

**FY12 INVITATION
PROPOSAL SUMMARY PAGE**

Project Title: Long-term monitoring: Benthic monitoring component - Long-term monitoring of Ecological Communities in Kachemak Bay: a comparison and control for Prince William Sound.

Project Period: October 1, 2011 – September 30, 2016

Primary Investigator(s): Brenda Konar and Katrin Iken (UAF)
Co-operating Investigator: Angie Doroff (KBNERR)

Study Location:

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

Estimated Budget:
EVOSTC Funding Requested:
(breakdown by fiscal year and must include 9% GA)

Non-EVOSTC Funds to be used:
(breakdown by fiscal year)

Date: May 18, 2011

(NOT TO EXCEED ONE PAGE)

PROJECT PLAN

I. NEED FOR THE PROJECT

A. Statement of Problem

Identify the problem the project is designed to address. Describe the background and history of the problem. Include a scientific literature review that covers the most significant previous work history related to the project.

Justification

Many protocol similarities exist between the monitoring that is currently being done in Prince William Sound (EVOSTC Project 10100750) and that which is being done in Kachemak Bay. By continuing this monitoring in both areas, comparisons can be made between the two regions and Kachemak Bay may be able to be used as a control for Prince William Sound if another spill were to occur. Historical data exist in both areas, making future comparisons of trends even more valuable.

Project Concept

This project will evaluate ecological communities in Kachemak Bay. Following protocols established for Prince William Sound, we will monitor sea otter abundance, diet and carcasses, seabird carcasses, marine debris, abundance and distribution of rocky intertidal plants and invertebrates, abundance and size frequency of clams and mussels on gravel beaches, and selected environmental parameters in Kachemak Bay. All protocols have been established and are described for Prince William Sound. These same protocols as will be used in this study. These Kachemak Bay data will be compared with those being collected in Prince William Sound and may be able to act as a control if an oil spill were to occur in the Sound again. The data will also be comparable to data being collected in Kenai and Katmai National Parks (National Park Service SWAN Nearshore Monitoring Program) using the same methods as used in Prince William Sound.

B. Relevance to 1994 Restoration Plan Goals and Scientific Priorities

Please see pages 2-4 of the integrated proposal titled “Long-Term Monitoring of Marine Conditions and Injured Resources and Services,” and submitted by McCammon et. al

II. PROJECT DESIGN

A. Objectives

List the objectives of the proposed research, the hypotheses being tested during the project, and briefly state why the intended research is important.

Objectives:

- 1) Determine trends in sea otter abundance.
- 2) Determine the diet and dietary shifts of sea otters.
- 3) Determine trends in sea otter and seabird mortality.
- 4) Determine trends in marine debris.

- 5) Determine trends in the abundance and distribution of rocky intertidal plants and invertebrates
- 6) Determine trends in the abundance and size frequency of clams and mussels on gravel beaches.
- 7) Determine trends in selected environmental parameters and relate them to #1-6 above.

The field work for this proposal will be completed annually for four years and followed by a year of data synthesis (year 5), with the outlook of continuing this pattern of monitoring for up to 20 years.

B. Procedural and Scientific Methods

For each objective listed in A. above, identify the specific methods that will be used to meet the objective. In describing the methodologies for collection and analysis, identify measurements to be made and the anticipated precision and accuracy of each measurement and describe the sampling equipment in a manner that permits an assessment of the anticipated raw-data quality.

If applicable, discuss alternative methodologies considered, and explain why the proposed methods were chosen. In addition, projects that will involve the lethal collection of birds or mammals must comply with the Trustee Council's policy on collections, available at www.evostc.state.ak.us/Proposals/policies.htm.

Project Logistics

For this project, Brenda Konar and Katrin Iken will provide overall project management. They also will oversee the rocky intertidal and gravel beach portion of this study. This will include working with student field assistants, conducting the field work (including some collections of environmental parameters) and completing analyses. Angie Doroff will complete the sea otter foraging observations component of this project and will oversee some of the environmental parameter collections. The USFWS has tentatively committed to conducting sea otter abundance surveys (confirmation anticipated when 2011 federal budgets are determined). The Center for Alaska Coastal Studies, the Homer Marine Mammal Stranding Network, and the USFWS have been and will continue to conduct systematic beach walks to recover dead birds, sea otters, and marine debris.

The intertidal sampling effort in Kachemak Bay varied on both spatial and temporal scales (Table 1). Two different habitats were sampled, macroalgal covered rocky shores and seagrass beds (Figure 1). All data collected from Kachemak Bay have been shared with the Ocean Biogeographic Information System (OBIS, www.iobis.org) and are stored in a NaGISA/Census of Marine Life database.

C. Data Analysis and Statistical Methods

Describe the process for analyzing data. Discuss the means by which the measurements to be taken could be compared with historical observations or with regions that are thought to have similar ecosystems. Describe the statistical power of the proposed sampling program for detecting a significant change in numbers. To the extent that the variation to be expected in the

response variable(s) is known or can be approximated, proposals should demonstrate that the sample sizes and sampling times (for dynamic processes) are of sufficient power or robustness to adequately test the hypotheses. For environmental measurements, what is the measurement error associated with the devices and approaches to be used?

D. Description of Study Area

Where will the project be undertaken? Describe the study area, including if applicable decimally-coded latitude and longitude readings of sampling locations or the bounding coordinates of the sampling region (e.g., 60.8233, -147.1029, 60.4739, -147.7309 for the north, east, south and west bounding coordinates). The formula for converting from degree minute seconds to decimal degrees is: degrees + (minutes/60) + (seconds/3600) so 121°8'6" = 121. + (8/60) + (6/3600) = 121.135

E. Coordination and Collaboration with Other Efforts

Indicate how your proposed project relates to, complements or includes collaborative efforts with other proposed or existing projects funded by the Trustee Council. Describe any coordination that has taken or will take place (with other Council funded projects, ongoing agency operations, activities funded by other marine research entities, etc.) and what form the coordination will take (shared field sites, research platforms, sample collection, data management, equipment purchases, etc.). If the proposed project requires or includes collaboration with other agencies, organizations or scientists to accomplish the work, such arrangements should be fully explained and the names of agency or organization representatives involved in the project should be provided. If your proposal is in conflict with another project, note this and explain why.

Project Integration

We expect strong collaboration between all components of this project with the Prince William Sound, Katmai and Kenai components (all nearshore monitoring with similar data collection methods) and the Oceanographic component. Data sharing is integral to the success of this program. This project will be integrated with two University of Alaska field courses that are taught by Konar and Iken at the Kasitsna Bay Lab. Students will get valuable experience and training from participating in this project and the project will benefit from having these students.

III. SCHEDULE

A. Project Milestones

For each project objective listed above (II.A.), specify when critical project tasks will be completed. Project reviewers will use this information in conjunction with annual project reports to assess whether projects are meeting their objectives and are suitable for continued funding. Please format your information like the following example.

Objective 1. Develop sediment-core chronologies in lake-productivity indicators.

To be met by September 2011

Objective 2. Compare sediment data corresponding to the past few decades to salmon population statistics.

To be met by December 2011

Objective 3. Reconstruct time-series of lake productivity, input of marine-derived nutrients, and salmon escapement.

To be met by April 2012

B. Measurable Project Tasks

Specify, by each quarter of each fiscal year, when critical project tasks (for example, sample collection, data analysis, manuscript submittal, etc.) will be completed. This information will be the basis for the quarterly project progress reports that are submitted to the Trustee Council Office. Please format your schedule like the following example.

FFY 11, 2nd quarter (January 1, 2011-March 31, 2011)

February: Project funding approved by Trustee Council

FFY 11, 3rd quarter (April 1, 2011-June 30, 2011)

April 30: Core Upper Russian Lake

May 30: Core Delight Lake

FFY 11, 4th quarter (July 1, 2011-September 30, 2011)

September 1: Core Hidden Lake

FFY 12, 1st quarter (October 1, 2011-December 31, 2011)

December 15: Begin analysis and report writing

FFY 12, 2nd quarter (January 1, 2012-March 31, 2012)

January 18: Annual Marine Science Symposium

FFY 12, 3rd quarter (April 1, 2012-June 30, 2012)

April 15 Submit final report. This will consist of a draft manuscript for publication to the Trustee Council Office.

Budget Justification

Salary and benefits are being requested for the two PIs (Konar and Iken) to complete the field work and analysis. Additional summer salary is requested for a graduate student to assist Konar and Iken in the field and with the analysis. This student (which will likely change every year so that many can benefit) will receive valuable training and experience during this project. Travel is requested for the PIs and the graduate student to travel to the lab from UAF every summer to complete the field work. Contractual services requested are laboratory fees for bunk space and use of the lab at the Kasitsna Bay Laboratory, and a subcontract to Angie Doroff at the KBNERR to complete the sea otter component of this study. Commodities requested include general supplies (food while in the field, pressing paper for algal vouchers, vials for invertebrate vouchers, collecting bags, ziplocks, etc...) and data loggers.

**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 12-FY16**

Budget Category:	Proposed FY 12	Proposed FY 13	Proposed FY 14	Proposed FY 15	Proposed FY 16	TOTAL PROPOSED
Personnel	\$20.0	\$20.7	\$21.3	\$22.0	\$21.8	\$105.8
Travel	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$5.0
Contractual	\$6.4	\$5.9	\$5.2	\$4.5	\$4.5	\$26.5
Commodities	\$2.1	\$2.0	\$2.0	\$2.0	\$1.5	\$9.6
Equipment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Indirect Costs (<i>will vary by proposer</i>)	\$14.6	\$14.6	\$14.6	\$14.6	\$14.7	\$73.1
SUBTOTAL	\$44.1	\$44.2	\$44.1	\$44.1	\$43.5	\$220.0
General Administration (9% of subtotal)	\$4.0	\$4.0	\$4.0	\$4.0	\$3.9	\$19.8
PROJECT TOTAL	\$48.1	\$48.2	\$48.1	\$48.1	\$47.4	\$239.8
Other Resources (Cost Share Funds)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

COMMENTS: In this box, identify non-EVOSTC funds or in-kind contributions used as cost-share for the work in this proposal. List the amount of funds, the source of funds, and the purpose for which the funds will be used. Do not include funds that are not directly and specifically related to the work being proposed in this proposal.

FY12-16

Program Title:
Team Leader:

SUMMARY

**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 12-FY16**

Budget Category:	Proposed FY 12	Proposed FY 13	Proposed FY 14	Proposed FY 15	Proposed FY 16	TOTAL PROPOSED
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Travel	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$5.0
Contractual	\$6.4	\$5.9	\$5.2	\$4.5	\$4.5	\$26.5
Commodities	\$2.1	\$2.0	\$2.0	\$2.0	\$1.5	\$9.6
Equipment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Indirect Costs (<i>will vary by proposer</i>)	\$14.6	\$14.6	\$14.6	\$14.6	\$14.7	\$73.1
SUBTOTAL	\$44.1	\$44.2	\$44.1	\$44.1	\$43.5	\$220.0
General Administration (9% of subtotal)	\$4.0	\$4.0	\$4.0	\$4.0	\$3.9	\$19.8
PROJECT TOTAL	\$48.1	\$48.2	\$48.1	\$48.1	\$47.4	\$239.8
Other Resources (Cost Share Funds)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

COMMENTS: In this box, identify non-EVOSTC funds or in-kind contributions used as cost-share for the work in this proposal. List the amount of funds, the source of funds, and the purpose for which the funds will be used. Do not include funds that are not directly and specifically related to the work being proposed in this proposal.

FY12-16

Program Title:
Team Leader:

**FORM 3A
NON-TRUSTEE AGENCY
SUMMARY**

