etc.).
- c. Facilitate quarterly PI meetings (teleconferences and gathering locations).
- d. Ensure quality control and timeliness of program data to data management program.

- e. Work to coordinate with the HRM program Lead on program implementation and joint information needs.
- f. Communicate with other EVOSTC funded programs (e.g., Lingering Oil, Cross-Program Publication Groups).
- g. Collaborate with groups outside the GWA program (NPRB GOAIERP, NPS, GINA, LCCs, etc.) on joint synthesis of information.

OBJECTIVE 2: PROVIDE AND DOCUMENT SYNTHESIS AND INTEGRATION OF MONITORING RESULTS ACROSS PROGRAMS

The Program Lead, with support from the Science and Program Coordinators will:

- a. Prepare and compile required NOAA semi-annual reports with Administrative Lead as part of cooperative agreement.
- b. Compile annual and final reports on overall science monitoring effort, working with the Administration Lead, PIs, data management provider, and outreach team.
- c. Prepare and compile Annual Work Plans with PIs and respond to EVOSTC review.
- d. Assist PIs with data synthesis, small working groups and publications within the program.
- e. Prepare a monitoring data synthesis report for Year 3 (8 years of monitoring) and/or special issue consideration with PIs for joint workshop between GWA and HRM programs.
- f. Collaborate with Administrative Lead and HRM Lead to plan Year 3 joint workshop between GWA and HRM programs with EVOSTC staff.
- g. Coordinate with PIs to improve integration of multi-disciplinary monitoring activities within geographic regions (PWS, outer Kenai Peninsula coast, lower Cook Inlet) and of monitoring within single disciplines between different regions.
- h. Collaborate with other Trustee programs (HRM, Lingering Oil and Cross-Program Publication Groups) and non-Trustee organizations to share resources, data and foster partnerships to enhance monitoring efforts and cross-pollinate scientific knowledge.

OBJECTIVE 3: PROVIDE COMMUNICATION OF MONITORING INFORMATION TO TRUSTEE AGENCIES, OTHER RESOURCE MANAGERS, AND THE PUBLIC

The Program Lead, with support from the Science and Program Coordinators will:

- a. Communicate directly with EVOSTC staff and their Science Review Panel on program activities and progress.
- b. Work with program management team, outreach team and PIs to communicate program progress to EVOSTC and the public by continuing to develop current content online, new presentations and create outreach opportunities.
- c. Work with data management team, outreach team and PIs to develop data exploration tools to better communicate technical and scientific information to stakeholders and the public.
- d. Network with other monitoring programs and regional stakeholders to identify information needs that may be met by adopting new ways to communicate information.

C. DATA ANALYSIS AND STATISTICAL METHOD

The primary focus of the program-wide science synthesis effort will be the integration of data between multi-disciplinary projects and helping to provide improved access to that information for resource

managers, coastal planners, the research community and the public. Please see the individual project proposals for details on data analysis and statistical methods (project proposals, section #4.C.)

D. DESCRIPTION OF STUDY AREA

The study area will be within the EVOS region as outlined in the invitation. Specific areas are identified in each project proposal housed under the program proposal “Gulf Watch Alaska: Long-Term Monitoring of Marine Conditions and Injured Resources” submitted by Lindeberg et al. (2016).

5. Coordination and Collaboration

WITHIN THE PROGRAM

The following outlines how the GWA leadership personnel will achieve coordination and collaboration activities within the program:

Program Lead - will be responsible for overseeing coordination of individual program components, science synthesis and integration, and ensuring a coordinated monitoring program that meets project milestones and deliverables. These duties include:

- Oversight of project synthesis efforts and coordinate preparation of scientific reports/ papers for the EVOSTC and the public.
- Coordinating efforts of the GWA program with the data management program, the HRM program, Lingering Oil program, and potential Cross-Program Publication Groups.
- Working with Outreach Coordinator and PIs to support outreach efforts.

Science Coordinator - will provide program technical writing, review, and science coordination, including:

- Author and lead production of program synthesis products and promote integration of GWA projects.
- Review and collation of reports and work plans.
- Integrate GWA data and platforms with external programs such as HRM and NOAA’s Gulf Survey.
- Editorial review, website development/ updates, and assistance with coordination of outreach events for each project.
- Attendance and presentation of program information at scientific meetings will be encouraged if funding opportunities arise to facilitate coordination of ideas and information outside of the program.

Program Coordinator - will facilitate meetings, reporting, outreach, sharing, and publication of information from the various monitoring projects. These activities will include:

- Planning and documenting all quarterly teleconferences and meetings.
- Tracking and assisting with data and metadata publication in the GWA Data Portal.
- Tracking progress towards deadlines and program products.
- Assisting with maintenance and updates for program website for purposes of conveying important program goals and information to the group.
- Assist with outreach events.

Program Lead, Science and Program Coordinators - individual project activities will continue to be conducted as a coordinated effort for all of the following monitoring projects within the program:

- Gulf of Alaska mooring (GAK-1) monitoring - *UAF*

- Seward line monitoring - *UAF*
- Oceanographic conditions in Prince William Sound - *PWSSC*
- Oceanographic monitoring in Cook Inlet - *Kachemak Bay Research Reserve (KBRR)/ University of Alaska Anchorage (UAA) and NOAA Kasitsna Bay Laboratory*
- Continuous plankton recorder - *Sir Alister Hardy Foundation for Ocean Science (SAHFOS)*
- Long-term killer whale monitoring - *North Gulf Oceanic Society*
- Humpback whale predation on herring - *NOAA NMFS Auke Bay Laboratory*
- Forage fish distribution and abundance - *U. S. Geological Survey (USGS) Alaska Science Center*
- Prince William Sound marine bird surveys - *U.S. Fish and Wildlife Service (USFWS)*
- Nearshore systems in the Gulf of Alaska and Kachemak Bay - *USGS Alaska Science Center/NPS SWAN, UAF*

Administration and Outreach: PWSSC and AOOS - The Program Lead and Science and Program Coordinators will work closely with PWSSC staff to assist with overall administrative activities of the program, including developing reports and planning meetings and outreach events.

Data management provider - The Program Lead and Science and Program Coordinators will work closely with the data management staff to maintain data access tools, providing data and feedback in the data portal, and metadata generation tools. The Program Science and Program Coordinators will continue to work with all project PIs within the program to ensure new data are loaded to the portal, have undergone QA/QC measures, and have appropriate metadata available for public access.

WITH OTHER EVOTC-FUNDED PROGRAMS AND PROJECTS

As part of GWA, the Program Lead, Science Coordinator, and Program Coordinator will continue to work closely with data management, HRM, and Lingering Oil program focus areas and PIs to maintain reporting consistencies in addition to sharing information. This would include out of cycle or above ceiling projects funded by the EVOTC. The GWA program management team and HRM program Lead will continue to participate in annual meetings and teleconferences, and will work closely to encourage information sharing and address shared questions between the programs and outreach efforts.

WITH TRUSTEE AND MANAGEMENT AGENCIES

As described in previous sections, the GWA program integrates ecosystem monitoring activities with NOAA, USFWS, USGS, BOEM and NPS in the GWA program. We also coordinate with Alaska Department of Fish and Game researchers and managers through coordination on synthesis activities with the HRM program.

WITH NATIVE AND LOCAL COMMUNITIES

The Program Lead and Science and Program Coordinators will work closely with the Administrative and Outreach Lead, Outreach Coordinator and Outreach Steering Committee (PWSSC, AOOS) to provide content and information for public outreach events. More information on the GWA programs plans for outreach with Native and local communities can be found in our Administration, Logistics, and Outreach, Program, and individual monitoring project proposals.

6. Schedule

PROGRAM MILESTONES

Objective 1. Provide communication and data sharing - this includes coordinated planning between PIs of the individual monitoring projects, as well as with other agencies and research organizations.

Ongoing throughout project.

Objective 2. Provide and document integration of monitoring results across programs - working with project PIs, data management, HRM, and Lingering oil teams as well as other agencies and research organizations.

Ongoing throughout project.

Objective 3. Provide communication of monitoring information to trustee agencies, other resource managers, and the public - this includes data management, data synthesis, presentation and outreach, as well as other agencies and research organizations.

Ongoing throughout project.

MEASURABLE PROGRAM TASKS

Measurable program tasks to meet the above objectives are presented in Table 1 and described in more detail below.

Table 1. Schedule of Measurable Program Tasks.

Task	FY17				FY18				FY19				FY20				FY21			
	EVOSTC FY Quarter (beginning Feb. 1)																			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 1 Planning																				
Coordinator hires	X																			
Web-Outreach review		X				X				X				X				X		
Data Compliance			X				X				X				X				X	
FY22-26 proposal																				X
Task 2 Meetings																				
PI Meetings	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trustee Prog. review			X				X				X				X				X	
Yr. 3 Joint Workshop													X							
Task 3 Reporting																				
Annual Reports					X				X				X				X			
FY Work Plan (DPD)			X				X				X				X					
Yr. 3 Synthesis Rpt											X									
Yr. 17-21 Final Rpt																				X

FY 2017 (Year 6)

FY 17, 1st quarter (February 1, 2017 - April 31, 2017)

February: Compile and edit program status summary
April: Submit 5-year program status summary and special issue final manuscripts
Plan and coordinate quarterly program teleconference

FY 17, 2nd quarter (May 1, 2017-July 30, 2017)

May: Complete updates to program website and outreach materials
Prepare and disseminate work plan templates to group
June-July: Plan and coordinate quarterly program teleconference

FY 17, 3rd quarter (August 1, 2017 – October 31, 2017)

August: Compile and edit work plans for Year 7 and semi-annual report for NOAA
September 1: Submit annual program work plans and NOAA semi-annual report
September 30: Audit PI data compliance on workspace
October: Plan annual PI meeting and workshops
Review EVOSTC work plan comments

FY 17, 4th quarter (November 1, 2017- January 31, 2018)

November: Annual PI meeting and workshops
December-January: Preparation for and attendance at the Alaska Marine Science Symposium (AMSS)
Plan and coordinate quarterly program teleconference
Begin compilation of Year 6 annual report

FY 2018 (Year 7)

FY 18, 1st quarter (February 1, 2018 - April 31, 2018)

February: Compile and edit Year 6 annual report for EVOSTC and semi-annual report for NOAA
March 1: Submit Year 6 annual report for EVOSTC and semi-annual report for NOAA
April: Plan and coordinate quarterly program teleconference

FY 18, 2nd quarter (May 1, 2018-July 30, 2018)

May: Complete updates to program website and outreach materials
Prepare and disseminate work plan templates to group
June-July: Coordinate review and response to comments from proposal
Plan and coordinate quarterly program teleconference

FY 18, 3rd quarter (August 1, 2018 – October 31, 2018)

August: Compile and edit work plans for Year 8 and semi-annual report for NOAA
September 1: Submit annual program work plans and NOAA semi-annual report
September 30: Audit PI data compliance on workspace
October: Plan annual PI meeting and workshops
Review EVOSTC work plan comments

FY 18, 4th quarter (November 1, 2018- January 31, 2019)

November: Annual PI meeting and workshops
December-January: Preparation for and attendance at AMSS
Plan and coordinate quarterly program meeting/teleconference
Begin compilation of Year 7 annual report

FY 2019 (Year 8)

FY 19, 1st quarter (February 1, 2019 - April 31, 2019)

February: Compile and edit Year 7 annual report for EVOSTC and semi-annual report for NOAA
March 1: Submit Year 7 annual report for EVOSTC and semi-annual report for NOAA
April: Plan and coordinate quarterly program teleconference

FY 19, 2nd quarter (May 1, 2019-July 30, 2019)

May: Complete updates to program website and outreach materials
Prepare and disseminate work plan templates to group
June-July: Plan and coordinate quarterly program teleconference
Outreach events

FY 19, 3rd quarter (August 1, 2019 – October 31, 2019)

August: Compile and edit work plans for Year 9 and semi-annual report for NOAA
September 1: Submit annual program work plans and NOAA semi-annual report
Coordinate compilation of special journal issue or program synthesis report
September 30: Audit PI data compliance on workspace
October: Plan annual PI meeting and workshops
Review EVOSTC work plan comments

FY 19, 4th quarter (November 1, 2019- January 31, 2020)

November: Annual PI meeting and workshops
December-January: Plan Joint Science workshop, develop and present program content Preparation for and attendance at the Alaska Marine Science Symposium (AMSS)
Begin compilation of Year 8 annual report

FY 2020 (Year 9)

FY 20, 1st quarter (February 1, 2020 - April 31, 2020)

February: Participate in Joint Science Workshop with HRM program
Compile and edit Year 8 annual report for EVOSTC and semi-annual report for NOAA
March 1: Submit Year 8 annual report for EVOSTC and semi-annual report for NOAA
April: Plan and coordinate quarterly program teleconference

FY 20, 2nd quarter (May 1, 2020-July 30, 2020)

May: Prepare and disseminate work plan templates to group
June-July: Plan and coordinate quarterly program teleconference

FY 20, 3rd quarter (August 1, 2020 – October 31, 2020)
August: Compile and edit program work plans for Year 10 and semi-annual report for NOAA
September 1: Submit annual work plans to EVOSTC and semi-annual report to NOAA
September 30: Audit PI data compliance on workspace
October: Plan annual PI meeting and workshops
Review EVOSTC work plan comments

FY 20, 4th quarter (November 1, 2020- January 31, 2021)
November: Annual PI meeting and workshops
December-January: Preparation for and attendance at AMSS
Plan and coordinate quarterly program teleconference
Begin compilation of Year 4 annual report

FY 2021 (Year 10)

FY 21, 1st quarter (February 1, 2021 - April 31, 2021)
February: Compile and edit Year 9 annual report for EVOSTC and semi-annual report for NOAA
March 1: Submit Year 9 annual report for EVOSTC and semi-annual report for NOAA
April: Plan and coordinate quarterly program teleconference
Submit next- year program proposal
Continue planning for year 10 status summary report or special journal issue, in coordination with HRM lead and EVOSTC staff

FY 21, 2nd quarter (May 1, 2021-July 30, 2021)
May: Complete updates to program website and outreach materials
June-July: Coordinate review and response to comments from proposal
Plan and coordinate quarterly program teleconference

FY 21, 3rd quarter (August 1, 2020 – October 31, 2020)
August: Compile and edit semi-annual report for NOAA
September 1: Submit revised program proposal for FY 2022 invitation (pending EVOSTC invitation to propose)
September 30: Audit PI data compliance on workspace
October: Plan annual PI meeting and workshops
Review EVOSTC work plan comments
Coordinate compilation of initial draft of five-year status summary or special journal issue manuscripts

FY 21, 4th quarter (November 1, 2021- January 31, 2022)
November: Annual PI meeting and workshop
December-January: Preparation for and attendance at AMSS
Plan and coordinate PI program teleconference
Coordinate preparation and submission date of five-year status summary or joint special issue with HRM program and EVOSTC staff

7. Budget

BUDGET FORMS (ATTACHED)

Labor rates for program coordinators are escalated by approximately 3% each year of the proposed 5-year budget. Science Coordinator will be a benefited position, first year under contract with plans to try and convert to a NOAA Term-funded position. Program Coordinator will be a contracted position, no benefits. Funding is also requested for computers and minor supplies for these staff and travel for the program lead, science lead, and program coordinator to attend GWA meetings.

Please see program coordination and science synthesis project (GWA PM I) in the program budget workbook for details.

SOURCES OF ADDITIONAL FUNDING

NOAA will provide in-kind labor for Mandy Lindeberg to be Program Lead for GWA. Her in-kind labor will be supported for all 5 years of the EVOSTC funding cycle. She will devote a minimum of 6 months to the program each year (in-kind: 6 mos \$69K; 5 years \$345K).

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- ONLINE RESOURCES**
- Gulf Watch Alaska – <http://www.gulfwatchalaska.org/>
- Gulf Watch Alaska Data Portal – <http://portal.aos.org/gulf-of-alaska.php>
- EVOSTC Long-Term Monitoring Program – <http://www.evostc.state.ak.us/index.cfm?FA=projects.gulfwatch>

Attachment 1

DRAFT

Gulf Watch Alaska Program and Data Management

(FY 2017-2021)

Draft GWA Program and Data Management Plan (2017-21)

Purpose

The *Exxon Valdez* Oil Spill Trustee Council (EVOSTC) and state and federal agencies are supporting a second five-year block of a monitoring program in the Gulf of Alaska region impacted by the 1989 *Exxon Valdez* oil spill. This 20-year program is planned and funded in five-year increments. It builds upon the past 26 years of restoration research and monitoring funded by the EVOSTC and Federal and state agencies.

The Gulf Watch Alaska (GWA) Long-Term Monitoring Program management team considers it crucial that PIs have agreed on provisions and protocols that promote a consistent and seamless team effort for the collection and dissemination of data and scientific research results. The purpose of the program management plan is to support those efforts, and minimize administrative demands on researchers. The concurrence of the program management team, principal investigators, co-principal investigators and sub-contractors (hereafter referred to as principal investigators or PIs) in this consultative process is indicated by signature in Attachment A, which is revised as individuals join or leave the program. This plan is reviewed on an annual basis and can be amended by two-thirds vote of all PIs.

Requirements and Responsibilities

1. Internal program leadership and responsibilities

Key personnel for program leadership and component responsibilities are listed in Table A.1. Figure A.1 shows the GWA program organizational chart.

Table A.1. GWA key personnel listed by program group, name, affiliation, title and the percentage of time that person will devote to their role.

GWA Leadership Group	Name	Affiliation	Title/Role	% time
Program Management Team (PMT)	Mandy Lindeberg	NOAA	Program Lead	50%
	Katrina Hoffman	PWSSC	Administrative Lead	25%
	To Be Determined	NOAA	Science Coordinator	100%
	To Be Determined	NOAA	Program Coordinator	100%
Science Coordinating Committee (SCC)	Russell Hopcroft	UAF	Env. Drivers Lead	10%
	Mayumi Arimitsu	USGS	Pelagic Lead	10%
	Heather Colletti	NPS	Nearshore Lead	10%
	Seth Danielson	UAF	Env. Drivers Alt.	5%
	John Piatt	USGS	Pelagic Alt.	5%
	Daniel Esler	USGS	Nearshore Alt. Lingering Oil liaison	5%
Science Review Panel (SRP)	Harold Batchelder	PICES	science review	volunteer
	Richard Brenner	ADF&G	science review	volunteer
	Leslie Holland-Bartels	USGS ret.	science review	volunteer
	Terrie Klinger	UW	science review	volunteer
	Stanley (Jeep) Rice	NOAA ret.	science review	volunteer

Program Management Team. The team consists of the Program Lead, the Program Administrative and Outreach Lead, the Program Science Coordinator, and the Program Coordinator. The PMT meets at least monthly, on average, and sometimes weekly depending on the needs of the program.

The Program Lead (Mandy Lindeberg, NOAA) will be responsible for overseeing coordination of individual program components, science synthesis and integration, and ensuring a coordinated monitoring program that meets project milestones and deliverables.

Program Administrative Lead and Outreach Lead (Katrina Hoffman, PWSSC) will be responsible for logistics for science review and principal investigator meetings and non-Trustee agency travel to those meetings, as well as timely submission of all project reports and monitoring of overall program spending. As the fiscal agent for the non-Trustee Agency program cooperative agreement, the PWSSC will be responsible for financial administration of that award and all sub awards, timely submission of financial reports, and any auditing activities.

Program Science Coordinator (TBD) will provide technical editing, research and writing of program documents, work directly with journals and EVOSTC staff to ensure publication of peer-reviewed articles and scientific reports, promote across component synthesis publications, provide technical feedback on data tools and user access, and work closely with the Program Lead, Administrative and Outreach Lead, and Program Coordinator on scientific meeting agendas, discussion facilitation, and more.

Program Coordinator (TBD) will work closely with Program Management Team members to provide administrative assistance to the program and PIs. This includes collaborating with the Administrative and Outreach Lead on meeting and teleconference logistics, notifying PIs of due dates, facilitating communication between program teams (i.e., Science Coordinator, Science Review Team, and Science Coordinating Committee), small working groups (i.e., marine birds working group, plankton working group), and all of the program PIs, providing content updates to program outreach materials, and assisting with annual program planning and travel.

Program Outreach Steering Committee - Katrina Hoffman (PWSSC) will be Outreach Lead and Outreach Coordinator will be Stacy Buckelew (PWSSC & Axiom). Outreach Steering Committee members will include staff from the following organizations: Alaska Ocean Observing System (AOOS), PWSSC, and OSRI based in Cordova, the Alaska SeaLife Center (ASLC) in Seward, the Kachemak Bay Research Reserve (KBRR) in Homer, and Alaska Sea Grant. This group will provide input on how to maximize community involvement in the oil spill region and will provide guidance on other outreach products as needed.

Program Science Coordinating Committee consisting of leads for the monitoring projects comprising the GWA Program will assist the Program Science Lead. As the guiding science body for the GWA Program, the Science Coordinating Committee will provide overall scientific leadership for program integration, data exchange and synthesis, dispute resolution, and assessing the need for any program revisions during the 5-year program. The Committee will help ensure coordinated planning of field and lab work to be performed in line with the approved statements of work and the goals of the overall program. The committee will help ensure the program is truly integrated, informs the management of injured resources, and is contributing to the restoration of the spill-impacted region and resources. They will also plan annual principal investigator meetings, help organize any special issue publications, represent the GWA Program at outside scientific and public meetings, proactively promote scientific partnerships with other programs as applicable, and finally help facilitate outreach opportunities. This committee will include data management

services, Lingering Oil program, and Herring Research and Monitoring (HRM) program as needed. Terms of Reference for this committee will be adopted which includes staggered, 2-year terms for membership. The Science Coordinating Committee and the Program Management Team will meet together at least quarterly.

Program Science Review Panel. The Program Management Team and the Science Coordinating Committee select four members for this panel representing external scientific expertise in each of the Science Projects, to provide periodic external advice to the program. This panel meets during the annual PI meeting to assist the science lead and Science Coordinating Committee. They ensure proper design, objective evaluation, identify possible revisions and anticipate future needs for the GWA program. Recommendations from this panel may be incorporated into revisions to the annual work plans.

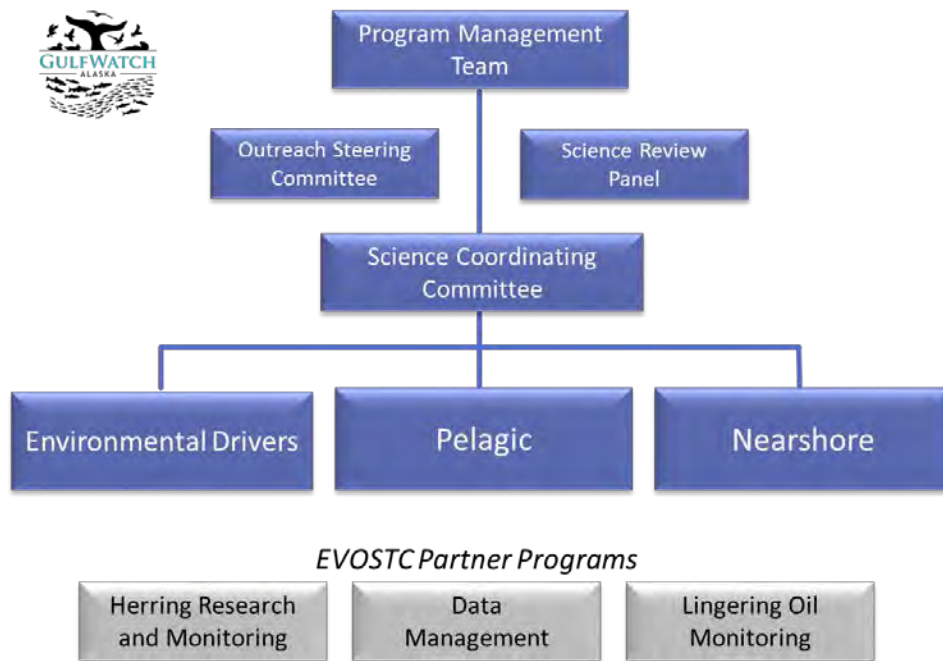


Figure A.1. GWA organizational chart.

2. Program Coordination

Coordination among project investigators. Program coordination among principal investigators (PIs) on the research team will be accomplished primarily through e-mail and quarterly audio and/or video teleconferences or webinars. PIs will meet quarterly with the Program Management Team and Science Coordinating Committee to ensure continuous communication and collaboration between program projects and monitoring components and to resolve any issues as they arise.

Annual investigator meetings are planned, tentatively in November, for all investigators to share information among themselves and potentially with investigators in other related programs, especially the EVOSTC'S HRM program and any other larger efforts underway in the Gulf of Alaska. The meetings will provide an opportunity to update the Program Science Review Panel and, as appropriate, the EVOSTC Science Panel, improve coordination among projects, and provide outreach and public input opportunities. The in-person meetings will also ensure proper communication among the individual monitoring

components and provide an opportunity to informally review results of field activities and develop initial work plans for the following year.

Coordination with Herring Program. In order to meet EVOSTC goals for the combined Long-Term Monitoring (GWA) and HRM programs, the GWA program will be coordinated with the EVOSTC HRM Program. The GWA Program Science Lead and HRM Program Lead have identified specific areas of common interest such as oceanographic conditions, juvenile herring feeding on zooplankton, and herring predation by whales, fish, and birds. All of these factors have the potential to inhibit or enhance recovery of herring populations. The forage fish component of the GWA Pelagic Monitoring Project will be coordinated with work on herring populations, as well as other forage fish, in the Herring Program. The GWA and HRM Program teams will work together to identify historic data that both programs would benefit from as part of their coordinated data management efforts. In addition, representatives of the HRM Program will be invited to the GWA PI meeting, and representatives of the GWA Program will be invited to the HRM PI meeting.

Coordination with other programs. The GWA Program will be coordinated with other scientific programs in the region as appropriate and as opportunities arise. Ideas for collaboration and coordination are encouraged and should be forwarded to the Program Management Team. Coordination should include contingency planning if collaborative efforts are not funded. GWA Program Lead and the Science Coordinator will assist with this effort.

3. Planning field seasons

PIs will review field season plans at annual PI meetings and identify potential collaborations. Participation of media, teachers, and other non-scientists should be coordinated with the Outreach and Community Involvement Committee. Field sampling and scheduling will be integrated among PIs and with other organizations whenever possible.

4. Internal communications

A list of lead principal investigators for each Monitoring Project of the overall program, along with their full statements of work, contact information and pictures, will be posted on a special web page that has been established for this program by AOOS. This public page will also be used as a primary tool for public outreach.

An internal communications folder will be developed on the GWA Ocean Workspace site, with the goal of fostering communication among all program PIs and components. Summaries of internal meetings will be posted on this site. This site will provide a secure workspace for use by all PIs including sharing of data and project files.

5. Coordination of outreach and community involvement

The audiences for EVOSTC research and monitoring efforts are multiple and include, among others: local communities in the spill-impacted region, the scientific research community, management agencies, policy makers and congressional representatives and staff, commercial and subsistence users, teachers and students, the general public, media and non-governmental organizations. The Outreach Steering Committee will guide outreach and community involvement efforts.

If possible, space on research cruises and at research camps will be made available to community residents, teachers and students, and media representatives to interact with the PIs and provide first-hand insight into the monitoring program and Gulf of Alaska ecosystems. All such volunteers will meet applicable medical and training requirements. The GWA Program team will strive to create opportunities for community representatives and scientists to exchange views and knowledge. Principal investigators will be expected to be responsive to needs of journalists and other communicators, and to involve science team members in communication within the bounds of completing research tasks. AOS staff will provide principal investigators with general guidance on working with the media.

Principal investigators are encouraged to coordinate with the Outreach Steering Committee in developing outreach products. If principal investigators have their own websites, they will recognize the EVOSTC for work funded under this program and link their website to the GWA Program website. The GWA Program website will also recognize funding partners and collaborating institutions.

6. Information and data sharing protocols

The EVOSTC and GWA require data sharing in its agreements among all principal investigators and program components. For this Program, all PIs adhere to these policies (unless individual agency or legal requirements require restrictions contrary to these policies). The GWA Program Workspace account on the AOS Ocean Workspace is password protected to ensure confidentiality among PIs.

- All data are posted on the GWA Program Workspace as they become available following collection in order to promote internal integration and sharing within the project.
- These data are replaced with QA/QC'd data when available.
- Comprehensive metadata using FGDC (or ISO) standards accompany each dataset.
- Monitoring data are made available to the public as soon as it has been QA/QC'd or within 1 year following collection, whichever is sooner.
- Anyone making public use of another team's data contacts the data collector and provides appropriate attribution and credit.
- The Science Coordinating Committee must agree to any deviations from these policies in advance.

7. Data and document retention

As a program of the EVOSTC, all PIs and project managers are expected to adhere to EVOSTC policies regarding retention of all documents, correspondence (electronic and paper), samples and data per the terms of the EVOSTC court settlement.

8. Annual PI meetings

The Program Management Team will establish (and publish on the website), a schedule of meetings for the program. Representation by each project is expected at annual PI meetings. It is envisioned that the following meetings (or e-meetings) will be needed in the coming years: annual PI meetings in November, annual participation in the Alaska Marine Science Symposiums, and the Synthesis Workshop in Year 3 (2014). Additional meetings or special sessions at national meetings may also be planned as opportunities arise.

9. Progress reports

All GWA PIs will be required to submit annual progress reports in order to facilitate overall program management and to promote communication between program projects and monitoring components. Program approved templates must be used, and they must be submitted on time, or the investigator may jeopardize annual transfer of project fund allocation. The Program Team and the EVOSTC office are coordinating reporting and review requirements to streamline the process and minimize duplication. A schedule of all report due dates will be posted on the GWA Program's internal administration website and reminders will be sent to all PIs.

At this time, program and PI reports are expected to be due to the EVOSTC office on March 1 of each year. The Program Management Team will coordinate collection and submission of all PI annual reports. In addition, the Program Management Team will work with PIs to annually develop and submit by September 1 a work plan and budget for the next year of the program (February 1 – January 31), as well as a GWA Program Status Report to supplement the March annual report, for review by EVOSTC staff and science and public advisory panels, and EVOS Trustee Council action in August/September. Annual financial reports will be due March 1. Individual PI progress and financial reports and annual component work plans and budgets will be due to the contracting entity (agency or PWSSC) at least two weeks in advance of these dates, as specified in the annual contracts.

10. Reporting of research results and synthesis

The Science Coordinating Committee will work with the Program Lead and Science Coordinator to organize a schedule for the third year (Year 8) science synthesis and special issue consideration.

Publishing of research results in primary peer-reviewed literature is critical for the success of the program and the Science Coordinating Committee will work with PIs to promote collaborative publications. Scientists may publish in journals of their choice, or special issues organized by the Program team and the Science Coordinating Committee. Results also may be disseminated to EVOSTC communities and at scientific and management meetings including the Alaska Marine Science Symposium, the American Fisheries Society, PISCES, etc. Principal investigators will forward titles and publication information for accepted manuscripts to the GWA science lead, who will maintain a web-based list of GWA publications. The Science Coordinating Committee with EVOSTC staff will coordinate any special journal issues or syntheses of the program results.

11. Sampling Standard Operating Procedures (SOPs)

Each PI has documented the key sampling standard operating procedures (SOPs) employed by their monitoring component on the Program website. If the PI of that component changes, the agreed upon sampling procedures will continue to be used by any new PI. The Science Coordinating Committee must agree upon any changes to standard protocols desired by the PI. Any changes must be noted at the annual PI meeting.

12. Program review, corrective action and succession

Program review: The GWA Program Management Team and the Science Coordinating Committee will assess the status and success of the program with the EVOSTC staff following review of progress reports and the PI meetings on an annual basis and make any program revisions as needed. In addition to the

annual review, in-season and between-season reviews of operations may be convened as necessary to assess the success of field seasons and identify possible improvements that may be incorporated into revised annual work plans.

Corrective action: Participants in the GWA Program are encouraged to resolve disputes at the lowest internal level possible. Disputes that cannot be resolved through negotiation and compromise will be elevated for resolution either by the Program Management Team or the Science Coordinating Committee as appropriate. If corrective action is deemed advisable for any specific monitoring component, the GWA Program Management Team will take the following escalating steps as they deem necessary and appropriate:

1. Inform the Science Coordinating Committee of the need for corrective action and receive a signed acknowledgement from the investigator in question that the action will be taken;
2. Negotiate corrective action directly with the principal investigator(s) and receive a signed acknowledgement from that investigator that the action will be taken; and
3. If corrective action is not taken, consider withholding additional funds for that investigator's work until the problem is resolved.

If resolution is not practical, respective agencies and organizations involved will be consulted to determine an appropriate solution. The Program Management Team may withhold funds as necessary and allowable until disputes are resolved.

Leadership and PI succession: The term of all PIs and leadership team members is the length of this proposal - five years. For the Program Management Team, any changes to the Program Lead or Science Coordinator must be agreed to by the remaining members of the Program Management Team and the Science Coordinating Committee. The Program Administrative and Outreach Lead remains the President of the PWSSC, even if the person holding that office changes.

If a Principal Investigator departs the program before it concludes, the PI's institution is responsible for ensuring that the activities described in that component are accomplished. If the PI's institution is not able to find a suitable replacement or if the PI is not affiliated with a formal institution, the Program Management Team and Science Coordinating Committee will be responsible for replacing the PI for that component.

Any changes to program leadership or investigators must be forwarded to the EVOS Trustee Council office and the NOAA contracting office for their approval.

GWA Data Management Plan Signature Pages

All GWA PIs and collaborators must sign the following signature page.

This is a requirement of participation in the Gulf Watch Alaska Program.

Name	Email	Signature	Date
Arimitsu, Mayumi	marimitsu@usgs.gov	_____	_____
Ballachey, Brenda	ballachey@shaw.ca	_____	_____
Batten, Sonia	sonia.batten@sahfos.ac.uk	_____	_____
Bishop, Mary Anne	mbishop@pwssc.org	_____	_____
Bodkin, James	jbodkin@usgs.gov	_____	_____
Campbell, Rob	rcampbell@pwssc.org	_____	_____
Coletti, Heather	heather_coletti@nps.gov	_____	_____
Danielson, Seth	sldanielson@alaska.edu	_____	_____
Dean, Thomas	tomdean@coastalresources.us	_____	_____
Doroff, Angela	angela.doroff@alaska.gov	_____	_____
Esler, Dan	desler@usgs.gov	_____	_____
Esslinger, George	gesslinger@usgs.gov	_____	_____
Hatch, Scott	shatch.isrc@gmail.com	_____	_____
Hoffman, Katrina	khoffman@pwssc.org	_____	_____
Holderied, Kris	kris.holderied@noaa.gov	_____	_____
Hollmen, Tuula	tuulah@alaskasealife.org	_____	_____

Hopcroft, Russell	rrhopcroft@alaska.edu	_____	_____
Iken, Katrin	kbiken@alaska.edu	_____	_____
Kaler, Robb	robert_kaler@fws.gov	_____	_____
Kloecker, Kim	kkloecker@usgs.gov	_____	_____
Konar, Brenda	bhkonar@alaska.edu	_____	_____
Kuletz, Kathy	Kathy_kuletz@fws.gov	_____	_____
Lindeberg, Mandy	mandy.lindeberg@noaa.gov	_____	_____
Matkin, Craig	comatkin@gmail.com	_____	_____
Miller, Amy	amy_e_miller@nps.gov	_____	_____
Monson, Dan	dmonson@usgs.gov	_____	_____
Moran, John	John.Moran@noaa.gov	_____	_____
Piatt, John	jpiatt@usgs.gov	_____	_____
Straley, Jan	jan.straley@uas.alaska.edu	_____	_____
Weitzman, Ben	bweitzman@usgs.gov	_____	_____

Budget Category:	Proposed FY 17	Proposed FY 18	Proposed FY 19	Proposed FY 20	Proposed FY 21	TOTAL PROPOSED	ACTUAL CUMULATIVE
Personnel	\$117.0	\$120.0	\$123.0	\$126.0	\$130.0	\$616.0	
Travel	\$13.1	\$13.1	\$13.1	\$13.1	\$15.3	\$67.7	
Contractual	\$67.0	\$70.0	\$72.0	\$77.0	\$82.0	\$368.0	
Commodities	\$3.0	\$5.7	\$2.0	\$2.0	\$1.5	\$14.2	
Equipment	\$8.0	\$0.0	\$0.0	\$0.0	\$0.0	\$8.0	
SUBTOTAL	\$208.1	\$208.8	\$210.1	\$218.1	\$228.8	\$1,073.9	
General Administration (9% of subtotal)	\$18.7	\$18.8	\$18.9	\$19.6	\$20.6	\$96.6	N/A
PROJECT TOTAL	\$226.8	\$227.6	\$229.0	\$237.7	\$249.3	\$1,170.5	
Other Resources (Cost Share Funds)	\$69.0	\$69.0	\$69.0	\$69.0	\$69.0	\$345.0	

COMMENTS:
Over the life of this project, NOAA will make contributions for salary support: program lead, Lindeberg (6 mos/year; \$345 K).

FY17-21

Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS

**TRUSTEE AGENCY
SUMMARY PAGE**

Personnel Costs:		Months Budgeted	Monthly Costs	Overtime	Personnel Sum
Name	Project Title				
Mandy Lindeberg	Program Lead	6.0	0.0	0.0	0.0
TBD	Science Coordinator	12.0	9.8		117.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
		Subtotal	9.8	0.0	
Personnel Total					\$117.0

Travel Costs:	Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum
Description					
Marine Science Symposium (3 people for 5 days)	0.5	3	15	0.2	4.5
Coordination mtgs w/EVOSTC and LTM team (3 people/ 2 days @1/yr)	0.5	7	6	0.2	4.7
Principal Investigator Meeting - Anchorage (3 people for 4 days)	0.5	3	12	0.2	3.9
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
Travel Total					\$13.1

FY17

Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS

FORM 4B
PERSONNEL & TRAVEL
DETAIL

Personnel Costs:		Months Budgeted	Monthly Costs	Overtime	Personnel Sum
Name	Project Title				
Mandy Lindeberg	Program Lead	6.0	0.0	0.0	0.0
TBD	Science Coordinator	12.0	10.0		120.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
		Subtotal	10.0	0.0	
Personnel Total					\$120.0

Travel Costs:	Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum
Description					
Marine Science Symposium (3 people for 5 days)	0.5	3	15	0.2	4.5
Coordination mtgs w/EVOSTC and LTM team (3 people/ 2 days @1/yr)	0.5	7	6	0.2	4.7
Principal Investigator Meeting - Anchorage (3 people for 4 days)	0.5	3	12	0.2	3.9
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
Travel Total					\$13.1

FY18

Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS

FORM 4B
PERSONNEL & TRAVEL
DETAIL

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
New Equipment Total			\$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY18

**Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS**

**FORM 4B
EQUIPMENT DETAIL**

Personnel Costs:		Months Budgeted	Monthly Costs	Overtime	Personnel Sum
Name	Project Title				
Mandy Lindeberg	Program Lead	6.0	0.0	0.0	0.0
TBD	Science Coordinator	12.0	10.3		123.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
Subtotal			10.3	0.0	
Personnel Total					\$123.0

Travel Costs:	Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum
Description					
Marine Science Symposium (3 people for 5 days)	0.5	3	15	0.2	4.5
Coordination mtgs w/EVOSTC and LTM team (3 people/ 2 days @1/yr)	0.5	7	6	0.2	4.7
Principal Investigator Meeting - Anchorage (3 people for 4 days)	0.5	3	12	0.2	3.9
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
Travel Total					\$13.1

FY19

Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS

FORM 4B
PERSONNEL & TRAVEL
DETAIL

Contractual Costs:	Contract Sum
Description	
Program Coordinator	69.0
Program Coordinator office space	3.0
If a component of the project will be performed under contract, the 4A and 4B forms are required.	
Contractual Total	\$72.0

Commodities Costs:	Commodities Sum
Description	
Supplies	2.0
Commodities Total	\$2.0

FY19

Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS

FORM 4B
CONTRACTUAL &
COMMODITIES DETAIL

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
New Equipment Total			\$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY19

Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS

**FORM 4B
EQUIPMENT DETAIL**

Personnel Costs:		Months Budgeted	Monthly Costs	Overtime	Personnel Sum	
Name	Project Title					
Mandy Lindeberg	Program Lead	6.0	0.0	0.0	0.0	
TBD	Science Coordinator	12.0	10.5		126.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
		Subtotal	10.5	0.0		
					Personnel Total	\$126.0

Travel Costs:	Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum	
Description						
Marine Science Symposium (3 people for 5 days)	0.5	3	15	0.2	4.5	
Coordination mtgs w/EVOSTC and LTM team (3 people/ 2 days @1/yr)	0.5	7	6	0.2	4.7	
Principal Investigator Meeting - Anchorage (3 people for 4 days)	0.5	3	12	0.2	3.9	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					0.0	
					Travel Total	\$13.1

FY20

**Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS**

**FORM 4B
PERSONNEL & TRAVEL
DETAIL**

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
New Equipment Total			\$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY20

Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS

FORM 4B
EQUIPMENT DETAIL

Personnel Costs:		Months Budgeted	Monthly Costs	Overtime	Personnel Sum
Name	Project Title				
Mandy Lindeberg	Program Lead	6.0	0.0	0.0	0.0
TBD	Science Coordinator	12.0	10.8		130.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
Subtotal			10.8	0.0	
Personnel Total					\$130.0

Travel Costs:	Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum
Description					
Marine Science Symposium (3 people for 5 days)	0.5	3	15	0.2	4.5
Coordination mtgs w/EVOSTC and LTM team (3 people/ 2 days @1/yr)	0.5	7	6	0.2	4.7
Principal Investigator Meeting - Anchorage (3 people for 4 days)	0.5	3	12	0.2	3.9
Joint Science Workshop (2 people 3 days)	0.5	2	6	0.2	2.2
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
Travel Total					\$15.3

FY21

**Project Title: Program Science and Synthesis
 Primary Investigator: Mandy Lindeberg
 Agency: NMFS**

**FORM 4B
 PERSONNEL & TRAVEL
 DETAIL**

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
New Equipment Total			\$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY21

**Project Title: Program Science and Synthesis
Primary Investigator: Mandy Lindeberg
Agency: NMFS**

**FORM 4B
EQUIPMENT DETAIL**