

Fiscal Year
2002

Work Plan

December 2001



Exxon Valdez Oil Spill Trustee Council

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This publication was released by the Exxon Valdez Oil Spill Trustee Council and produced at a cost of \$3.52 per copy.

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Dear Reader,

Each year the *Exxon Valdez* Oil Spill Trustee Council funds activities to restore the resources and services injured by the 1989 *Exxon Valdez* oil spill. This Work Plan describes the research, monitoring, and general restoration projects funded by the Council for federal fiscal year 2002, and touches on the other activities of the Council as well.

The suite of projects funded in the FY 02 Work Plan represents two primary efforts currently underway by the Trustee Council: (1) continued monitoring and assessment of lingering oil and oil injury and (2) transition to a long-term monitoring and research program designed to ensure the long-term health and conservation of resources injured by the spill (referred to as GEM, the Gulf Ecosystem Monitoring & Research Program).

Under the lingering oil component of the Trustee Council's program in FY 02, data and chemical analyses of sediment samples collected in Prince William Sound in summer 2001 will be conducted (Project 02543). A new initiative to integrate studies of sea otters and harlequin ducks—two still injured species—with continued assessment of oil persistence will begin (Project 02585). Research will continue on factors that may be persisting in limiting the recovery of injured resources, such as how oil contamination might be affecting pink salmon reproduction (Project 02476). In addition, comprehensive final reports, analyzing many years of monitoring data—collected in some cases since the time of the spill or before—will be prepared on injury to a number of species including killer whales (Project 02012), seabirds (Project 02159), and harlequin ducks (Project 02407).

Another important aspect of the lingering oil component of the Trustee Council's program is synthesis of results of prior years' research. In FY 02, the Council's Chief Scientist will lead an effort to synthesize the significant scientific results from the EVOS damage assessment and restoration programs as they relate to anthropogenic and natural forcing factors influencing the northern Gulf of Alaska (Project 02600). In addition, the Council's final report, which will comprehensively describe the Council's activities from the time of the spill through the original 10-year restoration program (FY 02), will be completed and published.

In regard to the long-term research and monitoring component of the Trustee Council's program, planning for GEM is to be completed in FY 02. The draft GEM Program Document is currently undergoing external review by the National Research Council of the National Academy of Sciences. Following that review, and any necessary revisions or adjustments, the GEM Program Document will be presented to the Council for adoption in June 2002. Our current schedule calls for release of the first GEM Invitation for Proposals in September 2002.

Two projects (02360 and 02630) support the completion of the GEM planning effort. A number of other projects are considered "GEM transition" projects, because they are exploring new or innovative monitoring tools and strategies that might be employed in a long-term program or they are continuing collection of important long-time data sets that will be integral to GEM. Examples are the testing of airborne remote sensing tools (Project 02584), installation of monitoring equipment on ships-of-opportunity (Projects 02614 and 02624), and support for the hydrographic station GAK 1 near Seward (Project 02340).

Also of interest, the FY 02 Work Plan includes two projects (02423 and 02558) that will be conducted at the Alaska SeaLife Center in Seward. The SeaLife Center, which was funded in part by the Trustee Council, opened in May 1998. It provides unique, technologically advanced facilities for research on marine mammals, fish and seabirds.

It should also be noted that FY 02 is the final year in which projects will be funded with a direct payment from Exxon—the final annual payment from Exxon was received by the Trustee Council in September 2002. FY 03 and future projects will be funded with earnings from the Council's investment fund, which was initiated in October 2000 using funds set aside each year from Exxon's payments. The fund, which is being invested and managed by the Alaska Department of Revenue, is expected to generate roughly \$5-6 million a year in perpetuity.

A final comment concerns activities that are not funded through the Work Plan, but which help to complete the picture of the Trustee Council's restoration effort. To date, the Council's program to protect habitat important to the recovery of injured resources and services has purchased 643,635 acres of land and conservation easements. In October 2001 the Council awarded The Nature Conservancy and The Conservation Fund a \$1 million pilot grant to administer and conduct the Council's habitat protection effort in FY 02. The non-profits bring several advantages to the habitat protection program, particularly in broadening the protection impact of dollars spent through leveraging funds and using tax incentives and estate planning strategies.

Public interest and input are essential to the Trustee Council process. Please contact me if you have comments or suggestions on the Council's restoration effort.

Sincerely,



Molly McCammon
Executive Director

The Work Plan Process

Table 1 describes milestones in development of the FY 02 Work Plan. The Trustee Council made most of its funding decisions in August so that projects could begin on October 1, 2001, the first day of federal fiscal year 2002. A few funding decisions were deferred until December to allow time for review of results from the FY 01 field season or further deliberation on project objectives and work plan priorities.

Table 1. Milestones for FY 02 Work Plan

Feb. 15, 2001	<i>Invitation to Submit Restoration Proposals for Federal Fiscal Year 2002</i> was issued.
April 15, 2001	Restoration Office received 106 research, monitoring, and general restoration proposals requesting \$10.3 million for FY 02.
May 20-23, 2001	Chief Scientist and core reviewers met to discuss the scientific and technical merits of proposals.
June 7, 2001	Executive Director discussed proposals with Chief Scientist, Public Advisory Group representatives, and Trustee agencies and formed preliminary recommendations.
June 15, 2001	<i>FY 02 Draft Work Plan</i> was distributed for public comment.
July 18, 2001	Public Advisory Group met to advise Trustee Council on work plan; public hearing was held.
Aug. 6, 2001	Trustee Council approved 42 research, monitoring, and general restoration projects totaling \$3,113,600 for <i>FY 02 Work Plan</i> , and deferred projects that required further review or deliberation.
Oct. 1, 2001	Federal fiscal year 2002 (FY 02) began.
Dec. 11, 2001	Trustee Council approved 12 additional research, monitoring, and general restoration projects for <i>FY 02 Work Plan</i> . This action brought the FY 02 authorization total to \$4,492,500.

Summary of Fiscal Year 2002 Projects

For FY 02, the Trustee Council received 106 research, monitoring, and general restoration proposals requesting a total of \$10.3 million. In August and December 2001, the Council authorized 54 projects totaling \$4,492,500. The table on the following page (Table 3) summarizes the Council's funding decisions by "cluster," as well as the expected cost of completing the projects authorized in FY 02. (Note: Regarding future year costs, a blank space means that the estimated funding level is not known or that the Trustee Council has not made a commitment to continue the project in future years because of uncertainty about its scope or its priority in terms of the overall restoration program.)

Many of the projects funded are the continuation of efforts funded in FY 01. As illustrated in Table 2, several new projects also were funded.

Table 2. New and Continuing Projects

	Number of Projects Funded	Total Cost of Projects Funded
New Projects	19	\$1,452,300
Continuing Projects	35	\$3,040,200

In addition to funding research, monitoring, and general restoration projects, the Trustee Council authorized funds for the administrative costs of the restoration program (\$1.5 million for public information, independent scientific review, and administration), funds for habitat protection support (\$161,800, for services such as negotiations, land surveys, and appraisals), and one capital construction project (\$47,900 for implementation of Phase I of the Lower Cook Inlet Waste Management Plan). This funding is described on pages 17-20 of this document.

Table 3. Summary of Funding by Cluster

Cluster	FY 02 Approved	FY 03 Estimate	Total FY 02-03
Oil Injury	\$754.1	\$66.0	\$820.1
Spill Recovery Monitoring	\$663.5	\$35.3	\$698.8
Ecosystem Recovery & Function	\$639.8	\$189.0	\$828.8
Spill General Restoration	\$46.3	\$0.0	\$46.3
GEM Transition: Strategies to Improve Monitoring	\$108.2	\$0.0	\$108.2
GEM Transition: Tools to Improve Monitoring	\$376.8	\$17.1	\$393.9
GEM Transition: Synthesis & Retrospective Analysis	\$418.4	\$258.2	\$676.6
GEM Transition: Long-Term Monitoring	\$500.4	\$11.6	\$512.0
Data Management & Information Transfer	\$217.7	\$0.0	\$217.7
Community Involvement/Public Outreach/Other	\$767.3	\$0.0	\$767.3
Total Research, Monitoring, and General Restoration Projects:	\$4,492.5	\$577.2	\$5,069.7
Habitat Protection/Acquisition Support	\$161.8		\$161.8
Public Information/Science Mgt./ Admin.	\$1,500.0		\$1,500.0
Other Projects (Archaeology, Waste Mgt.)	\$77.0		\$77.0
Total All Activities:	\$6,231.3	\$577.2	\$6,808.5

Description of Fiscal Year 2002 Projects

This section describes the research, monitoring, and general restoration projects funded by the Trustee Council for FY 02. It also includes a brief description of the Council's other activities.

RESEARCH, MONITORING, AND GENERAL RESTORATION PROJECTS

The research, monitoring, and general restoration projects described on the following pages are arranged by "cluster." The clusters represent a classification system designed to simplify presentation and understanding of the suite of projects approved by the Trustee Council. Each cluster description includes the Council's restoration strategies (that is, projects) authorized for FY 02, and the expected cost of completing those projects. (Note: Regarding future year costs, "\$0" means that no funding is expected. A blank space means that the estimated funding level is not known or that the Council has not made a commitment to continue the project in future years because of uncertainty about its scope or its priority in terms of the overall restoration program.)

Appendix A contains a numerical listing of all projects funded by the Trustee Council. It contains the text of the Chief Scientist's technical review of each project and the Council's decision for each project. It also indicates who proposed each project, which Trustee agency is responsible for project management, and whether the project is continuing (i.e., also was funded by the Council in FY 01) or new.

A Detailed Project Description (DPD) and budget are on file at the Anchorage Restoration Office for each project.

Strategies for Fiscal Year 2002

- Continue genetic linkage project (02190), which will apply the newly developed linkage map for the pink salmon genome to questions related to pink salmon growth and survival.
- Continue gamete viability project (02476), which is validating the effects of oil contamination on pink salmon reproduction.
- Complete embryo survival study (02492), which is addressing critiques of earlier studies of pink salmon embryo mortality by investigating sampling timing as a possible source of bias.
- Complete herring stock identification project (02538), which is performing a comparative investigation of two stock identification techniques – analysis of otoliths and analysis of fatty acid profiles.
- Continue remaining oil project (02543), which is assessing the amount of oil remaining from the oil spill on shorelines within Prince William Sound.
- Begin oil bioavailability project (02585), which will examine whether the signs of continued oil exposure in sea otters and harlequin ducks are linked to the oil remaining in intertidal sediments.
- Conduct river otter synthesis project (02593), which will prepare a publication on the relationship between river otter sociality and the availability of schooling fishes.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02190	Genome Linkage Map	\$168.0		\$168.0
02476	Effects of Oiled Incubation on Reproduction	\$39.8	\$36.0	\$75.8
02492	Were Embryo Studies Biased?	\$24.0	\$0.0	\$24.0
02538	Methods to Discriminate Herring Stocks	\$80.4	\$0.0	\$80.4
02543	Remaining Oil Survey	\$113.1	\$0.0	\$113.1
02585	Lingering Oil: Bioavailability and Effects	\$296.4	\$30.0	\$326.4
02593	River Otter Synthesis	\$32.4	\$0.0	\$32.4
TOTAL		\$754.1	\$66.0	\$820.1

Spill Recovery Monitoring

Strategies for Fiscal Year 2002

- Complete killer whale investigation (02012), which is analyzing the long-term effects of the oil spill on resident and transient pods of killer whales.
- Complete common murre monitoring project (02144), which is evaluating the recovery status of common murrens at the Chiswell Islands.
- Complete seabird boat survey project (02159), which in FY 02 will prepare a final report on marine bird abundance in Prince William Sound.
- Continue harbor seal biosampling project (02245), which is collecting harbor seal tissue samples for use by harbor seal researchers that are seeking to explain why harbor seals are not recovering.
- Complete harlequin duck monitoring project (02407), which is assessing the recovery of harlequin duck populations in oiled areas of Prince William Sound.
- Complete harbor seal diet project (02441), which is investigating the effect of diet on lipid metabolism and health in harbor seals.
- Complete herring disease project (02462), which is assessing whether disease is limiting recovery of the Prince William Sound herring population.
- Continue harbor seal technology project (02558), which is investigating the potential for new technologies to assess and monitor the endocrine and immune systems of harbor seals as diagnostic measures of their health.
- Begin bivalve recovery project (02574), which will continue documentation of continuing effects of shoreline cleanup on populations of important bivalves.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02012	Killer Whale Investigation	\$35.2	\$0.0	\$35.2
02144	Common Murre Monitoring	\$14.8	\$0.0	\$14.8
02159	Seabird Boat Surveys	\$33.3	\$0.0	\$33.3
02245	Harbor Seal Biosampling	\$26.8	\$0.0	\$26.8
02407	Harlequin Duck Monitoring	\$68.7	\$0.0	\$68.7
02441	Harbor Seal Diet	\$20.2	\$0.0	\$20.2
02462	Herring Disease	\$77.4	\$0.0	\$77.4
02558	Harbor Seal Technologies	\$292.3		\$292.3
02574	Bivalve Recovery	\$94.8	\$35.3	\$130.1
TOTAL		\$663.5	\$35.3	\$698.8

Ecosystem Recovery & Function

Restoration Strategies for Fiscal Year 2002

- Complete APEX (Alaska Predator Ecosystem Experiment) project (02163M), which in FY 02 will prepare manuscripts on the effects on seabirds of fluctuations in forage fish density.
- Complete pristane monitoring project (02195), which is working to develop an relatively inexpensive measure of marine productivity, designed to allow predictions about future fisheries production and harvest levels.
- Complete Sound Ecosystem Assessment (SEA) project (02320), which in FY 02 consists of a small amount of funds for printing the final report.
- Complete salmon shark assessment project (02396), which is investigating seasonal salmon shark movements and diet in Prince William Sound.
- Complete spot shrimp project (02401), which is studying the abundance of spot shrimp in Prince William Sound, which are important to subsistence harvesters.
- Continue nearshore vertebrate predator project (02423), which is investigating evidence of ongoing injury to sea otters and harlequin ducks.
- Complete seabird food stress project (02479), which is exploring the use of corticosterone, a biochemical indicator of stress, as a tool to monitor seabird populations.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02163M	APEX Manuscripts	\$50.0	\$0.0	\$50.0
02195	Pristane Monitoring	\$20.0	\$0.0	\$20.0
02320	SEA Final Report	\$2.1	\$0.0	\$2.1
02396	Salmon Shark Assessment	\$28.8	\$0.0	\$28.8
02401	Spot Shrimp Surveys	\$25.5	\$0.0	\$25.5
02423	Nearshore Vertebrate Predators	\$458.4	\$189.0	\$647.4
02479	Seabirds / Food Stress	\$55.0	\$0.0	\$55.0
TOTAL		\$639.8	\$189.0	\$828.8

Spill General Restoration

Strategies for Fiscal Year 2002

- Complete Kametlook River project (02247), which is working to enhance a coho salmon run near the community of Perryville on the Alaska Peninsula.
- Complete Solf Lake project (02256B), which is working to enhance production of sockeye salmon in Solf Lake near the community of Chenega Bay.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02247	Kametlook River Coho Enhancement	\$30.8	\$0.0	\$30.8
02256B	Solf Lake Sockeye Stocking	\$15.5	\$0.0	\$15.5
TOTAL		\$46.3	\$0.0	\$46.3

GEM Transition: Strategies to Improve Monitoring

Strategies for Fiscal Year 2002

- Conduct nearshore/intertidal project (02395), which will use a workshop-based approach to develop options for long-term monitoring of the nearshore/intertidal area.
- Conduct marine/terrestrial linkages project (02612), which is designed to increase understanding of food web dynamics in the watershed and the role of marine-derived nutrients in the ecosystem.

NOTE: One additional project (02556/Mapping Marine Habitats) may be reconsidered by the Trustee Council later in FY 02. A total of \$50,000 has been requested for this project.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02395	Nearshore/Intertidal Workshop	\$63.6	\$0.0	\$63.6
02612	Marine-Terrestrial Linkages	\$44.6	\$0.0	\$44.6
TOTAL		\$108.2	\$0.0	\$108.2

GEM Transition: Tools to Improve Monitoring

Strategies for Fiscal Year 2002

- Complete archival tag project (02404), which is testing the development and application of archive tag technology, which has great promise for a variety of species.
- Conduct remote sensing tools project (02584), which will explore airborne remote sensing instrumentation as a monitoring tool for GEM.
- Conduct three ships-of-opportunity projects:
02614 will install a thermosalinograph and fluorometer on an oil tanker traveling between Valdez and Long Beach;
02624 will install a continuous plankton recorder (CPR) on an oil tanker traveling between Valdez and Long Beach and on a second vessel along a Vancouver, B.C. to Kamchatka monitoring line; and
02671 will develop logistics for a network of ships of opportunity in Kachemak Bay.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02404	Archival Tags	\$104.6	\$0.0	\$104.6
02584	Airborne Remote Sensing Tools	\$78.6		\$78.6
02614	Ships of Opportunity: Salinity, Temperature, Fluorescence	\$38.2	\$17.1	\$55.3
02624	Ships of Opportunity: Continuous Plankton Recorder	\$120.6	\$0.0	\$120.6
02671	Ships of Opportunity: Kachemak Bay Logistics	\$34.8	\$0.0	\$34.8
TOTAL		\$376.8	\$17.1	\$393.9

GEM Transition: Synthesis & Retrospective Analysis

Strategies for Fiscal Year 2002

- Begin EVOS synthesis project (02600), which will integrate what has been learned from more than a decade's worth of science following the oil spill.
- Conduct ESI (Environmental Sensitivity Index) mapping project (02622), which will convert the existing Cook Inlet seasonal summary maps to a digitized format to make them more accessible.
- Begin commercial fishing management application project (02636), which will employ methods such as workshops in an effort to improve communications between fisheries scientists, resources managers, and fishers regarding the findings of EVOS studies.
- Begin sockeye salmon population reconstruction project (02649), which will conduct a retrospective study of sockeye abundance in certain lakes in the spill region and develop hypotheses about how changes in the atmosphere/ocean system affect salmon populations.
- Begin nearshore retrospective analysis project (02656), which is designed to improve understanding of long-term change in nearshore marine communities and investigate the relationship between productivity and climate.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02600	EVOS Synthesis	\$133.8	\$212.0	\$345.8
02622	Digital ESI Maps	\$36.6	\$0.0	\$36.6
02636	Commercial Fishing Management Applications	\$50.0		\$50.0
02649	Reconstructing Sockeye Populations	\$88.1	\$28.2	\$116.3
02656	Retrospective Analysis of Nearshore	\$109.9	\$18.0	\$127.9
TOTAL		\$418.4	\$258.2	\$676.6

GEM Transition: Long-Term Monitoring

Strategies for Fiscal Year 2002

- Continue Prince William Sound and Kodiak Island Youth Area Watch projects (02210 and 02610), which involve junior high and high school students in restoration projects.
- Continue oceanographic monitoring project (02340), which supports hydrographic station GAK1 and the accompanying retrospective analyses of the station's data record.
- Complete oceanographic exchange project (02552), which is gathering and analyzing data from the Hinchinbrook Entrance buoy.
- Conduct community-based forage fish sampling project (02561), which will explore involving local residents in long-term forage fish monitoring studies.
- Begin ocean circulation modeling project (02603), which will expand the Prince William Sound circulation model developed under SEA (Sound Ecosystem Assessment, Project /320) to the Gulf of Alaska.
- Begin citizens' monitoring review project (02667), which will analyze five years of data from Cook Inlet Keeper's Citizens' Environmental Monitoring Program to determine its effectiveness.

NOTE: One additional project (02681/Nearshore-Intertidal Monitoring) may be reconsidered by the Trustee Council later in FY 02. A total of \$50,000 has been identified for this project.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02210	PWS Youth Area Watch	\$106.1		\$106.1
02340	Oceanographic Monitoring (GAK1)	\$77.8		\$77.8
02552	Oceanographic Exchange	\$102.5	\$0.0	\$102.5
02561	Community-Based Forage Fish Sampling	\$54.3	\$11.6	\$65.9
02603	Ocean Circulation Model	\$80.0	\$0.0	\$80.0
02610	Kodiak Youth Area Watch	\$61.8		\$61.8
02667	Citizens' Monitoring Review	\$17.9	\$0.0	\$17.9
TOTAL		\$500.4	\$11.6	\$512.0

Data Management & Information Transfer

Strategies for Fiscal Year 2002

- Continue hydrocarbon database project (02290), which is analyzing hydrocarbon samples collected through other Trustee Council projects.
- Continue GEM data system project (02455), which in FY 02 will fund a data manager for GEM.
- Conduct specimen archiving project (02608), which will archive nearshore/subtidal specimens from Project CH1A at the University of Alaska Museum.
- Conduct water quality and habitat database project (02668), which will create a database structure and data entry system to improve management of citizens' water quality data.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02290	Hydrocarbon Database	\$35.0		\$35.0
02455	GEM Data System	\$105.0		\$105.0
02608	Specimen Archiving	\$61.6	\$0.0	\$61.6
02668	Water Quality & Habitat Database	\$16.1	\$0.0	\$16.1
TOTAL		\$217.7	\$0.0	\$217.7

Community Involvement / Public Outreach / Other

Strategies for Fiscal Year 2002

- Continue community stewardship project (02052) in some form. The Trustee Council approved a small amount of interim funds for this project, and may consider approving additional funds later in FY 02 following a review of the project's long-term objectives.
- Continue project management funding (02250), which funds project managers in the six Trustee agencies to track the progress of restoration projects; monitor project expenditures; ensure that all reports and other contract deliverables are properly performed; and so on. The FY 02 funding level of \$181,700 represents a reduction from the amount approved for FY 01 (\$284,300).
- Complete National Research Council project (02360), which is providing external review of GEM.
- Complete Trustee Council final report (02535), which will comprehensively describe the Council's activities from the time of the spill through the original 10-year restoration program (FY 02).
- Continue contribution to ARLIS (Alaska Resources Library and Information Services, 02550), which serves as a central access point and repository for information generated as a result of the oil spill.
- Continue GEM planning project (02630), which is conducting the planning and public review necessary to develop GEM.

NOTE: As mentioned above, additional funds for Project 02052/Community Stewardship Capacity Building may be considered by the Trustee Council later in FY 02. A total of \$135,000 has been identified for this purpose.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02052	Community Stewardship	\$45.0		\$45.0
02250	Project Management	\$181.7		\$181.7
02360	National Research Council	\$90.1	\$0.0	\$90.1
02535	Trustee Council Report	\$52.4	\$0.0	\$52.4
02550	ARLIS	\$93.4		\$93.4
02630	Planning for GEM	\$304.7	\$0.0	\$304.7
TOTAL		\$767.3	\$0.0	\$767.3

HABITAT PROTECTION AND ACQUISITION

The *Exxon Valdez* Trustee Council funds the acquisition and protection of land in order to protect the habitat of injured resources. Project 02126 continues the support services necessary for these land acquisitions, such as realty staff, appraisals, title reports, on-site inspections, and hazardous materials surveys.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02126	Habitat Acquisition Support	\$161.8		\$161.8

As of December 2001, the Trustee Council has committed \$343.3 million to protect 635,770 acres of land in large parcels (generally over 1,000 acres each), as follows. Interests in the lands protected by the Council range from acquisition of fee simple title to various forms of conservation easements.

- 23,800 acres within Kachemak Bay State Park, including a highly productive estuary and several miles of anadromous fish streams and intertidal shoreline, from Seldovia Native Association;
- 32,537 acres within the Kenai Fjords National Park and on adjacent islands within the Alaska Maritime National Wildlife Refuge, including valuable coastal habitat, from English Bay Corporation;
- 26,665 acres of prime habitat on Shuyak Island, at the northern tip of the Kodiak archipelago, from the Kodiak Island Borough;
- 41,549 acres of mature spruce forest and highly productive coastal habitat in the Kodiak archipelago, in what has now become Afognak Island State Park, from the Seal Bay Timber Company;
- 41,750 acres of land and conservation easements on northern Afognak Island, including buffers around Paul's and Laura lakes and some of the most highly ranked habitat in terms of restoration value in the spill region, from Afognak Joint Venture;
- 59,674 acres of prime habitat for salmon, bald eagles, bears, and other species in the Kodiak National Wildlife Refuge from Koniag, Inc.;
- 55,402 acres of conservation easements along the Karluk and Sturgeon rivers, from Koniag, Inc.; the Trustee Council's January 2001 offer to extend the existing non-development easement for another ten years has been accepted by the Koniag Board of Directors and final closing documents are being prepared;
- 115,973 acres within Kodiak National Wildlife Refuge from Akhiok-Kaguyak, Inc.;
- 31,609 acres of land and conservation easements within the Kodiak National Wildlife Refuge from Old Harbor Native Corporation;
- 59,520 acres of land and conservation easements in Prince William Sound, including parcels at Eshamy Bay and Jackpot Bay, which have some of the

- highest restoration values in the spill area, from Chenega Corporation;
- 77,477 acres of land, conservation easements, and timber easements, including Port Gravina, Sheep Bay, and Windy Bay, which are considered among the most valuable parcels in Prince William Sound for recovery of species injured by the spill, from Eyak Corporation; and
- 69,814 acres of land and conservation easements, including Bligh Island and Two Moon Bay, which were the third and fourth highest ranked parcels in terms of restoration value in Prince William Sound, from Tatitlek Corporation.

In total, over 1,400 miles of coastline and more than 300 anadromous rivers, streams, and spawning areas have been protected through the Trustee Council's large parcel program. Once the Karluk and Sturgeon rivers package with Koniag, Inc. is completed, the Council's large parcel program will be essentially complete.

In regard to the small parcel program, the Trustee Council has spent \$20.5 million to acquire 7,865 acres of habitat in small parcels (generally under 1,000 acres each), and authorized \$1.5 million to purchase an additional 1,100 acres in small parcels. These lands are typically located on coves, along important stretches of river, at the mouths of rivers, or adjacent to valuable tidelands, and are often close to spill area communities. These lands are acquired for their habitat qualities as well as their importance for subsistence and recreational use.

In January 2001 the Trustee Council approved \$1 million for the U.S. Department of the Interior to enter into a grant with The Nature Conservancy and The Conservation Fund to continue the Council's habitat protection effort in Fiscal Year 2002. The advantages these two non-profit organizations bring to the program are an ability to respond more quickly than government to opportunities for acquisition of priority lands, to leverage resources by attracting matching funds, and to broaden the protection impact of dollars spent by achieving below-appraised-value purchases through the use of tax incentives and estate planning strategies. The grant was finalized in October 2001 and the grantees recently briefed the Council on a number of specific parcels that they are seeking to purchase.

Beginning in October 2002, the Trustee Council has designated \$25 million of Restoration Reserve funds for a long-term habitat protection program. The \$25 million will serve as an endowment, with annual earnings (probably more than \$1 million annually) dedicated to habitat protection.

Restoration efforts in the Pacific Northwest have taught us that habitat protection is essential to the health of salmon species. Researchers have concluded that depleted salmon populations cannot rebuild if habitat that is critical during any of their life stages is seriously compromised. This lesson extends as well to the other fish, birds, and mammals injured by the oil spill that nest, feed, molt, winter, and seek shelter in the habitat protected through the Council's habitat protection and acquisition program.

**PUBLIC INFORMATION/SCIENCE
MANAGEMENT/ADMINISTRATION**

The cost of the administrative functions necessary to efficiently implement the restoration program (project 02100) continues to decline, from a high of \$4.1 million in FY 94 to \$1.5 million in FY 02. Project 02100 includes funds for the independent scientific review of project proposals and results, the Trustee Council's 17-member Public Advisory Group (PAG), the Council's Annual Restoration Workshop, public meetings and other communication efforts, operations and staff support for the Trustee Council itself, an annual financial audit, and a variety of smaller items.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02100	Public Info/Science Mgt/ Administration	\$1,500.0		\$1,500.0

OTHER PROJECTS

In addition to the projects and activities described on the preceding pages, the Trustee Council also authorized funds for one proposal submitted for a capital construction project. This "other project" is summarized below and described in more detail in Appendix A. Because it is a capital project, its funding is outside of the regular work plan of research, monitoring, and general restoration projects.

- Complete lower Cook Inlet waste management project (02514). In FY 99, the Trustee Council funded development of a plan for reducing marine pollution in Nanwalek, Port Graham, and Seldovia. The plan was completed in FY 01. FY 02 Phase 1 will consist of site visits, training, and follow-up assistance by the Alaska Department of Environmental Conservation, and others, in regard to existing waste management equipment and procedures in these three communities. Following Phase I, the Council might be asked to consider funding for a Phase II later in FY 02. Phase II would likely consist of any additional equipment or facilities needed to complete implementation of the plan.

Funding Approved for Fiscal Year 2002

Project Number and Title		FY 02 Approved	FY 03 Estimate	TOTAL 02-03
02514	Lower Cook Inlet Waste Management	\$47.9		\$47.9

**How to Read Appendix A –
Description of Projects and Trustee Council Action**

Proposer	The individual, organization, or Trustee agency that submitted the project proposal.
Lead Agency	The Trustee agency (USFS, NOAA, DOI, ADFG, ADEC, or ADNR) to which the project has been assigned for project management purposes.
New or Cont'd	Whether or not the project is the continuation of a project funded by the Trustee Council in FY 01. Also, what year FY 02 is in the Council's funding of the project, followed by the total number of years Council funding is expected to be sought (e.g., 2nd year of a 3-year project).
FY 02 Approved	The amount of funding approved by the Trustee Council for fiscal year 2002 (October 1, 2001 - September 30, 2002).
Deferred Further	For a few projects, the Trustee Council deferred a decision on FY 02 funding until later in FY 02. This column shows the amount of funding requested for any deferred project in FY 02.
FY 03 Estimate	The estimated project cost for FY 03.
Total FY 02-03	Sum of the estimated project cost for FY 02 and FY 03.
Abstract	A brief summary of the project.
Chief Scientist's Recommendation	The Chief Scientist's recommendation on the project's technical merit.
Trustee Council Action	The Trustee Council's decision on project funding for FY 02.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02012-BAA	Photographic and Acoustic Monitoring of Killer Whales in Prince William Sound and Kenai Fjords	C. Matkin/North Gulf Oceanic Society	NOAA	Cont'd 10th yr. 10 yr. project	\$35.2	\$0.0	\$0.0	\$35.2

Project Abstract

This project will close out the monitoring of the damaged AB resident pod and the potentially endangered AT1 transient population as well other Prince William Sound/Kenai Fjords killer whales. Monitoring has occurred on a yearly basis since 1984. Analysis of FY 01 data will be completed, as well as additional modeling of the resident killer whale population and AB pod and publication of those results. Remote hydrophone data will be collected through December 2001 and data from all years will be summarized and assessed. Distribution of killer whales in Kenai Fjords over the course of the project will be examined using GIS techniques. A final examination of resident killer whale prey will be made using samples collected from 1997-2001. A final report will be submitted.

Chief Scientist's Recommendation

This proposal would continue a 12-year study of population trends of killer whales in Prince William Sound. The principal investigator has made major contributions to characterizing the populations of killer whales and understanding killer whale biology in the northern Gulf of Alaska. It is not clear that we need to continue surveys on an annual basis in order to track the AB pod and AT1 group, although some aspect of killer whale ecology could be a component of GEM. Fund closeout only in FY 02 (no field work), contingent on delivery of past due manuscripts.

Trustee Council Action

Fund closeout of this project contingent on submittal of overdue manuscripts (mating systems and niche partitioning). This project has provided valuable information about the long-term effects of the oil spill on resident and transient pods of killer whales in Prince William Sound. Annual surveys do not appear to be necessary to track the AB pod and AT1 group.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02052	Natural Resource Management and Stewardship Capacity Building	P. Brown-Schwalenberg/CRRRC	ADFG	Cont'd 8th yr.	\$45.0	\$135.0		\$45.0

Project Abstract

In FY 02, this project will shift its focus to the integration of Tribal Natural Resource Programs with GEM. Communities involved in the project are Tatitlek, Chenega Bay, Port Graham, Nanwalek, Cordova/Eyak, Seward/Qutekcak, Seldovia, Valdez, Kodiak Island Region/Ouzinkie, and the Alaska Peninsula Region/Chignik Lake. In FY 02, the project will focus on three objectives: (a) developing the technical capacity at the local level to allow for meaningful involvement in GEM, (b) identifying specific monitoring activities that fit within GEM, and (c) developing possible pilot projects for FY 03.

Chief Scientist's Recommendation

The community involvement project is a very valuable part of the restoration program. Community monitoring plans and Tribal Natural Resource Management Plans may have tangible linkages to GEM in the future. However, there are objectives proposed for FY 02 that were also in the FY 01 proposal. There are also FY 00 objectives that have not been met. In addition, the project is delinquent on reports and has not produced a revised Detailed Project Description as requested. The lack of identifiable activity and products for this project precludes a recommendation for further funding. Do not fund.

Trustee Council Action

Continue to defer this project. In general, the project seems to have lost some of its focus over the past six months, partially due to staff turnover. In addition, during review of the FY 02 proposal, the reviewers raised a number of questions and identified a number of issues that need further attention. Although the principal investigator has provided some additional information, a number of questions remain unanswered. Interim funds (\$45,000) approved by the Trustee Council in August have not yet been authorized, as the strategy for completion of the Tribal Natural Resource Management Plans is still unclear and several reports are overdue (99052B, 00052, 00610). The longer term objectives of the project also remain unclear. Although several discussions with the principal investigator about the future program have taken place, the requested revised proposal has not been submitted. In addition, the Community Involvement Coordinator position, which was vacated in August 2001, has not yet been advertised or filled. Community involvement and development of local stewardship capacity are essential components of GEM, and this project should continue in some form. However, I cannot recommend continuation in its current form. I recommend that we proceed by convening a working group--that broadens the perspective and expertise beyond the current project participants--to develop options for meaningful community involvement and stewardship development under GEM, with the goal of bringing a revised proposal to the Trustee Council in January 2002.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02100	Public Information, Science Management, and Administration	All Trustee Council Agencies	ALL	Cont'd	\$1,500.0	\$0.0		\$1,500.0

Project Abstract

This project provides overall support for science management, public involvement, and administration of the restoration program. This includes funding for the Trustee Council staff working at the direction of the Executive Director, the scientific peer review process, public involvement efforts including the active participation of the 17-member Public Advisory Group (PAG), and Trustee agency participation in the restoration program.

Chief Scientist's Recommendation

Proposal not reviewed.

Trustee Council Action

Fund. This project provides overall support for administration and implementation of the restoration program. [Note: This project will be funded outside of the regular FY 02 work plan of research, monitoring, and general restoration projects.]

02126	Habitat Protection and Acquisition Support	ADNR, DOI/USFWS, USFS	ADNR USFS DOI	Cont'd	\$161.8	\$0.0		\$161.8
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Project Abstract

This project will cover certain expenses incurred by Trustee agencies in receiving title to parcels acquired by the Trustee Council.

Chief Scientist's Recommendation

Proposal not reviewed.

Trustee Council Action

Fund. This project will fund the Alaska Department of Natural Resources and the U.S. Fish and Wildlife Service to complete in FY 02 acquisitions that are in progress in FY 01. In FY 02, additional habitat protection activity will occur under a grant to The Nature Conservancy and The Conservation Fund approved by the Trustee Council in January 2001. The Council's resolution on the grant identified specific support activities that will continue to be conducted by the land managing agencies (e.g., appraisal review, title review, hazardous materials inspection, and NEPA compliance), and the costs of those activities will also be funded through this project. However, parcels to be purchased under the grant, and agency costs associated with those parcels, have not yet been identified. The Council may be asked to approve these additional costs later in FY 02. [Note: This project will be funded outside of the regular FY 02 work plan of research, monitoring, and general restoration projects.]

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02144	Common Murre Population Monitoring	D. Roseneau/USFWS	DOI	Cont'd 7th yr. 7 yr. project	\$14.8	\$0.0	\$0.0	\$14.8

Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

FY 02 will provide closeout funds for this project, which censused the Chiswell Islands murre colonies during the FY 01 field season. The closeout work will consist of analyzing the data collected during FY 01 and comparing these results with previous postspill population counts, running a power analysis using these and other murre population count data (e.g., from the Barren Islands), and writing a final report discussing the recovery status of murres at this injured nesting location and in the spill area.

Analysis of the census data is necessary to the success of the murre monitoring effort. The work is reasonably straightforward, inexpensive, and undertaken by capable personnel. The results of the analyses and description of trends in abundance at each of the islands and at the complex as a whole will be useful in refining census methodologies and in understanding variability in murre populations in the Gulf of Alaska. As recommended last year, a power analysis should also be prepared. Fund.

Fund project closeout, including power analysis. This project censused the common murre colony at the Chiswell Islands in FY 01. The results of this project will be useful in refining census methodologies and in understanding variability in murre populations in the Gulf of Alaska.

02154	Support Costs: Archaeological Repository/Display Facilities/Exhibits	J. Bittner/ADNR	ADNR	Cont'd	\$29.1	\$0.0		\$29.1
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Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

In January 1999, the Trustee Council authorized \$2.8 million for a grant to Chugachmiut, Inc. to develop an archaeological repository for Prince William Sound and lower Cook Inlet, local display areas in seven communities in those regions, and traveling exhibits to display in the local facilities. The resolution also states the Council's intent to provide a reasonable amount of funding for project management and agency general administration (GA). This project will provide project management and GA funds for FY 02.

Proposal not reviewed.

Fund. This project will provide essential oversight for the archaeological repository, local display facilities, and traveling exhibits being developed under Project 99154. [Note: This project will be funded outside of the regular FY 02 work plan of research, monitoring, and general restoration projects.]

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02159	Surveys to Monitor Marine Bird Abundance in Prince William Sound	D. Irons/USFWS	DOI	Cont'd 9th yr.	\$33.3	\$0.0	\$0.0	\$33.3

Project Abstract

This project will evaluate the current study design and analytical methods for Project /159, with the objective of transition into a long-term monitoring program. Seven previous surveys have monitored population trends for more than 65 bird and 8 marine mammal species in Prince William Sound with the overall objective of monitoring recovery of injured populations. This project will build upon these previous surveys, by use of computer simulations of different sampling strategies using data collected from previous surveys (1989-2000), to determine the optimal study design in regard to number of transects, transect length, habitat type, and stratifications. The transition from monitoring recovery of injured populations in the short-term to a program of long-term ecological monitoring, requires methodologies which ensure precise and reliable population estimates which are capable of detecting population changes and trends. A final report will also be prepared.

Chief Scientist's Recommendation

This project continues to compare population trends in marine birds from oiled and unoled portions of Prince William Sound. The last boat survey was conducted in 2000 (Project 00159). The patterns found in bird populations indicate slow change or little annual change in many populations. It is also apparent that the long term data from this project (the earliest surveys were done in 1972-73) are becoming increasingly valuable and potentially quite useful in understanding changes in the productivity of Prince William Sound on decadal time scales. The project was not designed to determine the effects of climate, and it is not certain to what effect climatic changes can explain the population patterns observed since the spill. The project has potential value to GEM, but a thorough analysis of the project design needs to be carried out in order to optimize sampling frequency for a long-term, low-cost program. Therefore, I recommend postponing the next survey until after a final report can be written that (a) summarizes the project's findings to date, (b) carefully and thoroughly interprets the data in regard to potential sources of change (e.g., oil and climate), and (c) includes an analysis that can be used to design a longer-term, lower-cost survey strategy that preserves features of the current sampling design for comparability purposes. Fund final report only in FY 02. There should be significant cost sharing by the US Fish and Wildlife Service in preparing the final report.

Trustee Council Action

Fund contingent on submittal and approval of a revised Detailed Project Description and budget that reduce the scope of work in FY 02 to preparation of a final report only. To increase the project's usefulness to GEM, a thorough analysis of the project design needs to be undertaken in order to design a sampling program that optimizes sampling frequency for a long-term, low-cost program. In FY 02, a comprehensive final report that addresses the three points identified by the Chief Scientist should be prepared. If submitted by February 1, 2002, the final report can be peer reviewed prior to the FY 03 project funding cycle and funding for the next survey considered at that time. The Trustee Council has supported boat surveys of marine birds and mammals in Prince William Sound since the time of the spill. These surveys have been the primary means of monitoring the recovery of a suite of coastal birds and other wildlife.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02163M	APEX: Numerical and Functional Response of Seabirds to Fluctuations in Forage Fish Density	J. Piatt/USGS	DOI	Cont'd 9th yr. 9 yr. project	\$50.0	\$0.0	\$0.0	\$50.0

Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

This project will fund preparation of synthesis manuscripts for this component of the APEX project. The main field program occurred in 1995-99, with collection of data on seabird survival and stress continuing in 2000-01. The work involved at-sea surveys for forage fish and seabirds and some characterization of oceanography, while measuring aspects of seabird breeding biology and foraging behavior at adjacent colonies.

This is a sound and logical conclusion of a large project. The principal investigator has done an excellent job of taking an ecosystem approach to understanding issues highly relevant to the Trustee Council. The long list of publications and theses attests to this project's scientific success so far. This publication effort is very important to the credibility and accountability of the EVOS restoration program. Fund.

Fund contingent on submittal of (a) overdue reports (99163/APEX chapter, 01338/Murre and Kittiwake Survival final report, and 00501/Seabird Monitoring Protocols), (b) the four manuscripts for which this principal investigator and his research team received funding under 01163/APEX Summary Scientific Papers, and (c) two 00479/Food Stress manuscripts. In FY 02, this project will prepare eight synthesis manuscripts relating to regulation of seabird populations and food supply.

02190	Construction of a Linkage Map for the Pink Salmon Genome	F. Allendorf/Univ. Montana	ADFG	Cont'd 7th yr. 8 yr. project	\$168.0	\$0.0		\$168.0
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Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

This project will complete the analysis of experiments conducted at the Alaska SeaLife Center that use the linkage map to test for effects of regions of the genome on traits that are important to recovery of pink salmon (e.g., growth and survival). Sexually mature adults from the 1999 cohorts produced from wild pink salmon collected from Likes Creek are expected to return to Resurrection Bay in August and September 2001. Genotypes in released fry will be compared to returning adults to test for genetic differences in marine survival and other life history traits (e.g., body size, egg number, and egg size). [Note: This project, which was scheduled to close out in FY 02, is now requesting \$80,300 for FY 03.]

This project has already produced a linkage map including a large number of genes in the pink salmon genome. The remaining objectives, determining the relationships between growth and survival and mapped genes, depend entirely on the success of the project in capturing pink salmon that originated from the 1999 crosses conducted at the Alaska SeaLife Center and returned to upper Resurrection Bay in 2001. Funding for FY 02 had been deferred pending capture of at least 200 returning experimental fish. Two hundred and sixty-two returning experimental fish were captured. Fund, with closeout as soon as possible after the data are analyzed.

Fund. This project is important for understanding the genetic traits of pink salmon that affect growth and survival. In addition, the work being done under this project will lay the foundation for experiments to answer questions important to fisheries management about hatchery/wild fish interactions. For example, are hatchery fish changing the gene pool in a way that makes wild fish maladapted to their environment? Are enough hatchery fish getting into streams to effect productivity of wild fish? How adapted are wild fish to particular streams? The project is scheduled to close out in FY 03.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02195	Pristane Monitoring in Mussels	J. Short, P. Harris/NOAA	NOAA	Cont'd 7th yr. 7 yr. project	\$20.0	\$0.0	\$0.0	\$20.0

Project Abstract

This project has focused on the transport of pristane from *Neocalanus ssp* copepods into mussels in Prince William Sound for the past six years. In FY 00 and FY 01, the utility of monitoring the response of pristane in mussels to mass-release of juvenile pink salmon from Prince William Sound hatcheries was successfully initiated using pristane concentration levels. In FY 02, this project will fully analyze six years of data to address the seasonal, interannual, and geographic variabilities of pristane concentrations in mussels. The utility of monitoring pristane levels to assess feeding conditions and survival of juvenile pink salmon during their initial marine residence will be evaluated by comparing survival forecasts to actual returns. The relation of marine survival estimates for hatchery pink salmon to wild stocks in Prince William Sound will also be examined.

Chief Scientist's Recommendation

This project has developed a relationship over the last several years between concentrations of pristane in mussels (an indicator of food availability) in the early growing season and survival of hatchery pink salmon in Prince William Sound. As expected, however, the results also indicate that there are other important determinants of juvenile pink salmon survival in the early marine phase (some of those factors have been modeled with some success under the SEA/Sound Ecosystem Assessment project). This is not surprising, as many other efforts elsewhere in the world have shown the difficulty of predicting recruitment in marine fishes. The model developed by this project has made a valuable contribution to identifying ecological interactions that influence pink salmon survival. To bring the project to a logical and useful conclusion, the principal investigator should synthesize project results in FY 02, including preparation of a final report and publication of the project results in the peer reviewed literature. It may be that the results of this project could be utilized in a longer-term effort to better characterize the crucial factors influencing fish recruitment in the system. Fund closeout.

Trustee Council Action

Fund closeout of this project contingent on submittal of overdue report (00195) and manuscript (00598). This project has been working to develop an inexpensive measure of marine productivity that would allow predictions about future fisheries production and harvest levels.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02210	Prince William Sound/Lower Cook Inlet Youth Area Watch	R. DeLorenzo/Chugach School District	ADFG	Cont'd 7th yr.	\$106.1	\$0.0		\$106.1

Project Abstract

This project links students in the oil spill impacted area with research and monitoring projects funded by the Trustee Council. The project involves students in the restoration process and provides these individuals the skills to participate in restoration now and in the future. Youth conduct research identified and delegated by principal investigators who have indicated interest in working with students. Youth Area Watch fosters long-term commitment to the goals set out in the restoration plan and is a positive community investment in that process. Participating communities in FY 02 will be Tatitlek, Chenega Bay, Cordova, Nanwalek, Port Graham, Seldovia, Seward, Valdez, and Whittier.

Chief Scientist's Recommendation

The Youth Area Watch has been a popular and successful project, probably the most successful of the EVOS projects in terms of encouraging and facilitating positive participation in the affected communities. The proposers seek what would be a seventh year of funding for this project. However, they have done a good job of obtaining supplemental or alternative funding and are cognizant of the need to continue to seek such funds as the restoration program moves toward implementation of GEM. The future of the project remains unclear. The proposal would be strengthened by giving more attention to the value of the data gathered by the young people and to the evaluations of participating investigators. However, this is a strong and successful effort, and it should continue. Fund.

Trustee Council Action

Fund, including funding increment (\$9,700) for teacher participation in JASON. JASON is a nonprofit organization dedicated to education in the area of environmental science and research. Its 2002 expedition "Frozen Worlds" will take place in Southcentral Alaska, and will include curriculum development and teacher training. In general, Youth Area Watch involves local youth in restoration projects. In FY 02, youth in Chenega Bay, Cordova, Nanwalek, Port Graham, Seldovia, Seward, Tatitlek, Valdez, and Whittier will participate. The Trustee Council's contribution to this project has declined each year since the project's inception, as the Chugach School District has obtained funds from other sources to sustain the program. FY 02 was expected to be the final year of Council support, but this might be the type of community effort that is appropriate under GEM.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02245	Community-Based Harbor Seal Management and Biological Sampling	V. Vanek/ADFG, M. Riedel/Alaska Native Harbor Seal Commission	ADFG	Cont'd 9th yr. 9 yr. project	\$26.8	\$0.0	\$0.0	\$26.8

Project Abstract

Under this project, village-based technicians are selected by the Alaska Native Harbor Seal Commission and trained by the Alaska Department of Fish and Game to collect biological samples from harbor seals. The samples are transported to Anchorage or Kodiak for further sampling and distribution to participating scientists for analysis and the University of Alaska museum for archiving. In FY 02, the sample collection program in Prince William Sound and lower Cook Inlet, around Kodiak Island, and along the Alaska Peninsula will continue. The Alaska Native Harbor Seal Commission will produce and distribute a newsletter with summaries of the biological sampling program. FY 02 is the closeout year for this project.

Chief Scientist's Recommendation

This has been a highly successful program for involving the subsistence community in research on a valuable resource. The scientific community has benefited from obtaining samples of harbor seal tissues that were otherwise unavailable. A large number of projects have used samples from this activity in the past and there appears to be a use for samples currently being archived and which may be analyzed in the future. Fund revised proposal, which updates information on sample collection to date, the sample database, and efforts to integrate the EVOS biosampling program with other activities statewide.

Trustee Council Action

Fund revised proposal, which updates information on the number and distribution of samples collected, the sample database, and activities undertaken to integrate the EVOS biosampling program with efforts underway statewide. This project will continue the Alaska Native Harbor Seal Commission's biological sample collection program for harbor seals in the spill area. This multi-year project has successfully provided samples to harbor seal researchers. FY 02 was expected to be the final year of Council support, but this might be the type of community effort that is appropriate under GEM.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02247	Kametolook River Coho Salmon Subsistence Project	J. McCullough, L. Scarbrough/ADFG	ADFG	Cont'd 6th yr. 6 yr. project	\$30.8	\$0.0	\$0.0	\$30.8

Project Abstract

Subsistence users from the Alaska Peninsula Native Village of Perryville have noted significant declines in the coho salmon run in the nearby Kametolook River since the oil spill. Criminal settlement funds were used in FY 96 to determine what method would best restore the river's coho salmon stock to historic levels. This project will provide funding through FY 02 for the Alaska Department of Fish and Game to try conservative and safe restoration methods. In 1997, two instream incubation boxes were installed in the upper reach of the Kametolook River. In 1998, 1999, and 2000 holding pens were also used. Due to continual low escapement of coho into the Kametolook River system, the project will be unable to achieve the goal of restoration within two life cycles of the fish. In FY 02, the project will expand to investigate nearby coho stocks as potential brood sources for rehabilitation of the Kametolook coho run.

Chief Scientist's Recommendation

This project is an integral part of a cluster of projects aimed at restoring damaged subsistence resources. Despite a limited success in restoring and supplementing Kametolook River coho thus far, the project is important because it directly addresses a subsistence issue, has strong community involvement, and holds potential for some success. There is a strong educational component as well. Fund final year of activities in FY 02, including project closeout.

Trustee Council Action

Fund, including new objective related to investigating nearby coho stocks as potential brood sources. This project is working to enhance a small coho salmon run in the Kametolook River near the Alaska Peninsula village of Perryville as a replacement for other subsistence resources lost or reduced due to the oil spill. The project has a strong community involvement component. FY 02 is expected to be the final year of Trustee Council funding, even though it is unlikely that the run will be self sustaining in the foreseeable future.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02250	Project Management	All Trustee Council Agencies	ALL	Cont'd	\$181.7	\$0.0		\$181.7

Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

Project management represents those costs incurred by the state and federal Trustee agencies in fulfilling their responsibility to ensure that individual projects are managed consistent with the Memorandum of Agreement and Consent Decree, the Restoration Plan, and Trustee Council authorization. Tasks performed by project managers include coordinating activities between principal investigators and the Restoration Office, reviewing project expenditure activity, assisting in the development of project proposals, and tracking project reports.

Proposal not reviewed.

Fund. The FY 02 funding level is a reduction from the amount approved for FY 01 (\$284,300), consistent with the reduction in the annual funding cap for the overall work plan. A decision on whether or not to provide any project management funds once funding has shifted to the Restoration Reserve (FY 03 and beyond) has not yet been made. Project management helps provide accountability for the work plan process.

02256B-CLO	Sockeye Salmon Stocking at Solf Lake	D. Gillikin/USFS	USFS	Cont'd 7th yr. 7 yr. project	\$15.5	\$0.0	\$0.0	\$15.5
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Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

This project will benefit subsistence users of western Prince William Sound. There are two phases to the project. Phase 1, which began in FY 96, verified the ability of Solf Lake to support a sustainable population of sockeye salmon. Phase 2 included stocking the lake with approximately 100,000 sockeye salmon fry, then ensuring access to the lake for returning adult salmon. The stocking program began in 1998 along with modification to the two outlets to control water levels. The reconstruction of the fishway in the eastern channel was completed in the summer of 2000. Returning adult salmon to Solf Lake will be monitored starting in 2001 to evaluate the improvements.

This project is an integral part of a cluster of projects aimed at restoration of oil-damaged, subsistence resources in Prince William Sound. Initial limnological studies and revitalization of the fishway to the lake have been completed, but changes in brood stock (from Eyak and Coghill lakes) and unavailability of brood stock in FY 02 have raised questions about the ability of the project to meet its objectives. In FY 01, the Trustee Council requested preparation of the final report in FY 02, and this still seems appropriate. The proposed FY 03 activities are not recommended for funding. Fund revised proposal, which closes out the project in FY 02.

Fund revised proposal, which reduces the scope of the FY 02 project to monitoring and final report writing only. This project is intended to provide sockeye salmon as a replacement for resources lost or reduced due to the oil spill. Recreational, commercial, and subsistence fishers should all benefit from the project.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02290	Hydrocarbon Database and Interpretation Service	J. Short, B. Nelson/NOAA	NOAA	Cont'd 11th yr.	\$35.0	\$0.0		\$35.0

Project Abstract

This ongoing project provides data and sample archiving services for all samples collected for hydrocarbon analysis in support of Trustee Council projects. These data represent samples collected since the oil spill in 1989 to the present and include environmental and laboratory National Resource Damage Assessment and restoration data. Additionally, this project provides interpretive services for hydrocarbon analysis, public releases of the hydrocarbon and pristane databases, and storage and maintenance of the hydrocarbon sample archives.

Chief Scientist's Recommendation

The restoration program needs this project for FY 02, as it maintains the integrity of the hydrocarbon database, makes new additions, and supplies interpretative services. It is recommended that the Trustee Council fund this program through FY 02, to the end of the settlement period. However, the need for this program has not been assessed with regard to GEM and other priorities that will begin in FY 03. Therefore, there should be no guarantee or recommendations for funding beyond FY 02. Fund.

Trustee Council Action

Fund FY 02 only contingent on submittal of overdue report (00195) and manuscript (00598). This project is the ongoing analysis and interpretation of hydrocarbon data for other Trustee Council funded studies. However, the need for the database has not been assessed with regard to GEM, and needs to be. Funding for FY 03 may be considered following such an assessment.

02320	Sound Ecosystem Assessment (SEA): Printing the Final Report	W. Hauser/ADFG	ADFG	Cont'd 8th yr. 8 yr. project	\$2.1	\$0.0	\$0.0	\$2.1
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Project Abstract

This project will print, bind and distribute the Sound Ecosystem Assessment (SEA) final report, which is a required document. Funding for copying, binding and mailing the final report was provided in FY 00, but completion has been delayed and the encumbered funds cannot be spent after June 30, 2001. The FY 00 unused funds have lapsed.

Chief Scientist's Recommendation

Producing the SEA final report is essential, and this proposal seeks only to reauthorize funding that has expired. Fund.

Trustee Council Action

Fund. Due to delays in completion of the SEA final report, funds provided to the Alaska Department of Fish and Game in FY 00 (Project 00320) for printing the final report have lapsed. This project simply "re-approves" those funds, but at a reduced level due to a reduction in the number of pages and a decision to post the final report on the Web rather than print the number of copies originally planned.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02340	Toward Long-Term Oceanographic Monitoring of the Gulf of Alaska Ecosystem	T. Weingartner/ UAF	ADFG	Cont'd 5th yr.	\$77.8	\$0.0		\$77.8

Project Abstract

Interannual variations in temperature, salinity, and their vertical distribution on the northern Gulf of Alaska shelf reflect environmental changes that might affect this marine ecosystem. This variability needs to be quantified and understood based on extended time series such as the 30-year record at hydrographic station GAK1 near Seward. This project maintains this time series and will continue to quantify the variability and understand the sources of it. It will also begin to document interannual variations in near-surface (upper 10 m) stratification and the timing of the spring bloom on the inner shelf. The data and associated analyses are suggested as being an important component to the development of the GEM program.

Chief Scientist's Recommendation

The results of this project are key to GEM implementation. Further analysis of data from this project promises to reveal important relationships that would be key to monitoring the dynamics of the Alaska Coastal Current. The principal investigator proposes to do data analysis and write a manuscript for a peer reviewed journal in FY 02, which is highly desirable. This project should be continued in FY 02 with the following objectives: (a) produce annual report on FY 01 results, (b) prepare manuscript, and (c) continue gathering data. Fund revised proposal, which contains these objectives.

Trustee Council Action

Fund revised proposal, which provides for continued Trustee Council support of hydrographic station GAK1 and the accompanying retrospective analyses of the station's data record. GAK1 provides a long-term data set that allows characterization of the Alaska Coastal Current, which is essential to understanding climatological forcing of productivity and will be important for GEM.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02360-BAA	The Exxon Valdez Oil Spill: Guidance for Future Research Activities	C. Elfring/Polar Research Board, NRC	NOAA	Cont'd 3rd yr. 3 yr. project	\$90.1	\$0.0	\$0.0	\$90.1

Project Abstract

The National Research Council's Polar Research Board and Board on Environmental Studies and Toxicology have appointed a special committee to review the scope, content, and structure of the Trustee Council's two GEM documents, the draft Science Program and the draft Monitoring and Research Plan. To date, the committee has provided guidance in two documents: a November 2000 letter commenting on the schedule and process by which the draft Monitoring and Research Plan would be developed and a February 2001 Interim Report providing detailed comments on the draft Science Program, including missions, goals, administration, scale, data management, and community involvement elements. The committee's next and final task will be to prepare a final report analyzing whether the Monitoring and Research Plan is complete, scientifically sound, and meets the expectations of the Trustee Council. The committee received the draft plan in August 2001 and held a meeting to begin its review in September 2001. The committee will spend the fall preparing its final report. The report is expected to go to outside review in January 2002 and be delivered to the Trustee Council in April 2002.

Chief Scientist's Recommendation

Fund. National Research Council participation is essential to the successful implementation of GEM.

Trustee Council Action

Fund. This project, which is providing important external review of GEM, began in FY 00. The National Research Council (NRC) has provided interim comments on the Science Program. FY 02 activities will include review of the draft Monitoring and Research Plan and preparation of a final report containing conclusions and recommendations on GEM.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02395	Workshop on Nearshore/Intertidal Monitoring	T. Dean/Coastal Resources Associates, C. Schoch/Kachemak Bay NERR	ADFG	New 1st yr. 1 yr. project	\$63.6	\$0.0	\$0.0	\$63.6

Project Abstract

This project will produce a draft nearshore monitoring plan that provides a framework for future monitoring. A preliminary draft plan will be developed by the principal investigators that includes consideration of existing programs in the Lower 48 (e.g., PICES/North Pacific Marine Science Organization and PISCO/Partnership for the Interdisciplinary Study of Coastal Oceans) and Alaska (e.g., Prince William Sound and Cook Inlet Regional Citizens' Advisory Commissions). This draft will then be reviewed by a panel of four to five independent experts in nearshore marine ecology representing various interests and disciplines. A revised plan will be produced and presented to agencies, stakeholders, and other interested parties at a workshop held in conjunction with the EVOS Annual Workshop in January 2002.

Chief Scientist's Recommendation

A combined proposal is requested to include projects 02395 and 02569/Workshop on Gulf of Alaska Monitoring Network, with the overall objective of conducting a workshop to develop options for long-term monitoring of the nearshore/intertidal area. Fund revised proposal, which includes (a) community participation in the workshop, including funding for travel, (b) identification of the workshop objective as development of a range of options for intertidal monitoring design, for a network of sites, and broad community participation, (c) coordination with Trustee Council staff in putting together the workshop, (d) demonstration of a working relationship with other institutions and scientists supportive of the objectives of the workshop, including a list of expected participants, and (e) the process the principal investigators will use to cooperatively come to recommendations, including research priorities, once the workshop is complete.

Trustee Council Action

Fund. This project will use a workshop-based approach to develop options for long-term monitoring of the nearshore/intertidal area. The workshop and development of resulting recommendations are to be a collaborative effort between the two proposers, and should include the close involvement of researchers in the other Trustee agencies (U.S. Geological Survey and others). The workshop may identify pilot or preliminary work to be invited on nearshore/intertidal monitoring later in FY 02 or FY 03. A small amount of funds have been set aside for this purpose in FY 02 (see Project 02681). Nearshore/intertidal monitoring is expected to be an integral part of GEM.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02396	Alaska Salmon Shark Assessment	J. Rice, L. Hulbert/NOAA	NOAA	Cont'd 3rd yr. 3 yr. project	\$28.8	\$0.0	\$0.0	\$28.8

Project Abstract

This project will fund a closeout year of data analysis and manuscript preparation for this study of salmon sharks in Prince William Sound. Funding will cover analysis and final write-up of (a) data transmitted from satellite tags deployed on salmon sharks that will be scheduled to transmit during winter and spring of 2002, (b) data transmitted from satellite tags deployed on salmon sharks that will transmit when sharks frequent surface waters during summer, and (c) stomach samples collected during 2001 field sampling and pre-arranged stomach sample collections from the Copper River gillnet fleet and the Prince William Sound salmon seine fleet during the 2001 commercial fishing season. The funding will also cover FY 02 Argos time, NOAA Joint Tariff Agreement costs for satellite tag data recovery, and contracted data analysis. The final report will describe salmon shark movements, habitat utilization, regional fidelity, and diet composition from data collected during the project.

Chief Scientist's Recommendation

This is a competently prepared proposal that will finish gathering data from tags deployed on sharks in FY 01, analyze the data, and produce a final report. The investigators are well qualified to do the work. Fund.

Trustee Council Action

Fund. In FY 02, this project will analyze data from tags deployed in FY 01 that will pop up in FY 02, as well as from opportunistic aerial observations and shark stomachs contributed by fishermen and others. A final report will also be written. This project was undertaken because of an observed increase in the number of sharks in Prince William Sound in recent years.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02401	Assessment of Spot Shrimp Abundance in Prince William Sound	C. Hughey/ Valdez Native Tribe, C. O'Clair/ NOAA	NOAA	Cont'd 4th yr. 4 yr. project	\$25.5	\$0.0	\$0.0	\$25.5

Project Abstract

This project is estimating the abundance of spot shrimp and determining the structure of the spot shrimp population in Prince William Sound. It augments current Alaska Department of Fish and Game (ADF&G) surveys to determine whether the spot shrimp population is recovering from depletion. Project results and those of ADF&G in 1999 and 2000 indicate a cessation in the apparent decline of spot shrimp abundance in western Prince William Sound that had taken place 1992-98, and a slight increase in the number and weight of spot shrimp per pot in 1999 compared to 1998. The increase was markedly greater in 2000. FY 02 will fund closeout, produce manuscripts, and provide input into the development of a shrimp management plan with ADF&G.

Chief Scientist's Recommendation

This is the final year of a project to gather supplemental information on spot shrimp abundance in Prince William Sound. Fund closeout.

Trustee Council Action

Fund closeout of this project, which is studying the abundance of spot shrimp in Prince William Sound to determine whether the population can sustain seasonal openings for subsistence, personal use, and commercial fishing. Shrimp are not on the injured resources list. However, the Trustee Council's Restoration Plan allows restoration actions to address resources not on the list if the action will benefit an injured resource or service; this project will benefit the services of subsistence and commercial fishing. The project is a joint effort of the Valdez Native Tribe and the National Oceanic and Atmospheric Administration's Auke Bay Lab.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02404	Testing Archival Tag Technology in Coho Salmon	J. Nielsen/USGS-BRD	DOI	Cont'd 2nd yr. 2 yr. project	\$104.6	\$0.0	\$0.0	\$104.6

Project Abstract

Archive tags with temperature and light-geolocation sensors will be monitored for post-smolt coho salmon in Cook Inlet. Light/location relationships specific to the Gulf of Alaska developed under Project 00478 will be applied in this study of movement and migration paths for coho salmon during maturation in ocean environments in Cook Inlet. Salmon for this study will be reared in captivity (at the Alaska Department of Fish and Game hatchery at Fort Richardson) to 1+ year of age (200-250mm) and released in Cook Inlet as part of the department's Ship Creek sport-fishing hatchery release. FY 01 includes pilot studies of tag retention, behavior, and growth for coho in captivity. Ship Creek coho will be tagged mid-May. A spring release experiment in the first year will be contingent on the successful implementation and retention of these tags. Surveys for early jack recoveries will be done at the Ship Creek weir and among sport fishers. Monitoring for adult tag recoveries will be done in the coho commercial fishery in Cook Inlet and the derby sport fishery on Ship Creek. Archive tagged fish will be used to document coho salmon use of marine habitats, migration routes, contribution to the sport fishery, and hatchery/wild interactions for salmon in Cook Inlet.

Chief Scientist's Recommendation

This is an excellent project whose results will provide important information for defining the geographic location of coho habitat and sampling the physical characteristics of the habitat. It is on track for accomplishing its objectives and is being managed by an excellent investigator. The studies of tag retention, behavior, and growth of captive juveniles are underway and the results are promising. Additional advertising to various portions of the community should be conducted to increase potential for tag returns. Fund.

Trustee Council Action

Fund. In FY 01, the Trustee Council funded a pilot tag retention, behavior, and growth study to further test the development and application of archive tag technology, which has great promise for a variety of species. The pilot study has been completed, and a release experiment is already underway in FY 01. FY 02 funding will allow for continuation of the release experiment. The final report on this project will be submitted in FY 04, with all FY 03 and FY 04 costs being covered by the U.S. Geological Survey/Biological Resources Division (USGS-BRD). USGS-BRD is making a significant financial contribution to this project in FY 01 and FY 02 as well.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02407	Harlequin Duck Population Dynamics	D. Rosenberg/ADFG	ADFG	Cont'd 3rd yr. 3 yr. project	\$68.7	\$0.0	\$0.0	\$68.7

Project Abstract

Harlequin duck populations have not recovered from the effects of the oil spill. Populations are declining in oiled areas of Prince William Sound while increasing in unoiled areas. This project will conduct late-winter boat surveys to assess the recovery of ducks inhabiting oiled areas. Population structure, abundance, and recruitment will be compared between oiled and unoiled areas in Prince William Sound to assess trends, population dynamics, and the progress of recovery. The surveys will also help identify changes to the Gulf of Alaska ecosystem and improve the ability to differentiate between natural and man-caused population changes. FY 02 will be the final year of field work for the project; the final report will also be prepared in FY 02.

Chief Scientist's Recommendation

The data generated by this project are valuable and fit well with information gathered by Project /423 (Population Change in Selected Nearshore Vertebrate Predators). Together these projects should increase understanding of harlequin duck populations in Prince William Sound in relation to the oil spill. In FY 02, data gathering will be concluded and a final report, including an assessment and reevaluation of survey design for long-term monitoring, will be prepared. Fund.

Trustee Council Action

Fund revised proposal, which combines one more year of data collection in FY 02 with production of a final report, including assessment and reevaluation of a survey design for long-term monitoring, contingent on submittal of 00273 report. This project is assessing the recovery of harlequin duck populations inhabiting oiled areas. The harlequin duck is one of the species that is still not showing signs of recovery from the oil spill.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02423	Patterns and Processes of Population Change in Selected Nearshore Vertebrate Predators	J. Bodkin, D. Esler/USGS-BRD	DOI	Cont'd 4th yr. 5 yr. project	\$458.4	\$0.0	\$189.0	\$647.4

Project Abstract

Sea otters and harlequin ducks have not fully recovered from the oil spill. This project will explore links between oil exposure and the lack of population recovery, with the intent of understanding constraints to recovery of these species and the nearshore environment. In FY 02, sea otter work will include aerial surveys of distribution and abundance and estimates of age-specific survival rates. Harlequin duck field studies will examine the relationship between survival and CYP1A. Captive experiments on harlequin ducks will examine the relationships between oil exposure and CYP1A induction, and metabolic and behavioral consequences of exposure.

Chief Scientist's Recommendation

This is the fourth year of a complex project with field monitoring and laboratory dosing experiments at the Alaska SeaLife Center. The goals of this project are basically sound and the information that will be obtained valuable to the needs of the Trustee Council and to those trying to understand sea otters, ducks, and the nearshore ecosystem. The new objective to examine interannual variability in growth rates of clams is not compelling and should not be funded. Since the Council makes no commitment to fund beyond FY 02 as the restoration program transitions to GEM, sea otter field work should conclude in FY 02. There may be some justification for another year of harlequin duck field work in FY 03; that determination will be made following a review of harlequin duck recovery status in 2002--FY 03 would be another year of field work on harlequins or the closeout year, depending on the results of that review. Fund revised proposal, which addresses the above concerns.

Trustee Council Action

Fund revised Detailed Project Description, which deletes the new objective related to growth rate of clams. The sea otter component will be closed out in FY 03. The harlequin duck component will be continued or closed out in FY 03; this determination will be made following a review of harlequin recovery status in Spring 2002. The project is an important extension of the Nearshore Vertebrate Predator project (Project /025) work on two still-injured species, sea otters and harlequin ducks. [Note: Funding includes \$128,700 for Alaska SeaLife Center bench fees.]

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02441	Harbor Seal Recovery: Effects of Diet on Lipid Metabolism and Health	R. Davis/Texas A&M	ADFG	Cont'd 4th yr. 4 yr. project	\$20.2	\$0.0	\$0.0	\$20.2

Project Abstract

This project will complete the analysis of samples that were taken by this project in earlier years. In addition, a final report and five manuscripts will be prepared. Analysis of the remaining samples is needed to resolve the temporal scale of changes in fatty acid composition under different diets, and will allow better interpretation of field data for wild harbor seals.

Chief Scientist's Recommendation

The Trustee Council's primary interest in funding this project has been to understand the dynamics of fatty acid profiles in harbor seals with different diets and changes in those diets. This project was to close out in FY 01 but the investigator has proposed additional analyses. In reviewing the Detailed Project Description, it appears that analysis of additional samples for fatty acid profiles will help obtain project objectives. Fund revised proposal, which focuses on fatty acids.

Trustee Council Action

Fund closeout of this project (completion of fatty acid data analysis and final report and manuscript preparation). This study, which is investigating the effect of diet on lipid metabolism and health in harbor seals, received closeout funds in FY 01. A small amount of additional funds is needed in FY 02 to complete data analysis and prepare the final report. Five manuscripts will also be prepared.

02455	GEM Data System	Restoration Office	ALL	Cont'd 2nd yr.	\$105.0	\$0.0		\$105.0
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Project Abstract

This project will continue work on the data system for GEM by hiring a data system manager to provide the leadership necessary for developing this essential part of the GEM program.

Chief Scientist's Recommendation

Proposal not yet available for review. Data management will be a critical component of GEM.

Trustee Council Action

Fund contingent on preparation and review of a Detailed Project Description and budget. This project will provide funding for a GEM data manager. The cost shown above is an estimate.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02462-CLO	Effects of Disease on Pacific Herring Population Recovery in Prince William Sound	G. Marty/Univ. of California, Davis	ADFG	Cont'd 4th yr. 4 yr. project	\$77.4	\$0.0	\$0.0	\$77.4

Project Abstract

The Pacific herring population of Prince William Sound has not recovered from severe population decline in 1993. The Alaska Department of Fish and Game now predicts that fisheries closed since 1999 will not open for several years. Long-term systematic disease monitoring and research since 1994 has shown a clear relationship between disease prevalence and population change, and this information significantly improves the ability to forecast population change. Because of the importance of Pacific herring in the Prince William Sound ecosystem, and the importance of this project to marine fisheries worldwide, an additional year of disease study is proposed to ensure seamless flow of data from this project to GEM.

Chief Scientist's Recommendation

Lack of recovery of Pacific herring has resulted in lost services for commercial fisheries and lost resources for subsistence use. The proposed study through 2002 will provide nine years of pathogen prevalence and disease information, making this the most comprehensive study ever conducted on a wild fish population. Following this population through a full cycle estimated to be 16-20 years would be optimal to understand how pathogen presence, disease and population size are linked. However, funding constraints and other restoration and GEM priorities preclude a commitment of such duration. Furthermore, other components associated with ecosystem health must also be included in the analysis (e.g., food availability). Manifestation of disease and potential population impacts are determined by environmental factors, not just pathogen presence. Fund for FY 02 only.

Trustee Council Action

Fund closeout of this project, including preparation of a final report. This project is designed to determine whether disease continues to limit recovery of the Prince William Sound herring population. The herring population biomass in the sound is at the lowest level ever recorded. A substantial grant from the National Science Foundation, up for renewal this year (new project dates would be February 2002 through January 2007), has enabled the investigators to perform complementary analyses and population modeling.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02476	Effects of Oiled Incubation Substrate on Pink Salmon Reproduction	R. Heintz/NOAA	NOAA	Cont'd 4th yr. 5 yr. project	\$39.8	\$0.0	\$36.0	\$75.8

Project Abstract

Populations are maintained through successful reproduction; this project is designed to determine if exposure to oil impairs pink salmon reproduction. Examination of the ability of the parental generation (P1) to produce offspring (F1) is underway. The P1 was exposed when they incubated in 1998; the F1 incubated in clean water beginning in FY 01. After the F1 emerges in spring 2001, the fish will be marked and released. At the end of FY 02, the released fish will be recovered when they return as mature adults. At that time, the project will measure the ability of the F1 to produce viable offspring (F2). A diminished ability to produce the F2 generation represents a genetic effect transmitted to unexposed generations. Such an effect was demonstrated in similarly treated pink salmon in 1997, but corroborating data do not exist.

Chief Scientist's Recommendation

This continuing project will test whether all of the data pointing to multi-generational effects of PAH exposure from the spill on pink salmon can be experimentally corroborated. The investigators are well qualified and experienced, and if sufficient oil-exposed fish return to Little Port Walter the project should be successful in providing valuable information for assessment of injury. Fund.

Trustee Council Action

Fund contingent on submittal of overdue report (99347). This project is validating the effects of oil contamination on pink salmon, thus contributing to our understanding of the injury and recovery status of this injured species. Project closeout is scheduled for FY 03.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02479	Effects of Food Stress on Survival and Reproductive Performance of Seabirds	J. Piatt/USGS-BRD, A. Kitaysky/Univ. of Washington	DOI	Cont'd 4th yr. 4 yr. project	\$55.0	\$0.0	\$0.0	\$55.0

Project Abstract

Traditional field methods of assessing effects of fluctuations in food supply on the survival and reproductive performance of seabirds may give equivocal results. This project will apply an additional tool--the measure of stress hormones in free-ranging seabirds. Food stress can be quantified by measuring base levels of stress hormones such as corticosterone in the blood of seabirds, or the rise in blood levels of corticosterone in response to a standardized stressor--capture, handling and restraint. These techniques will be applied to seabirds breeding in lower Cook Inlet and captive birds will be used for controlled experiments. This project provides a unique opportunity for a concurrent field and captive study of stress in seabirds.

Chief Scientist's Recommendation

This proposal is for funding to synthesize and publish the results of three prior years of work on stress hormones in seabirds. The results of this work are relevant to interpreting the recovery status of murre and other seabirds and also, potentially, for design of a GEM monitoring protocol. The revised proposal reduces the number of manuscripts to be prepared from eight to six. Fund contingent on submission of overdue reports and manuscripts.

Trustee Council Action

Fund revised closeout proposal, which reduces the number of manuscripts as directed by the Chief Scientist, contingent on submittal of overdue reports (99163/APEX chapter and 00501/seabird monitoring protocols) and manuscripts (seasonal elevation of corticosterone and seasonal dynamics of corticosterone, both funded under Project 00479). This project is exploring the use of corticosterone, a biochemical indicator of stress, as a tool to monitor seabird populations. This work is also relevant to interpreting the recovery status of seabirds and possibly to design of a monitoring protocol for GEM.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02492	Were Pink Salmon Embryo Studies in Prince William Sound Biased?	J. Thedinga/NOAA	NOAA	Cont'd 2nd yr. 2 yr. project	\$24.0	\$0.0	\$0.0	\$24.0

Project Abstract

Effects of the oil spill on wild pink salmon embryo survival in Prince William Sound are disputed among government- and industry-sponsored researchers. Exxon contends that the government's conclusions that reduced embryo viability in oiled streams was caused by persistent oil contamination were biased because sampling times were earlier in oiled streams than in reference streams. Experimental studies to determine the ability to discriminate eggs killed by sampling (shock mortality) and previously dead eggs were conducted to help ascertain if estimates of embryo survival in the sound were accurate or biased. Preliminary results indicate that shock resistance of eggs increased in a sigmoidal fashion from the end of September to mid-November and that the timing of egg examination after being pumped from a stream is critical in differentiating shocked eggs from previously dead eggs. By removing eggs pumped from stream gravel soon after sampling, shocked eggs were easily discernible and could easily be separated from previously dead eggs. These results suggest that further examination of procedures used for egg sampling in the sound following the oil spill would not help clarify the controversy over potential biased estimates of egg survival.

Chief Scientist's Recommendation

This study addresses some crucial questions of potential bias in evaluation of pink salmon embryo mortality in field samples collected 1989-94. This study has apparently resolved the time course of egg opacity after shocking, and is addressing potential observer bias in evaluating embryo mortality. Publishing the results of these studies as soon as possible is crucially important to understanding injury to pink salmon. Fund closeout as proposed.

Trustee Council Action

Fund closeout of this project (final report and two manuscripts). Exxon contends that the governments' conclusion that reduced embryo viability in oiled streams was caused by persistent oil contamination were biased due to sampling timing. In FY 01, the Trustee Council initiated this study to determine if estimates of pink salmon embryo survival following the oil spill were accurate. Based on the preliminary results, the claims advanced by Exxon appear to be invalid and experimental conditions do not permit further investigation. The principal investigator requested funds for closeout only.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02514	Lower Cook Inlet Waste Management Plan Implementation Phase 1	T. Turner/ADEC	ADEC	Cont'd 2nd yr.	\$47.9	\$0.0		\$47.9

Project Abstract

This project will promote recovery of injured resources and protect and enhance environmental quality in the lower Cook Inlet communities of Nanwalek, Port Graham, and Seldovia. In FY 99 (Project 99514), the Trustee Council funded development of a plan for a waste management program that identifies solutions to these three communities' waste management problems. The component of the plan proposed for EVOS funding relates primarily to used oil and household hazardous waste. In FY 02, this project will undertake the first phase of plan implementation, which will include site visits, training, and follow-up assistance visits by the Alaska Department of Environmental Conservation, in conjunction with the Kenai Peninsula Borough and the Chugach Regional Resources Commission, in regard to existing waste management equipment and procedures. Phase I will also include recommendations to the Council on any additional equipment needs, facility needs, and follow-up for possible funding later in FY 02.

Chief Scientist's Recommendation

This project is the necessary prelude to implementation of the Lower Cook Inlet Waste Management Plan. The implementation of this plan should reduce the amount of waste oil and other hazardous substances that could otherwise reach the marine environment. Fund.

Trustee Council Action

Fund Phase I (\$47,900), which consists of site visits, training, and follow-up assistance by the Alaska Department of Environmental Conservation, in conjunction with the Kenai Peninsula Borough and the Chugach Regional Resources Commission, in regard to existing waste management equipment and procedures in the lower Cook Inlet communities of Seldovia, Nanwalek, and Port Graham. Phase I will also include recommendations to the Trustee Council on any additional equipment needs, facility needs, and follow-up for possible funding later in FY 02. Recommendations are expected by February 28, 2002; a Phase II request will likely be brought to the Council for consideration in early spring 2002. This project, modeled after similar projects funded by the Council in Prince William Sound (Project 96115) and Kodiak (Project 99304), is designed to reduce marine wastes in an effort to promote recovery of injured resources and protect and enhance environmental quality in lower Cook Inlet. [Note: This project will be funded outside of the regular FY 02 work plan of research, monitoring, and general restoration projects.]

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02535	EVOS Trustee Council Restoration Program Final Report	J. Hunt/EVOS Restoration Office	ALL	Cont'd 2nd yr. 2 yr. project	\$52.4	\$0.0	\$0.0	\$52.4

Project Abstract

This project will provide a final report for the activities of the Trustee Council, starting with the earliest damage assessment efforts and ending with the FY 02 Work Plan and disbursements of the final payment from Exxon. It will also include a complete history of the litigation leading to the civil settlement, which funds the Council. This project will increase public awareness and understanding of EVOS restoration activities, policies, and procedures. It will provide agencies and groups (facing a similar trustee situation) with a detailed history of the *Exxon Valdez* oil spill restoration process, including highlights and pitfalls, so that others can benefit from lessons learned in the groundbreaking EVOS effort. This published history will include references and an index.

Chief Scientist's Recommendation

This is the second year of a project to report on the decade-long restoration program following settlement of the governments' claims against Exxon. This project will help bring closure to the EVOS experience in the minds of the public, and in that sense it helps restore lost passive uses. Further, the EVOS program and process are unique in terms of the nation's environmental history and should be documented both for history's sake and also in the event that similar situations arise in the future. The principal investigator is excellent. Fund.

Trustee Council Action

Fund. This project is designed to increase public awareness and understanding of EVOS restoration activities, policies, and procedures through publication of a report that comprehensively describes the Trustee Council's activities from the time of the spill through FY 02, when the final payment from Exxon will be spent. The author of the report is Joe Hunt, the Council's former Communications Coordinator. The target date for publication is September 2002.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02538	Evaluation of Two Methods to Discriminate Pacific Herring Stocks along the Northern Gulf of Alaska	T. Otis/ADFG, R. Heintz/NOAA	NOAA & ADFG	Cont'd 2nd yr. 2 yr. project	\$80.4	\$0.0	\$0.0	\$80.4

Project Abstract

This project will perform a comparative investigation of two promising stock identification techniques for Pacific herring--elemental analysis of otoliths and fatty acid profile analysis of select soft tissues. Limited samples from Sitka Sound, Prince William Sound, Kamishak Bay, Kodiak Island, and Togiak will be collected and analyzed to determine if stock differences are detectable by each procedure, and at what scale. Successful results from this pilot study should be followed up with future evaluations of the temporal and structural (i.e., sex, age, maturity) stability of these biomarkers.

Chief Scientist's Recommendation

The goal of this project, to explore potential geographic composition of spawning aggregations, addresses an important question for management of herring in the oil spill area. The project is on track as reviewed in FY 01. Collections of herring in the fall should be made to obtain additional material for stock identification using the experimental techniques of this project. Investigators are encouraged to compile and use environmental data from the areas where the herring collections are being made in order to better interpret the results of the elemental analysis of otoliths. Investigators are also encouraged to at least double the amount of otoliths and heart tissue necessary to meet project-specified sampling objectives in order to archive for possible future analysis. Fund, with funding for analysis of Fall 2001 samples contingent on favorable review of preliminary results from analysis of Spring 2001 samples.

Trustee Council Action

Fund contingent on submittal of overdue report (99347), with funding for analysis of Fall 2001 samples also contingent on favorable review of preliminary results from analysis of Spring 2001 samples (expected February 2002). The ability to determine the stock of origin for herring sampled during field investigations will allow increased understanding of the distribution and mixing of northwest Gulf of Alaska herring stocks and assist in the identification of important habitats and rearing areas for individual populations.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02543	Evaluation of Oil Remaining in the Intertidal from the <i>Exxon Valdez</i> Oil Spill	J. Short/NOAA	NOAA	Cont'd 2nd yr. 2 yr. project	\$113.1	\$0.0	\$0.0	\$113.1

Project Abstract

This project will assess the amount of oil remaining from the oil spill on shorelines within Prince William Sound in FY 01. During Summer 2001, a stratified random sample of shoreline was intensively sampled for surface and subsurface oil to estimate length of oiled shoreline, area and volume of oiled sediment, and volume of oil. Approximately 8 km were sampled by digging about 8,000 pits to discover and quantify subsurface oil. In FY 02, the project will perform data and chemical analysis, and prepare a final report and journal publications.

Chief Scientist's Recommendation

The public and the Trustee Council want to know as accurately as can be estimated the amount of oil that remains in Prince William Sound. This project will provide the answer in as rigorous a manner as possible. Fund.

Trustee Council Action

Fund. This project is assessing the surface area and volume of shoreline in Prince William Sound still contaminated with *Exxon Valdez* oil.

02550	Alaska Resources Library and Information Services (ARLIS)	All Trustee Council Agencies	ALL	Cont'd	\$93.4	\$0.0		\$93.4
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Project Abstract

This project is the Trustee Council's contribution to the Alaska Resources Library and Information Services (ARLIS). ARLIS serves as a central access point for information generated through the restoration process. In addition, ARLIS acts as the public repository for reports and other materials generated as a result of the cleanup, damage assessment, and restoration efforts following the spill.

Chief Scientist's Recommendation

The Alaska Resources Library and Information Services (ARLIS) performs an important service by providing world-wide access to what are now voluminous materials generated from the whole EVOS experience--spill response, damage assessment, restoration, etc. The availability of these materials advances the full range of recovery objectives, and requests for EVOS materials at ARLIS are significant, about 15% of all library uses. This project should be funded through FY 02. The more difficult question is how ARLIS relates to GEM and, over the longer term, what funding, if any, is appropriate. Fund.

Trustee Council Action

Fund continuation of one librarian at the Alaska Resources Library and Information Services (ARLIS). Trustee Council contributions in FY 03 and beyond may be reduced further as the transition to GEM is completed. ARLIS provides an important service for documents and other materials produced through the damage assessment and restoration processes. The Council's original funding commitment to ARLIS was through FY 01 only and how ARLIS might relate to the GEM program in FY 03 and beyond is not clear at this time.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02552-BAA	Exchange Between Prince William Sound and the Gulf of Alaska	S. Vaughan/PWSSC	NOAA	Cont'd 3rd yr. 3 yr. project	\$102.5	\$0.0	\$0.0	\$102.5

Project Abstract

One of the least understood physical processes that influence the biological components of Prince William Sound is the exchange between the northern Gulf of Alaska and Prince William Sound. This project will document the interannual variability in water mass exchange between the sound and the adjacent northern Gulf of Alaska at Hinchinbrook Entrance, and identify mechanisms governing this exchange. The project will deploy an upward looking ADCP (Acoustic Doppler Current Profiler) mooring in Hinchinbrook Entrance to create time series of velocities spanning three years. The mooring will be equipped with a CTD (conductivity temperature versus depth) to create a time series of deep temperature and salinity. To identify the dominant factors that govern Prince William Sound/Gulf of Alaska exchange, the mooring velocity and deep temperature/salinity time series will be combined with meteorological and physical data collected under other research programs already in progress.

Chief Scientist's Recommendation

Fixed instrumentation in Hinchinbrook Entrance is key to understanding the circulation and productivity of Prince William Sound and the Alaska Coastal Current. A workshop was held in November 2001 to address potential oceanographic data needs of GEM. One of the goals of the workshop was to determine the potential future role that the mooring in Hinchinbrook Entrance, funded through this project, might play in better understanding long-term changes in regional oceanography and changes in biological productivity in Prince William Sound. The mooring was redeployed in late October 2001 in the current configuration. New configurations and instrumentation may increase the amount of data available from this mooring in the future. Fund contingent on an agreement on how data from the mooring will be made publicly available in a timely and complete manner.

Trustee Council Action

Fund contingent on submittal and satisfactory review of a detailed explanation of how the principal investigator will make the data collected under this project publicly available and on what timeframe. This project has continued data gathering and analysis from the Hinchinbrook Entrance buoy that was begun under SEA (Sound Ecosystem Assessment, Project /320). A buoy at Hinchinbrook Entrance is expected to be an important component of GEM.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02556	Mapping Marine Habitats: The First Step in a Spatially Nested Monitoring Program	C. Schoch/Kachemak Bay NERR	ADFG	New 1st yr. 1 yr. project	\$0.0	\$50.0	\$0.0	\$0.0

Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

Groups, individuals, and programs as diverse as natural resource agencies, local governments, researchers, conservation advocates in Cook Inlet and Kachemak Bay, and GEM can benefit from a comprehensive, high resolution database of shoreline and nearshore habitats, and from information on the physical changes seen through time. At present, no such detailed database or monitoring program exists within the Gulf of Alaska. This project will use a method adopted along the US west coast to gather such habitat information in a cost-effective yet detailed manner. The method relies on a nested hierarchical nearshore classification based on the physics of the environment to select replicate shore sites for monitoring algal and invertebrate diversity.

The GIS database of physical habitat features for intertidal and subtidal lands in Kachemak Bay could be a valuable baseline, and learning how to measure nearshore habitats in Kachemak Bay could provide a good starting point for intertidal monitoring for GEM. However, this project is premature considering the current status of GEM development. A workshop to develop options for long-term monitoring of the nearshore/intertidal under GEM is scheduled for January 2002 (Project 02395), and the proposer of this project will participate in that workshop. Defer decision on whether or not to fund this project until after the workshop.

Continue to defer decision on funding this project until the nearshore/intertidal workshop funded under Project 02395 has been held (scheduled for January 2002). The workshop is designed to develop options for long-term monitoring of the nearshore/intertidal under GEM. This project would build a spatially comprehensive database of the geomorphology and physical attributes of subtidal and intertidal habitats in Kachemak Bay and quantify the physical attributes that force spatial variation in diversity of fish, invertebrate, and algal populations.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02558	Harbor Seal Recovery: Application of New Technologies for Monitoring Health	S. Atkinson/UAF	ADFG	Cont'd 2nd yr. 3 yr. project	\$292.3	\$0.0		\$292.3

Project Abstract

This project will investigate the potential for new technologies to assess and monitor the endocrine and immune systems as diagnostic measures of the health of harbor seals. Analysis of thyroxine (T₄), triiodothyronine (T₃), and cortisol (primary metabolic and gluconeogenic hormones), and measurement of immunoglobulins (IgG, IgM, and IgA) and the body burden of organochlorine contaminants will provide an assessment of both permanently captive seals as well as seals that are brought into the Alaska SeaLife Center for rehabilitation. Once the profiles of healthy seals and those failing to thrive in their natural environment are assessed, these techniques will be evaluated for routine monitoring of free-ranging seals in an effort to restore this species.

Chief Scientist's Recommendation

This project is documenting changes in the immune and endocrine markers in the blood of captive harbor seals, and will use rehabilitating seals to determine if such measures have a relationship to contaminants. The project is on track to meet its objectives: assays have been validated, monoclonal antibodies for harbor seal immunoglobulins are being developed, and blood samples have been analyzed for thyroid hormones. Fund.

Trustee Council Action

Fund. This project is employing new technologies at the Alaska SeaLife Center to assess and monitor the health of harbor seals. [Note: Funding includes \$163,900 for Alaska SeaLife Center bench fees.]

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02561	Evaluating the Feasibility of Developing a Community- Based Forage Fish Sampling Project for GEM	D. Roseneau/USFWS	DOI	New 1st yr. 2 yr. project	\$54.3	\$0.0	\$11.6	\$65.9

Project Abstract

This project is based on the recently completed five-year pilot study, conducted as part of APEX (Alaska Predator Ecosystem Experiment, Project /163), that used stomach contents from sport-caught halibut to sample forage fish populations. The project will monitor long-term trends in forage fish populations in several regions of the spill area during GEM. The project will provide information to help assess and understand the types and levels of community participation that may be available for long-term forage fish monitoring studies. Also, if project results are favorable, the information can be used to begin designing cost-effective, community-based forage fish monitoring studies to track long-term trends in capelin and sand lance stocks in the Kachemak Bay/lower Cook Inlet, Resurrection Bay, Kodiak Island, and Prince William Sound regions.

Chief Scientist's Recommendation

This is an innovative approach to a difficult problem of assessing forage fish abundance over large temporal and spatial scales. The work would also make a strong contribution to understanding the feasibility of community based sampling programs, an important part of GEM transition. The principal investigator has an excellent record with the Trustee Council. Fund.

Trustee Council Action

Fund. This project, which will visit 11 spill-area communities to explore involving local residents in long-term forage fish monitoring studies, builds on work successfully begun under APEX (Alaska Predator Ecosystem Experiment, Project /163). It will contribute to understanding the feasibility of community-based sampling programs in general, and therefore is an important part of GEM transition. It should be noted that the Council's interest in this project in FY 02 is not in the particular data that might be gathered relevant to forage fish, but in the techniques and strategies that might be developed in regard to designing a community involvement component for GEM.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02574-BAA	Assessment of Bivalve Recovery on Treated Mixed-Soft Beaches in Prince William Sound	D. Lees/Littoral Eco.& Environ. Services	NOAA	New 1st yr. 2 yr. project	\$94.8	\$0.0	\$35.3	\$130.1

Project Abstract

Studies from 1989 through 1997 suggest that bivalve assemblages on beaches in Prince William Sound with high-pressure hot-water washing remain severely damaged in terms of species composition and function. This project will assess the generality of this apparent injury to these assemblages. A finding that our conclusions are accurate will indicate that a considerable proportion of mixed-soft beaches in treated areas of the sound remains extremely disturbed and that these beaches are functionally impaired in terms of their ability to support foraging by damaged nearshore vertebrate predators such as sea otters and harlequin ducks. The study will also provide insight into the need for remediation of beaches to restore biodiversity and function on these assemblages.

Chief Scientist's Recommendation

This project will extend sampling initiated under the National Oceanic and Atmospheric Administration's HAZMAT studies of the intertidal zone bivalves carried out through 1997 and would allow sound-wide inferences to be made. Through 1997, oil spill clean-up effects were being manifested as a depression of bivalves that inhabit the fine sediments washed off the beaches during the cleanup operations. The proposer has submitted a revised proposal that addresses earlier concerns about the treatment history of beaches to be studied and the eventual publication of the results of this work. Fund revised proposal.

Trustee Council Action

Fund. This project will extend sampling initiated under the National Oceanic and Atmospheric Administration's HAZMAT program to document continuing effects of shoreline cleanup on populations of important bivalves, thus allowing the results to be generalized over a larger geographic range. This will be a worthwhile endeavor.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02584	Evaluation of Airborne Remote Sensing Tools for GEM Monitoring	E. Brown/UAF, J. Churnside/NOAA	ADFG	New 1st yr. 3 yr. project	\$78.6	\$0.0		\$78.6

Project Abstract

This project will evaluate airborne remote sensing tools for GEM monitoring, including a biological/ecological interpretation of the data collected. The instrument package consists of (a) a pulsed LIDAR (Light Detection and Ranging) to map subsurface biological features day to a maximum of 50 m, (b) an infrared radiometer to map SST (sea surface temperature) day (similar to AVHRR, Advanced Very High Resolution Radiometer), (c) two three-chip digital video systems to map ocean color (chlorophyll), birds, mammals, surface fish schools, and ocean frontal structure, and (d) an infrared digital video to map birds and mammals at night. The project will use shipboard and buoy data for validation and interpretation of remote sensed data.

Chief Scientist's Recommendation

The development of monitoring tools using LIDAR (Light Detection and Ranging) or other remote sensing techniques could be very valuable for GEM. These techniques could allow synoptic mapping of physical and biological phenomenon in the upper 50 meters of the water column over large areas of the northern Gulf of Alaska. The project's objectives are ambitious and broad-ranging, but first year costs are modest. An initial investment in FY 02 is recommended with reevaluation of the project for FY 03 funding when clarification of potentially large out-year costs can be better evaluated, participation by other agencies will be better known, and proposer Brown's overdue report from another project has been submitted. Fund FY 02 only.

Trustee Council Action

Fund contingent on (a) receipt of a description of the deployment procedure intended to insure against loss of data and (b) submittal of overdue report (Project 99375). As recommended by the Chief Scientist, no commitment to FY 03 funding is being made at this time. This project will explore airborne remote sensing instrumentation as a monitoring tool for GEM. The *FY 02 Invitation* invited proposals to develop cost-effective data acquisition technologies that could be useful to GEM.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02585	Lingering Oil: Bioavailability and Effects to Prey and Predators	J. Rice, J. Short/NOAA; J. Bodkin, B. Ballachey/USGS; D. Esler/Simon Fraser Univ.	NOAA	New 1st yr. 2 yr. project	\$296.4	\$0.0	\$30.0	\$326.4

Project Abstract

About 20 acres of contaminated beach were found in 2001 surveys of western Prince William Sound conducted under Project 01543. Sea otters and harlequin ducks have not recovered, raising concerns that continued exposure may be affecting their survival. Biochemical assays and mortality patterns are consistent with continuing oil exposures, but linkages between oil persistence studies and impact studies have not been attempted to date. This project will attempt to identify a greater degree of linkage between oil persistence, exposure, and effects by choosing a common set of sites at which to assess oil persistence and biological effects on sea otters and harlequin ducks. The emphasis will be on bioavailability and impact to sea otters and harlequin ducks, but some effort will be expended on bioavailability and exposure of prey species living in oil patches. The National Ocean and Atmospheric Administration's Auke Bay Lab will lead the studies of oil bioavailability and impacts to prey species. The US Geological Survey/US Department of Interior will lead studies directly on sea otters and harlequin ducks.

Chief Scientist's Recommendation

Following a workshop held in early October, where results from Project 01543/Evaluation of Oil Remaining in the Intertidal were presented and information gaps were identified, this project was developed to attempt to identify a greater degree of linkage between oil persistence, exposure, and effects. The project integrates studies of sea otters and harlequin ducks with continued assessment of oil persistence. The aims of the expanded project are to determine if the signs of continued oil exposure in these species are linked to the oil remaining in the intertidal sediments. Fund.

Trustee Council Action

Fund. This project, which integrates studies of sea otters and harlequin ducks with continued assessment of oil persistence, is the product of a workshop convened by the Chief Scientist in October 2001 to review results from Project 01543/Evaluation of Oil Remaining in the Intertidal and to identify information gaps. The project's objective is to determine if the signs of continued oil exposure in sea otters and harlequin ducks are linked to the oil remaining in the intertidal sediments.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02593	River Otters and Fishes in the Nearshore Environment: A Synthesis	S. Jewett/UAF, M. Ben-David/U.Wyo., G. Blundell/UAF	ADFG	New 1st yr. 1 yr. project	\$32.4	\$0.0	\$0.0	\$32.4

Project Abstract

This project will integrate data collected on river otters and fishes in Prince William Sound through efforts of the NVP/025 (Nearshore Vertebrate Predator), APEX/163 (Alaska Predator Ecosystem Experiment), and SEA/320 (Sound Ecosystem Assessment) projects. Social organization and population dynamics of river otters, specialized fish-predators, are dependent on abundance and availability of fishes. This project will test the dependence of sociality in river otters on the availability of schooling fishes and evaluate the relation between the spatial and temporal distribution of fishes and those of river otter groups.

Chief Scientist's Recommendation

This is an innovative and thoughtful proposal by investigators with a proven track record of studying this species and system. The proposal is well conceived and well written. This project could possibly provide an alternative explanation for phenomena previously observed and attributed to the spill, as well as make a contribution towards understanding how the environment affects behavior of river otters. Fund revised proposal, which focuses on the manuscript on river otter sociality only.

Trustee Council Action

Fund revised proposal, which reduces the scope to manuscript #1 only (forage fishes and river otter sociality). This project will draw on data collected through earlier Trustee Council funded projects (025/Nearshore Vertebrate Predator, 163/Alaska Predator Ecosystem Experiment, 320/Sound Ecosystem Assessment, 348/Responses of River Otters to Oil Contamination).

02600	Synthesis of the Ecological Findings from the EVOS Damage Assessment and Restoration Programs, 1989-2001	R. Spies/EVOS Chief Scientist, ADNR et al		New 1st yr. 3 yr. project	\$133.8	\$0.0	\$212.0	\$345.8
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Project Abstract

This project will synthesize the significant results from 12 years of post-spill study in the EVOS damage assessment and restoration programs as they relate to anthropogenic and natural forcing factors influencing the northern Gulf of Alaska. The results of the synthesis will be incorporated into a series of interrelated manuscripts that will either be submitted to a journal for publication as a whole volume, or to a publisher as a book. This effort will be one of the major products of the EVOS restoration program and help set the foundation for GEM. [NOTE: This project has also requested \$184,800 for FY 04.]

Chief Scientist's Recommendation

Not reviewed (Chief Scientist is proposer).

Trustee Council Action

Fund. This project will integrate what has been learned from more than a decade's worth of science following the oil spill. Such a synthesis will fulfill at least two purposes: (a) inform the public about the EVOS legacy in a scientifically rigorous yet readable volume and (b) provide a foundation for GEM.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02603	Implementation of an Ocean Circulation Model: A Transition from SEA to GEM	J. Wang/UAF	ADFG	New 1st yr. 1 yr. project	\$80.0	\$0.0	\$0.0	\$80.0

Project Abstract

This project will establish a 3-D ocean circulation model in the Gulf of Alaska to lay down a foundation for GEM in order to couple this model to a hydrological model and a biological model. This model will cover the entire gulf, including Prince William Sound and Cook Inlet. The horizontal resolution of this model is 4'x2' minutes (about 3.7km at 60"N). This model will be forced by tides, the Alaska Current inflow/outflow, freshwater discharge, and wind stress derived from the National Center for Environmental Prediction.

Chief Scientist's Recommendation

This project was considered at a workshop held in November 2001 to address potential oceanographic data needs of GEM. The project will continue to develop and refine 3-D circulation models for Prince William Sound and the Gulf of Alaska. Maintaining a circulation model within the University of Alaska system, and supporting a group of modelers who are familiar with the important biological phenomena in the gulf and have a record of working with biologists, is very important to the future of GEM. The model proposed for the gulf would complement other efforts underway and provide GEM access to an important capability for predicting biological phenomenon. Fund.

Trustee Council Action

Fund. The earlier questions raised by the reviewers (related to other possible modeling options) were addressed at a modeling workshop convened by the Chief Scientist in November 2001. This project will expand the Prince William Sound circulation model--developed under SEA (Sound Ecosystem Assessment, Project /320) and continued under Project 01389/3-D Ocean State Simulations--to the Gulf of Alaska.

02608	Permanent Archiving of Specimens Collected in Nearshore Habitats	N. Foster/UAF	ADFG	New 1st yr. 1 yr. project	\$61.6	\$0.0	\$0.0	\$61.6
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Project Abstract

This project will support acquisition and archiving of marine invertebrate specimens collected as part of EVOS assessment studies in Prince William Sound between 1990 and 1995. Specimens represent a time series of samples from eelgrass and kelp forest habitats. As a result of these efforts, there will be an improved set of baseline data for the marine biota of Prince William Sound.

Chief Scientist's Recommendation

Archiving these specimens will make them accessible to the scientific community and others, which might be useful for GEM. The nearshore/subtidal specimens are of a higher priority. Fund revised proposal, which limits activity to nearshore/subtidal specimens only.

Trustee Council Action

Fund revised proposal, which limits the project's scope to the archiving of nearshore/subtidal specimens only and clarifies the University's commitment to long-term maintenance of the specimens. This project addresses a worthwhile endeavor, which is archiving specimens from Project CH1A (Coastal Habitat Damage Assessment) at the University of Alaska Museum. The archives could serve an important reference function for GEM as well as provide a useful public service.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02610	Kodiak Archipelago Youth Area Watch	T. Schneider/Kodiak Island Borough School District	ADFG	Cont'd 3rd yr.	\$61.8	\$0.0		\$61.8

Project Abstract

This project will engage students in projects with goals aligned with the general restoration efforts of the Trustee Council. Students and site coordinators will conduct interviews with local experts and document traditional ecological knowledge, publishing it in a Kodiak School District oral history magazine. Participation of Youth Area Watch adults and students in the annual Academy of Elders/Science Camp will be strongly encouraged. Such participation will serve as another avenue for more tribal members to learn about restoration efforts, scientific monitoring techniques, and occupations related to such work. The value and implications of traditional ecological knowledge will be strongly emphasized throughout the implementation of the project.

Chief Scientist's Recommendation

This is a popular and successful program to involve the youth of Kodiak Island in the restoration program. The project is in its third and final year, although funding is requested for FY 03. The success of students from this program in the regional Kodiak Science Fair is admirable and attests to the value of this program. Fund revised proposal, which reduces the Trustee Council contribution to the project.

Trustee Council Action

Fund revised proposal, which reduces the amount of the Trustee Council contribution and clarifies in which EVOS projects the students will participate in FY 02. As with the Prince William Sound Youth Area Watch (Project \210), on which this project is modeled, Council funding is but a contribution to the program and strong financial support from the school district and/or other funding sources is required. This project is designed to involve local youth in restoration projects. FY 02 was expected to be the final year of Council support, but this might be the type of community effort that is appropriate under GEM.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02612	Detecting and Understanding Marine-Terrestrial Linkages in the Kenai River Watershed	W. Hauser/ADFG	ADFG	New 1st yr. 1 yr. project	\$44.6	\$0.0	\$0.0	\$44.6

Project Abstract

This project will provide matching funds for a coordinator to serve a multidisciplinary team of agency-supported scientists that is designing a study of marine and terrestrial nutrient cycling in the Kenai River watershed. The oil spill curtailed commercial fishing on the river in 1989, causing changes in productivities of sockeye salmon and other species, in addition to allowing a massive input of marine nutrients borne by the unharvested salmon. The watershed is also at some risk from anthropogenic activities including habitat degradation, increased utilization and invasive species. Studies on watersheds of the Pacific Northwest suggest there may be cascading impacts when marine derived nutrients normally supplied by salmon carcasses are diverted from an ecosystem. When nutrients normally supplied by salmon are withdrawn, productivity of the entire watershed is expected to be diminished.

Chief Scientist's Recommendation

This project will develop the basis for monitoring inputs of marine nutrients in watersheds adjacent to the Gulf of Alaska. Therefore, it should aid future GEM activities. The project has substantial scientific potential, as well as scientific support and financial participation by concerned agencies and organizations in the region. This is a community based monitoring effort with substantial community cost sharing. Fund revised proposal, which provides a more thorough explanation of the scientific framework and rationale for the project in relation to GEM.

Trustee Council Action

Fund revised proposal, which provides a more thorough explanation of the scientific basis for the project and presents the scientific framework in the context of the GEM conceptual model. This project, which is the outgrowth of a multidisciplinary discussion group on the Kenai River watershed, is designed to increase understanding of food-web dynamics in the watershed and the role of marine-derived nutrients in the ecosystem.

02614	Monitoring Program for Near-Surface Temperature, Salinity, and Fluorescence in the Northern Pacific Ocean	S. Okkonen/UAF	ADFG	New 1st yr. 2 yr. project	\$38.2	\$0.0	\$17.1	\$55.3
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Project Abstract

This project will use a thermosalinograph and fluorometer, to be installed on a crude oil tanker, to acquire continuous, long-term measurements of the near-surface temperature, salinity, and fluorescence fields along the tanker route between Valdez, Alaska and Long Beach, California.

Chief Scientist's Recommendation

This is an innovative proposal to determine the feasibility of taking frequent surface ocean measurements of temperature, salinity, and fluorescence on oil tankers traveling from Alaska to California. This would provide a stream of data on ocean conditions in Alaskan waters that would be extremely useful to GEM and supplement data taken by satellites and from fixed buoys on the GAK1 line and data from NE GLOBEC (Global Climate Change) transects. Fund.

Trustee Council Action

Fund contingent on receipt of a description of the deployment procedure intended to insure against loss of data. This project will install a thermosalinograph and fluorometer on a crude oil tanker traveling between Valdez and Long Beach. Vessels of opportunity such as this are a cost-effective method that may be useful to GEM, and proposals to place oceanographic instrumentation packages on ships of opportunity were specifically invited in the *FY 02 Invitation*. The data collected by this project on ocean conditions in Alaskan waters will be extremely useful to GEM.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02622	Digital Maps from Existing Seasonal Environmental Sensitive Area Maps: Cook Inlet/ Kenai Peninsula	J. Whitney/NOAA	NOAA	New 1st yr. 1 yr. project	\$36.6	\$0.0	\$0.0	\$36.6

Project Abstract

A series of national standardized digital map products will be produced from the existing seasonal Environmental Sensitivity Index (ESI) maps for Cook Inlet/ Kenai Peninsula made by the National Oceanic and Atmospheric Administration (NOAA) in 1994. A four map seasonal series was originally developed for Cook Inlet by the NOAA Hazardous Materials Response and Assessment Division in the ArcInfo digital format with the output and distribution primarily being poster maps at a scale of 1:450,000. Since then, combined with greater demand for digital products, NOAA's digital ESI products have greatly expanded. This project will transform the existing Cook Inlet/Kenai Peninsula digital data into a four-tiered nationally standardized set of digital map products with the deliverable being 100 CDs. These will be the same products that were recently provided for Prince William Sound under Project 99368.

Chief Scientist's Recommendation

This project would transform the existing Cook Inlet/Kenai Peninsula digital data into a four-tiered nationally standardized set of digital map products with the deliverable being 100 CDs. A similar product was provided by the contractor for Prince William Sound under Project 99368/Prince William Sound Environmental Sensitivity Index (ESI) Maps. Fund lower priority.

Trustee Council Action

Fund. Satisfactory answers to the reviewers' questions have been provided (the completed maps will be posted on the World Wide Web and other reviewers, e.g., U.S. Forest Service and the Oil Spill Recovery Institute, will be invited to participate in the map review process). This project will convert the existing Cook Inlet Environmental Sensitivity Index (ESI) seasonal summary maps to the 1998 national standardized format (Full GIS, Desktop Mapping, Free ESI Viewer, and PDF ESI Navigator) in an effort to make the maps more accessible.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02624-BAA	A CPR-Based Plankton Survey Using Ships of Opportunity to Monitor the Gulf of Alaska	S. Batten/SAHFOS, D. Welch/DFOC	NOAA	New 1st yr. 1 yr. project	\$120.6	\$0.0	\$0.0	\$120.6

Project Abstract

This project presents the rationale for developing a plankton monitoring program for the Gulf of Alaska using ships of opportunity. Plankton are a critical link in the marine food chain whose dynamics are poorly understood, but respond rapidly and unambiguously to climate change and form the link between changes in the atmosphere and valuable upper trophic level populations, such as salmon, herring, shrimp, and groundfish. The proposal reviews the evidence that many of the most valuable marine resources in the Gulf of Alaska are strongly influenced by changes in ocean climate. Ships of opportunity are a cost effective platform for large scale monitoring and this project will build on recent experience gained with CPR (continuous plankton recorders) in the North Pacific to prepare for GEM.

Chief Scientist's Recommendation

This project is instrumental in establishing a long-term low cost ships-of-opportunity approach to long-term monitoring of biological and physical phenomena in the Gulf of Alaska. The large tanker vessels to be used in this project are not hindered by the weather, so continuous sampling is expected. CPR (continuous plankton recorders) has broad support from the scientific community, since this type of project can also be used to support bird and mammal data at low additional cost. Proof of concepts of acquiring physical and biological data from ships of opportunity will be very useful to planning GEM. Should concepts be proven, some level of long-term support should be considered. Fund.

Trustee Council Action

Fund. This project will fund continuation of a continuous plankton recorder (CPR) on an oil tanker traveling from Valdez to Long Beach and on a second vessel along a Vancouver, B.C. to Kamchatka monitoring line. The Valdez to Long Beach recorder was funded in FY 00 and FY 01 by the North Pacific Marine Research fund. Vessels of opportunity such as this are a cost-effective method that may be useful to GEM, and proposals to place oceanographic instrumentation packages on ships of opportunity were specifically invited in the *FY 02 Invitation*.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02630	Planning for GEM	Restoration Office	ALL	Cont'd 3rd yr. 3 yr. project	\$304.7	\$0.0	\$0.0	\$304.7

Project Abstract

This project will conclude planning for and begin initiation of the Trustee Council's vision for long-term monitoring and research in the Gulf of Alaska, the Gulf Ecosystem Monitoring and Research program (GEM). Planning and implementation during FY 02 will be based on the draft GEM Program Document until its review by the National Research Council (NRC) is complete. The document describes how a network of monitoring and research activities will be implemented over a five-year period starting in FY 03 using synthesis, research, modeling, and data management/information gathering. As directed by the Trustee Council, the GEM program is closely coordinated with, and complementary to, related large-scale marine science programs and organizations in the Gulf of Alaska and adjacent waters. In FY 02, this project will support the final review of the GEM Program Document by the NRC, develop the *FY 03 Invitation to Submit Proposals*, and continue development of the draft GEM Strategic Plan for Monitoring and Research.

Chief Scientist's Recommendation

Proposal not reviewed, but Detailed Project Description and budget have been coordinated with Chief Scientist.

Trustee Council Action

Fund. This project will continue the planning necessary to carry out the Trustee Council's decision to dedicate \$120 million of Restoration Reserve funds in support of long-term monitoring and research in the spill area and adjacent northern Gulf of Alaska. Activities in FY 02 include finalization of the GEM Program Document, further development of the monitoring and research plan, development of the first GEM invitation, work on a "State of the Gulf Report", and continued consultation and coordination with other marine research efforts.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02636-BAA	Management Applications: Commercial Fishing	K. Adams, R. Mullins/Cordova	NOAA	New 1st yr.	\$50.0	\$0.0		\$50.0

Project Abstract

The goal of securing and sustaining the recovery of the marine system is a first priority for the Trustee Council as well as for the spill-impacted region. The economies and the communities of the spill-impacted region are the natural partners for realizing this goal. In this regard, commercial fishing has the involvement, resources, and motivation--through long-term financial positions and committed financial risks--to be one of the most effective partners. This project will develop a plan and demonstrate that a partnership can accomplish significantly more toward our common goal than is possible through the same investments expended independently.

Chief Scientist's Recommendation

Building a bridge between the scientific community, which is describing and attempting to predict variation in biological production, and the fishing community, which is attempting to find a way to use this new information, is challenging. This project proposes to open a door by bringing together modelers, who have produced a circulation model with some predictive capability for plankton distribution within Prince William Sound, with fishermen from the sound. It is not entirely clear how this bridge can be built, but the project should begin to find useful ways for scientists and fishers to communicate. The proposal is very vague about what specifically is going to be done, and the modeling component is especially unclear. Several workshops and meetings, which should include invitations to a cross section of the fishing and fisheries management communities, would seem to be appropriate. Fund contingent on submission of a revised proposal with a clear work plan and concrete products.

Trustee Council Action

Fund contingent on submittal and approval of a revised proposal (Detailed Project Description and budget) that clarifies the project's objectives and cost (at a cost not to exceed \$50,000). In developing a revised proposal, the proposers should work closely with the commercial fishers on the Trustee Council's Public Advisory Group (T. Baker, D. Hull) and with Restoration Office staff. The focus of the project in FY 02 should be development of a fisheries management applications working group, to include area management biologists from the Alaska Department of Fish and Game, commercial fishers, Cordova District Fishermen United (CDFU), the Prince William Sound Aquaculture Corporation (PWSAC), the Native Village of Eyak, and others. The working group's effort in FY 02 should include a review of SEA (Sound Ecosystem Assessment, Project /320), APEX (Alaska Predator Ecosystem Experiment, Project /163), and other restoration projects. The EVOS program can benefit from the commercial fishing community's perspective on restoration results and interaction with fishers on how to incorporate the results into fisheries management practices. In addition, the project could form a foundation for working with Prince William Sound fishers as GEM develops.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02649	Reconstructing Sockeye Populations in the Gulf of Alaska over the Last Several Thousand Years	B. Finney/UAF	ADFG	New 1st yr. 2 yr. project	\$88.1	\$0.0	\$28.2	\$116.3

Project Abstract

This project will reconstruct the last 2,000 years of changes in sockeye salmon abundance in Eshamy Lake (Prince William Sound) and Upper Russian Lake (Kenai River watershed) by analyzing ¹⁵N in lake sediments. This new data will be synthesized with ongoing studies at Karluk Lake (Kodiak Island). The research question is: What is the normal variability in sockeye salmon populations in the Gulf of Alaska? This research will contribute to development of the GEM program by providing a historical perspective on present conditions and by developing new hypotheses about the climatic causes of population fluctuations in Gulf of Alaska salmon. Work at Delight and Desire lakes on the outer Kenai Peninsula coast will also be conducted, as recommended by the Trustee Council's Public Advisory Group.

Chief Scientist's Recommendation

This proposal will use stable nitrogen isotope ratios to reconstruct the historical variation in contributions of marine nitrogen to several lake systems in the spill area: Eshamy Lake in Prince William Sound, Upper Russian Lake on the Kenai Peninsula, Karluk Lake on Kodiak Island, and Delight and Desire lakes on the outer Kenai Peninsula coast. Past work by these investigators has demonstrated that fluctuations in sockeye salmon runs to lakes are approximated by the variability in the nitrogen isotope ratios in sediments deposited at the time of salmon returns. The work of Francis and Hare has clearly shown that salmon populations fluctuate in concordance with the Pacific Decadal Oscillation. This relationship then presents the retrospective tool needed to provide a historical context for understanding how the marine ecosystem is likely to change naturally in the future under various climatic conditions. This work will supplement independent ongoing work of a similar nature in other local lake systems and thereby provide a reliable regional picture of fluctuations. Fund.

Trustee Council Action

Fund, including work recommended by the Public Advisory Group at Delight and Desire lakes on the outer Kenai Peninsula coast. This project will conduct a retrospective study of sockeye abundance in certain lakes in the spill region and develop hypotheses about how changes in the atmosphere/ocean system affect salmon populations. It is responsive to the *FY 02 Invitation*, which invited proposals to analyze and synthesize existing data sets and historical records.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02656	Retrospective Analysis of Nearshore Marine Communities Based on Analysis of Archaeological Material and Isotopes	G. Irvine/USGS, J. Schaaf/NPS DOI		New 1st yr. 2 yr. project	\$109.9	\$0.0	\$18.0	\$127.9

Project Abstract

This project will investigate long-term (6,300 year) patterns of productivity and relative species abundances in nearshore, intertidal communities via retrospective analyses. These analyses will focus on excavated midden remains of very rich, well-dated archaeological sites along the Katmai National Park and Preserve coast. Changes in nearshore marine communities will be assessed through examination of relative species abundances, size-frequency analysis, and other indicators of habitat changes. Isotopic analysis of shells will provide an assessment of long-term productivity patterns in the nearshore marine environment as related to major periods of climate change.

Chief Scientist's Recommendation

This project has great potential to examine one measure of marine productivity over the past 6,300 years and to compare this data with recently published work on sockeye salmon populations over a similar period. The principal investigators are well qualified and have written a creditable proposal. Fund revised proposal, which successfully addresses the issues of interpretation of stratigraphy raised by the reviewers.

Trustee Council Action

Fund. This project is designed to improve understanding of long-term change in nearshore marine communities and investigate the relationship between productivity and climate. It is responsive to the *FY 02 Invitation*, which invited proposals to analyze and synthesize existing data sets and historical records.

02667	Effectiveness of Citizens' Environmental Monitoring Program	S. Mauger/Cook Inlet Keeper	ADEC	New 1st yr. 1 yr. project	\$17.9	\$0.0	\$0.0	\$17.9
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Project Abstract

This project will analyze five years of past data from Cook Inlet Keeper's Citizens' Environmental Monitoring Program, the first consistent, credible, and coordinated community-based water quality monitoring program in Alaska. Keeper's stream ecologist will determine if sampling frequency, methods, parameters, and site selection are effective at meeting the monitoring objectives of detecting significant changes in water quality over time. The results will assist Cook Inlet Partners (Kenai Watershed Forum, Anchorage Waterways Council, Wasilla Soil and Water Conservation District) in refining their community monitoring efforts and may lead to future community-based monitoring programs.

Chief Scientist's Recommendation

This project will analyze the power of Cook Inlet Keeper's Citizens' Environmental Monitoring Program to detect change in water quality parameters. The Keeper program is an effective model for community-based sampling and this proposal is a good preparation for community based monitoring within GEM. Fund revised proposal, which clarifies the statistical approach.

Trustee Council Action

Fund. This project will provide funding for Cook Inlet Keeper to analyze five years of data from their Citizens' Environmental Monitoring Program to determine if the monitoring protocols and sampling design are effective at detecting significant change in water quality over time. The project is good preparation for community based monitoring under GEM.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02668	Developing an Interactive Water Quality and Habitat Database and Making it Accessible on the Web	J. Cooper/Cook Inlet Keeper	ADEC	New 1st yr. 1 yr. project	\$16.1	\$0.0	\$0.0	\$16.1

Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

The project partners have formed a database committee to create a consistent data management system where all citizens groups and agencies can equally share, report, and review their water quality and habitat data. The committee's objective is to make data more accessible and more useful to decision makers, stakeholders, resource managers, and the public. The committee will uplink a shared interactive database on the Internet where it can be viewed and queried with GIS watershed maps, photos, and graphs so that it is user-friendly, educational and meaningful. Access to this data will help facilitate a better understanding about threats to, and solutions for, water quality and habitat.

This project was deferred in order to resolve the issue of whether it was duplicative of some part of the Cook Inlet Information Management and Monitoring System (CIIMMS) database (Project /391). Clarification has now been provided and there is no duplication of effort. The database proposed under this project will be accessible using the web browsing software developed by CIIMMS for the Cook Inlet Region and the two efforts are, in fact, compatible. Fund.

Fund. The issues raised by the reviewers in regard to the relationship between this proposed water quality database and CIIMMS (Cook Inlet Information Management and Monitoring System, Project /391), in which the Trustee Council made a major financial investment, have been satisfactorily addressed. This project will provide funding for Cook Inlet Keeper to create a database structure and data entry system that should improve management of citizens' water quality data. It has good cost sharing with other interested entities.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 02 Approved	Deferred Further	FY 03 Estimate	Total FY 02-03
02671	Coordinating Volunteer Vessels of Opportunity to Collect Oceanographic Data in Kachemak Bay and Lower Cook Inlet	D. Stram, C. Schoch/Kachemak Bay NERR	ADFG	New 1st yr. 1 yr. project	\$34.8	\$0.0	\$0.0	\$34.8

Project Abstract

Cook Inlet Keeper and the Kachemak Bay National Estuarine Research Reserve (NERR) will organize a network database of local community volunteers for the purpose of collecting oceanographic data from regional ships of opportunity. An outreach program will be undertaken to identify and construct a database of private and commercial vessels making frequent trips in the Kachemak Bay, lower Cook Inlet, and Gulf of Alaska regions. A thermosalinograph, installed on a vessel at the Kachemak Bay NERR, will be used to clarify regions for future data collection. These data will also be correlated with existing stationary sensors and volunteer-monitoring projects to expand spatial and temporal knowledge of water quality and mixing patterns and their relationship to the dispersal of larvae and pollutants in the region.

Chief Scientist's Recommendation

The work proposed could be a pioneering effort in community involvement in scientific data acquisition. Methods will be developed that will allow community-based efforts to fill important gaps. A revised proposal has been developed that deemphasizes data collection and analysis in the initiation of the project and focuses on (a) developing logistics for a network of local ships of opportunity, (b) participation of the broader oceanographic community in identifying the types of variables and locations for sampling, and (c) implementation of QA/QC procedures for data collection and geolocation. The principal investigators should also develop a prototype plan for allocating volunteer sampling efforts so that efforts are allocated to capture spatial and temporal ocean variability. Fund.

Trustee Council Action

Fund revised proposal, which deemphasizes data collection and analysis and focuses on organizing a network database of local community volunteers for the purpose of collecting oceanographic data from regional ships of opportunity. As recommended by the Chief Scientist, the principal investigators should also develop a prototype plan for allocating volunteer sampling efforts so that efforts are allocated to capture spatial and temporal ocean variability. Vessels of opportunity are a cost-effective data collection method that may be useful to GEM, and proposals related to ships of opportunity were specifically invited in the *FY 02 Invitation*. Methods developed under this project should be transferable to other regions of the spill area, such as Prince William Sound.

02681	Placeholder: Nearshore/Intertidal Monitoring	To be determined		New 1st yr.	\$0.0	\$50.0		\$0.0
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Project Abstract

Several proposals to conduct some form of nearshore/intertidal monitoring were submitted for FY 02. However, those proposals are premature pending development of a long-term monitoring scheme for the nearshore/intertidal area. A workshop to develop options for long-term monitoring will be held in January 2002 under Project 02395. This project simply reserves funds for possible nearshore/intertidal monitoring work later in FY 02, should the workshop recommend that such work be invited.

Chief Scientist's Recommendation

This project is simply a placeholder for potential nearshore/intertidal monitoring work in FY 02, depending on the results of the workshop to be held under Project 02395. Defer until after January 2002 workshop.

Trustee Council Action

Continue to defer decision on funding this project until the nearshore/intertidal workshop funded under Project 02395 has been held (scheduled for January 2002) and recommendations for nearshore/intertidal monitoring under GEM have been developed. It is possible that the workshop will recommend a small amount of pilot or preliminary work to begin in FY 02. The \$50,000 in this project has been set aside for that purpose.