

FISCAL YEAR 2001

WORK PLAN

JANUARY 2001



Exxon Valdez Oil Spill Trustee Council

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Fiscal Year 2001

Work Plan

January 2001

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Fiscal Year 2001 Work Plan

January 2001

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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 2001, and touches on the other activities of the Council as well.

FY 01 continues the transition from the current restoration program to a program designed to ensure the long-term health and conservation of resources injured by the spill. In March 1999 the Trustee Council earmarked \$55 million of Restoration Reserve funds for future habitat protection and the remainder in the Reserve, an estimated \$115 million, for long-term research and monitoring in the spill area and adjacent northern Gulf of Alaska. Planning for the research and monitoring program (referred to as GEM, Gulf Ecosystem Monitoring) began in FY 00 and continues in FY 01.

Synthesizing results of EVOS research conducted to date continues to be a priority. As in past years, a number of projects include funding for preparation of manuscripts to be submitted to independent peer-reviewed journals. To date, 401 EVOS manuscripts have been published. In FY 01, the Sound Ecosystem Assessment, one of the three major ecosystem studies, will be the topic of a special volume of the prestigious journal, *Fisheries Oceanography*. Funding is also provided for preparation of the Trustee 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).

The FY 01 Work Plan continues other themes begun in earlier years: monitoring the recovery status of species injured by the oil spill (such as the killer whale survey), researching factors that may be persisting in limiting the recovery of injured resources (such as the effects of oil contamination on pink salmon reproduction), conducting research that should lead to long-term improvements in resource management (such as the herring stock identification project), and direct restoration of injured resources (such as the Solf Lake sockeye salmon enhancement project). Also in FY 01, a follow-up assessment of the amount of oil remaining on shorelines in Prince William Sound will be conducted.

The collection of projects funded in FY 01 continues the Trustee Council's commitment to community involvement in the restoration process. The Youth Area Watch program is now underway in schools in Prince William Sound, lower Cook Inlet, and Kodiak Island. The Community Involvement Project is continuing, with a shift in emphasis in FY 01 to provision of technical assistance to communities to

participate in the development of GEM and to further develop their natural resource programs and stewardship capacity.

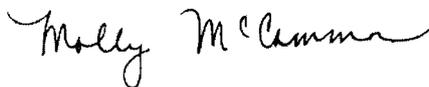
Also of interest, the FY 01 Work Plan includes four projects that will be conducted at the Alaska SeaLife Center in Seward. The SeaLife Center, which was funded in part by the Trustee Council, opened in May 1998. It provides unique, technologically advanced facilities for research on marine mammals, fish and seabirds.

An important continuing trend, integral to transitioning into a program of a size that is sustainable over the long term, is the decrease in the size of the research, monitoring, and general restoration program. Funding for research, monitoring, and general restoration activities is declining in FY 01 (from \$8.3 million in FY 00 to \$6 million in FY 01), as are the administrative costs of the program (from \$2.0 million in FY 00 to \$1.5 million in FY 01). Agency project management costs also are declining accordingly.

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 more than 698,000 acres of land and conservation easements. FY 01 funding will support the final steps of the protection process for several remaining small parcels. In addition, in January 2001 the Council approved \$1 million for the U.S. Department of the Interior to enter into a grant with two non-profits to continue the Council's habitat protection effort through FY 02. The non-profits bring several advantages to the 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 feel free to contact me if you would like more information on the activities of the Council or its Public Advisory Group, or if you have comments or suggestions on the Council's restoration efforts.

Sincerely,



Molly McCammon
Executive Director

The Work Plan Process

Table 1 describes milestones in development of the FY 01 Work Plan. The Trustee Council made most of its funding decisions in August so that projects could begin on October 1, 2000, the first day of federal fiscal year 2001. A few funding decisions were deferred until December and January to allow time for review of results from the FY 00 field season or further deliberation on project objectives and work plan priorities.

Table 1. Milestones for FY 01 Work Plan

Feb. 15, 2000	<i>Invitation to Submit Restoration Proposals for Federal Fiscal Year 2001</i> was issued.
April 15, 2000	Restoration Office received 113 research, monitoring, and general restoration proposals requesting \$13.3 million for FY 01.
May 21-24, 2000	Chief Scientist and core reviewers met to discuss the scientific and technical merits of proposals.
June 7, 2000	Executive Director discussed proposals with Chief Scientist, Public Advisory Group representatives, and Trustee agencies and formed preliminary recommendations.
June 15, 2000	<i>FY 01 Draft Work Plan</i> was distributed for public comment.
July 15, 2000	Public hearing was held on <i>FY 01 Draft Work Plan</i> .
July 19-20, 2000	Public Advisory Group met to advise Trustee Council on work plan.
Aug. 3, 2000	Trustee Council approved 46 research, monitoring, and general restoration projects totaling \$4,685,700 for <i>FY 01 Work Plan</i> , and deferred projects that required further review or deliberation.
Oct. 1, 2000	Federal fiscal year 2001 (FY 01) began.
Dec. 5, 2000	Trustee Council approved 9 additional research, monitoring, and general restoration projects for <i>FY 01 Work Plan</i> . This action brought the FY 01 authorization total to \$5,935,600.
Jan. 16, 2001	Trustee Council approved 1 additional research project for <i>FY 01 Work Plan</i> . This action brought the FY 01 authorization total to \$5,945,700.

Summary of Fiscal Year 2001 Projects

For FY 01, the Trustee Council received 113 research, monitoring, and general restoration proposals requesting a total of \$13.3 million. In August and December 2000 and January 2001, the Council authorized 56 projects totaling \$5,945,700. The table on the following page (Table 3) summarizes the Trustee Council's funding decisions by "resource cluster," as well as the expected cost of completing the projects authorized in FY 01. (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 00. 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	12	\$1,201,600
Continuing Projects	44	\$4,744,100

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 (\$268,100, for services such as negotiations, land surveys, and appraisals), and the eighth \$12 million payment to the Restoration Reserve.

Table 3. Summary of Funding by Resource Cluster

Resource Cluster	FY 01 Approved	FY 02 Estimate	Total FY 01-02
Pink Salmon	\$671.7	\$279.0	\$950.7
Pacific Herring	\$101.9	\$47.1	\$149.0
SEA and Related Projects	\$479.8	\$150.6	\$630.4
Cutthroat Trout, Dolly Varden, and Other Fish	\$186.8	\$0.0	\$186.8
Marine Mammals	\$645.9	\$128.4	\$774.3
Nearshore Ecosystem	\$1,181.4	\$130.0	\$1,311.4
Seabird/Forage Fish and Related Projects	\$553.7	\$109.0	\$662.7
Subsistence	\$724.6	\$444.1	\$1,168.7
Ecosystem Synthesis/GEM Transition	\$862.7	\$90.0	\$952.7
Public Information/Science Mgt./Admin.	\$252.9	\$46.8	\$299.7
Project Management	\$284.3	\$200.0	\$484.3
Total Research, Monitoring, and General Restoration Projects:	\$5,945.7	\$1,625.0	\$7,370.7
Habitat Protection/Acquisition Support	\$268.1		\$268.1
Public Information/Science Mgt./ Admin.	\$1,500.0	\$1,500.0	\$3,000.0
Restoration Reserve	\$12,000.0	\$12,000.0	\$24,000.0
Other Projects (Archaeological Repository)	\$64.3		\$64.3
Total All Activities:	\$19,778.1	\$15,125.0	\$34,703.1

Description of Fiscal Year 2001 Projects

This section describes the research, monitoring, and general restoration projects funded by the Trustee Council for FY 01. 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 "resource cluster." Each cluster description includes the Trustee Council's restoration strategies (which were established in the *Restoration Plan* and are updated as needed each year through the work plan), the projects authorized to implement those strategies, and the expected cost of completing the projects authorized in FY 01. (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 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.)

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 00) or new.

A Detailed Project Description (DPD) and budget are on file at the Anchorage Restoration Office for each of the projects summarized in this section.

Pink Salmon

Restoration Strategies for Fiscal Year 2001

Research and Monitor the Toxic Effect of Oil

- Complete natal habitats project (01454), which is evaluating the recovery status of pink salmon at the stream level.
- Continue gamete viability project (01476), which is validating the effects of oil contamination on pink salmon reproduction.
- Begin embryo survival study (01492), which is addressing critiques of earlier studies of pink salmon embryo mortality by investigating sampling timing as a possible source of bias.

Provide Management Information and Tools

- Continue genetic linkage project (01190), which will apply the newly developed linkage map for the pink salmon genome to questions related to pink salmon growth and survival.
- Complete remote video and time-lapse recording project (01366), which is developing new techniques for estimating spawner abundance.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01190	Genome Linkage Map	\$400.9	\$240.0	\$640.9
01366	Remote Video and Time-Lapse Recording	\$11.3	\$0.0	\$11.3
01454	Persistent Oil in Natal Habitats	\$103.2	\$0.0	\$103.2
01476	Effects of Oiled Incubation on Reproduction	\$94.2	\$39.0	\$133.2
01492	Were Embryo Studies Biased?	\$62.1		\$62.1
TOTAL		\$671.7	\$279.0	\$950.7

Pacific Herring

Restoration Strategies for Fiscal Year 2001

Investigate Herring Disease as a Cause of the 1993 Crash

- Complete monitoring project (01462), which is assessing whether disease is limiting recovery of the Prince William Sound herring population.

Provide Management Information

- Complete acoustic target strength project (01468), which has defined the acoustic strength of different age classes of herring and sand lance.
- Begin stock identification project (01538), which is performing a comparative investigation of two stock identification techniques – analysis of otoliths and analysis of fatty acid profiles.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01462	Disease & Recovery	\$86.0	\$0.0	\$86.0
01468	Acoustic Target Strength	\$5.8	\$0.0	\$5.8
01538	Stock Identification Methods	\$10.1	\$47.1	\$57.2
TOTAL		\$101.9	\$47.1	\$149.0

Sound Ecosystem Assessment (SEA) and Related Projects

Restoration Strategies for Fiscal Year 2001

Investigate Ecological Factors that Influence Marine Productivity

- Complete 3-D ocean state simulation project (01389), which will improve understanding of larval herring transport, which is essential for predicting productivity in Prince William Sound.

Develop Monitoring Techniques

- Continue pristane monitoring project (01195), which is developing a relatively inexpensive measure of marine productivity, designed to allow predictions about future fisheries production and harvest levels.
- Complete food web project (01393-BAA), which is using carbon and nitrogen stable isotope ratios to confirm the relative trophic status of species within the Prince William Sound ecosystem.
- Conduct hydroacoustic survey project (01452-BAA), which will provide data on annual and seasonal variation of predators and food availability for juvenile pink salmon.
- Continue oceanographic exchange project (01552-BAA), which is gathering and analyzing data from the Hinchinbrook Entrance buoy.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01195	Pristane Monitoring	\$55.0	\$50.0	\$105.0
01389	3D Ocean State Simulations	\$142.5	\$0.0	\$142.5
01393	Food Webs	\$119.0	\$0.0	\$119.0
01452	Hydroacoustic Surveys	\$57.6	\$0.0	\$57.6
01552	Oceanographic Exchange	\$105.7	\$100.6	\$206.3
TOTAL		\$479.8	\$150.6	\$630.4

Cutthroat Trout, Dolly Varden, and Other Fish

Restoration Strategies for Fiscal Year 2001

Research and Monitor Populations

- Complete salmon shark assessment project (01396), which is investigating seasonal salmon shark movements and diet in Prince William Sound and the Gulf of Alaska.

Develop Monitoring Techniques and Strategies

- Begin archival tag project (01404), which will test the development and application of archive tag technology, which has great promise for a number of fish species.
- Complete satellite tag project (01478), which is testing satellite tag technology for its utility in defining critical habitat for various fish species.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01396	Shark Assessment	\$85.0	\$0.0	\$85.0
01404	Testing Archival Tags	\$75.0		\$75.0
01478	Testing Satellite Tags	\$26.8	\$0.0	\$26.8
TOTAL		\$186.8	\$0.0	\$186.8

Marine Mammals

Restoration Strategies for Fiscal Year 2001

Research and Monitor Harbor Seal Populations

- Complete field monitoring project (01064), which in FY 01 will prepare several manuscripts; in general, this project is helping to explain the decline in harbor seals in Prince William Sound and documenting recent trends.
- Continue community-based biosampling project (01245); this project is discussed in the Subsistence cluster.
- Complete diet project (01341), which is studying the effect of diet on the health and body condition of harbor seals under controlled conditions at the Alaska SeaLife Center.
- Complete stable isotope project (01371), which, in collaboration with 01341, is studying how stable isotope ratios change over time in relation to diet.
- Complete lipid metabolism project (01441), which, in collaboration with 01341, is studying how fatty acid profiles change over time in relation to diet.

Research and Monitor Killer Whale Populations

- Continue killer whale investigation (01012-BAA), which is analyzing the long-term effects of the oil spill on resident and transient pods of killer whales.

Develop Monitoring Techniques

- Begin new technologies project (01558), which will investigate the potential for new technologies to assess and monitor the endocrine and immune systems of harbor seals as diagnostic measures of their health.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01012	Killer Whale Investigation	\$74.5		\$74.5
01064	Harbor Seal Monitoring	\$22.6	\$0.0	\$22.6
01341	Harbor Seal Health and Diet	\$82.2	\$0.0	\$82.2
01371	Harbor Seal Stable Isotopes	\$92.9	\$0.0	\$92.9
01441	Harbor Seal Lipid Metabolism	\$93.5	\$0.0	\$93.5
01558	New Technologies for Monitoring Harbor Seal Recovery	\$280.2	\$128.4	\$408.6
TOTAL		\$645.9	\$128.4	\$774.3

Nearshore Ecosystem

Restoration Strategies for Fiscal Year 2001

Monitor Recovery

- Continue sea otter/harlequin duck project (01423), which is investigating evidence of ongoing injury to these two nearshore species.
- Conduct marine algal species project (01551-BAA), which will prepare a manuscript on the occurrence and distribution of marine macroalgae in the spill area based on data collected under earlier EVOS projects.

Research Mechanisms Limiting Recovery

- Continue harlequin duck monitoring project (01407), which is assessing the recovery of harlequin duck populations inhabiting oiled areas.
- Conduct sea otter oil exposure project (01534), which will relate present levels of CYP1A induction in sea otters with levels immediately following the spill in order to provide a long-term picture of oil exposure in sea otters.
- Complete Yakataga oil seep project (01599), which will refine existing interpretations of hydrocarbon sources in Prince William Sound.

Monitor the Fate and Persistence of Oil

- Continue hydrocarbon database project (01290), which is analyzing hydrocarbon samples collected through other Trustee Council projects.
- Begin evaluation of remaining oil project (01543), which will assess the amount of oil remaining from the oil spill on shorelines within Prince William Sound.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01290	Hydrocarbon Database	\$35.0	\$35.0	\$70.0
01407	Harlequin Duck Populations	\$67.6		\$67.6
01423	Population Change: Nearshore Vertebrate Predators	\$505.4		\$505.4
01534	Sea Otter Oil Exposure	\$19.9	\$0.0	\$19.9
01543	Oil Remaining in the Intertidal	\$477.2	\$95.0	\$572.2
01551	Marine Algal Species	\$65.8	\$0.0	\$65.8
01599	Yakataga Oil Seeps	\$10.5	\$0.0	\$10.5
TOTAL		\$1,181.4	\$130.0	\$1,311.4

Seabird/Forage Fish and Related Projects

Restoration Strategies for Fiscal Year 2001

Research Mechanisms Limiting Recovery of Seabird Populations

- Continue Alaska Predator Ecosystem Experiment (APEX, 01163), which in FY 01 will analyze data and write up results from this multi-year effort to investigate seabird populations in relation to the availability and quality of forage fish.
- Complete pigeon guillemot project (01327), which is conducting research at the Alaska SeaLife Center on how diet and oil affect the growth and physiology of nestling guillemots, and testing techniques to establish a new guillemot colony.
- Complete murre/kittiwake project (01338), which is exploring whether the availability and quality of forage fish influence the survival of adult murre and kittiwakes.
- Continue food stress project (01479), which is exploring the use of corticosterone, a biochemical indicator of stress, as a tool to monitor seabird populations.
- Conduct stress hormone project (01555), which will investigate in more detail how baseline levels of corticosterone vary with food availability and breeding state.

Research and Monitor Seabird Populations

- Continue common murre project (01144), which in FY 01 will census the common murre colony at the Chiswell Islands.
- Continue marine bird monitoring project (01159), which in FY 01 will analyze results from the seventh biennial boat survey of marine bird abundance in Prince William Sound, which was conducted in FY 00.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01144	Common Murre Monitoring	\$46.5	\$14.0	\$60.5
01159	Marine Bird Boat Surveys	\$25.0		\$25.0
01163	APEX	\$199.6	\$20.0	\$219.6
01327	Pigeon Guillemot Research	\$86.9	\$0.0	\$86.9
01338	Adult Murre/Kittiwake Survival	\$47.2	\$0.0	\$47.2
01479	Effects of Food Stress	\$129.6	\$75.0	\$204.6
01555	Stress Hormones	\$18.9	\$0.0	\$18.9
TOTAL		\$553.7	\$109.0	\$662.7

Archaeological Resources

Restoration Strategies for Fiscal Year 2001

Protect Artifacts from Further Injury and Store Them in Facilities

- Continue archaeological repository project (99154). In January 1999, the Trustee Council authorized \$2.8 million for a grant to Chugachmiut, Inc. to develop a regional archaeological repository in Seward; local display facilities in Chenega Bay, Tatitlek, Cordova, Valdez, Port Graham, Nanwalek, Seldovia, and Seward; and traveling exhibits. The purpose of this project is to provide appropriate facilities to store artifacts recovered from Prince William Sound and lower Cook Inlet during the spill response, damage assessment, and restoration efforts and to provide opportunities for people to view these articles and other materials with restoration value. Work is expected to continue on the project through FY 02.

This project was funded outside of the regular work plan of research, monitoring, and general restoration projects.

Subsistence

Restoration Strategies for Fiscal Year 2001

Restore Injured Resources Used for Subsistence

In general, all projects which address resources used by subsistence harvesters are subsistence restoration projects in that they restore the injured resources upon which subsistence depends.

Enhance or Replace Injured Resources

- Complete clam restoration project (01131), which in FY 01 will prepare a final report on this multi-year project that has worked to enhance local clam populations.
- Continue Kametlook River project (01247), which is enhancing a coho salmon run near the community of Perryville.
- Continue Solf Lake project (01256B), which is enhancing production of sockeye salmon in Solf Lake near the community of Chenega Bay.

Enhance or Replace Lost or Reduced Services

- Complete surf scoter project (01273), which is studying the life history and ecology of surf scoters in Prince William Sound, which are important to subsistence harvesters.
- Continue spot shrimp project (01401), which is studying the abundance of spot shrimp in Prince William Sound, which are important to subsistence harvesters.

Increase Involvement of Subsistence Users in the Restoration Process

- Continue community involvement project (01052), which in FY 01 will provide technical assistance to Tatitlek, Port Graham, Nanwalek, Ouzinkie, and Cordova/Eyak to participate in the development of GEM (the Trustee Council's long-term monitoring and research program) and to further develop their natural resource programs and stewardship capacity.
- Continue youth area watch project (01210), which is involving junior high and high school students from Chenega Bay, Tatitlek, Cordova, Whittier, Valdez, Seward, Port Graham, Nanwalek, and Seldovia in restoration projects.
- Continue harbor seal biosampling project (01245), which is collecting harbor seal tissue samples for use by ongoing EVOS projects that are seeking to explain why harbor seals are not recovering.
- Complete video project (01481), which is documenting impacts of the oil spill on subsistence use of intertidal resources in the Chenega Bay and Ouzinkie areas.
- Continue Kodiak Island youth area watch project (01610), which extends the Youth Area Watch program to the seven communities on Kodiak Island.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01052	Community Involvement	\$201.9	\$180.0	\$381.9
01131	Clam Restoration	\$10.5	\$0.0	\$10.5
01210	PWS/Cook Inlet Youth Area Watch	\$107.0	\$96.3	\$203.3
01245	Harbor Seal Biosampling	\$40.0	\$25.0	\$65.0
01247	Kametolook River	\$22.7	\$28.0	\$50.7
01256B	Solf Lake Stocking	\$24.4	\$20.0	\$44.4
01273	Surf Scoter Life History	\$50.1	\$0.0	\$50.1
01401	Spot Shrimp	\$94.4	\$33.0	\$127.4
01481	Intertidal Documentary	\$111.8	\$0.0	\$111.8
01610	Kodiak Youth Area Watch	\$61.8	\$61.8	\$123.6
TOTAL		\$724.6	\$444.1	\$1,168.7

Reduction of Marine Pollution

Restoration Strategies for Fiscal Year 2001

Improve Community Waste Management

- Complete lower Cook Inlet waste management project (99514). In FY 99, the Trustee Council funded this project to develop a plan for reducing marine pollution in Nanwalek, Port Graham, and Seldovia. Completion of this plan is expected in FY 01. Following review of the plan, the Council may consider a proposal in FY 02 for implementation of the plan.

Implementation of the plan would be funded outside of the regular work plan of research, monitoring, and general restoration projects.

Ecosystem Synthesis / GEM Transition

Restoration Strategies for Fiscal Year 2001

Integrate and Synthesize Project Results

- Complete Cook Inlet information management project (01391), which aims to improve management of injured and other marine natural resources by facilitating data sharing, resource management, and planning within the Cook Inlet watershed.

Prepare for GEM (Gulf Ecosystem Monitoring, the Trustee Council's Long-Term Research and Monitoring Program)

- Complete Trustee Council contribution to long-term oceanographic monitoring project (01340), which is gathering temperature and salinity data that will help researchers evaluate changes in the ecosystem.
- Continue National Research Council project (01360-BAA), which is providing external review of GEM.
- Conduct Kachemak Bay monitoring project (01385), which will provide matching funds for the purchase of oceanographic instruments that will enable the Kachemak Bay National Estuarine Research Reserve to begin a long-term monitoring program.
- Continue data system project (01455-BAA), which in FY 01 will fund a data system manager for GEM.
- Continue GEM planning project (01630), which is conducting the planning and public review necessary to develop GEM.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01340	Oceanographic Monitoring	\$72.0	\$0.0	\$72.0
01360	Guidance for Future Research	\$241.6	\$90.0	\$331.6
01385	Kachemak Bay Monitoring	\$11.0	\$0.0	\$11.0
01391	Cook Inlet Monitoring System	\$239.0	\$0.0	\$239.0
01455	Data System for GEM	\$35.7		\$35.7
01630	Planning for GEM	\$263.4		\$263.4
	TOTAL	\$862.7	\$90.0	\$952.7

Public Information, Science Management, and Administration

Restoration Strategies for Fiscal Year 2001

Provide Research Results to the Public and Others

- Conduct exhibit project (01513), which will create a permanent exhibit at the Alaska SeaLife Center on the resources injured by the oil spill.
- Begin Trustee Council final report (01535), which is preparing a publication that 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, 01550), which serves as a central access point and repository for information generated as a result of the oil spill.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01513	Alaska SeaLife Center Exhibit	\$50.3	\$0.0	\$50.3
01535	Trustee Council Final Report	\$73.5	\$46.8	\$120.3
01550	ARLIS	\$129.1		\$129.1
	TOTAL	\$252.9	\$46.8	\$299.7

Project Management

The costs of project management in FY 01 are funded through project 01250. Project management is provided by resource managers in the six Trustee agencies and provides essential accountability to the work plan process. It includes such functions as tracking the progress of restoration projects; ensuring that projects meet their stated goals, objectives, and schedules; monitoring project expenditures; and ensuring that all reports and other contract deliverables are properly performed.

The FY 01 funding level of \$284,300 represents a reduction from the amount approved for FY 00 (\$401,900). The estimate of funding for FY 02 for project management (see below) also represents a reduction, consistent with the reduction in the funding cap for the overall work plan.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01250	Project Management	\$284.3	\$200.0	\$484.3
	TOTAL	\$284.3	\$200.0	\$484.3

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 01126 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 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01126	Habitat Acquisition Support	\$268.1		\$268.1

As of January 2001, the Trustee Council has committed \$372.8 million to protect 691,172 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 was recently accepted by the Koniag Board of Directors;
- 115,973 acres within the 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 million to acquire 7,700 acres of habitat in small parcels (generally under 1,000 acres each), and authorized \$2.1 million to purchase an additional 1,350 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 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 through 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. During this same period the Trustee agencies will be completing other, already authorized small parcel acquisitions.

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 would 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 01100) continues to decline, from a high of \$4.1 million in FY 94 to \$1.5 million in FY 01. Project 01100 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 such as the Council's newsletter, operations and staff support for the Trustee Council itself, an annual financial audit, and a variety of smaller items.

Funding Approved for Fiscal Year 2001

Project Number and Title		FY 01 Approved	FY 02 Estimate	TOTAL 01-02
01100	Public Info/Science Mgt/ Administration	\$1,500.0	\$1,500.0	\$3,000.0

RESTORATION RESERVE

In recognition of the fact that complete recovery from the oil spill may not occur for decades, the Trustee Council established the Restoration Reserve to hold funds to be used for restoration after the last annual payment is received from Exxon Corporation in September 2001. For FY 01, the Council approved deposit of \$12 million into the reserve account. This brings the total approved for the reserve to \$96 million. Together with other, non-earmarked restoration funds, the Council anticipates a reserve fund of \$170 million in October 2002.

In 1999 Congress enacted Public Law 106-113, which allows the Trustee Council to invest its funds, including the funds in the Restoration Reserve, in accounts outside of the US Treasury. The purpose of the law is to allow the Council to gain a higher rate of return on its funds. On October 5, 2000 the Council's funds were transferred to the Alaska Department of Revenue, Division of Treasury, for ongoing investment and management.

In March 1999, the Council determined that the two primary uses of the Restoration Reserve funds will be a long-term research and monitoring program in the spill area and adjacent northern Gulf of Alaska and additional habitat protection, especially for small parcels (under 1,000 acres each). The Council earmarked \$55 million for future habitat protection. The remainder, an estimated \$115 million, was earmarked for research and monitoring. Planning for the long-term research and monitoring program (referred to as GEM, Gulf Ecosystem Monitoring) is currently underway (Project /630). It is intended to ensure the long-term health and conservation of the spill-affected marine ecosystem, as well as the resources injured by the spill.

**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 00. Also, what year FY 01 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., 3rd year of a 4-year project).
FY 01 Approved	The amount of funding approved by the Trustee Council for fiscal year 2001 (October 1, 2000 - September 30, 2001).
FY 02 Estimate	The estimated project cost for FY 02.
Total FY 01-02	Sum of the estimated project cost for FY 01 and FY 02.
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 01.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01012-BAA	Photographic and Acoustic Monitoring of Killer Whales in Prince William Sound and Kenai Fjords	C. Matkin/North Gulf Oceanic Society	NOAA	Cont'd 9th yr.	\$74.5		\$74.5
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will continue 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. Methods include the photo-identification of individual whales and acoustic monitoring with remote and vessel-based hydrophone systems. The project continues interpretation of current and previous data as well as data collected with other funds. [NOTE: This project also requested funds for FY 01 (\$72,000), FY 03 (\$75,000), and FY 04 (\$80,000).]	As a sentinel species occupying high trophic levels, killer whales are prime indicators of the health of the food web and the local environment. In FY 01, emphasis on a tighter linkage of the population dynamics to other elements of the ecosystem should be increased, to the extent this can be done. Given that killer whales are very much in the public eye, and the widespread perception that the population has suffered directly from the oil spill, this work is critical and should be continued. Production of publishable manuscripts is improving. Fund.			Fund FY 01 only contingent on submittal of two of the previously promised manuscripts not yet submitted: Mating between acoustic clans (Barrett-Lennard) and niche partitioning (Barrett-Lennard). Future funding will depend on review of the FY 01 results. This project is providing valuable information about the long-term effects of the oil spill on resident and transient pods of killer whales in Prince William Sound.		
01052	Community Involvement Planning for GEM	P. Brown- Schwalenberg/CRRC	ADFG	Cont'd 7th yr. 8 yr. project	\$201.9	\$180.0	\$381.9
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	In FY 01, this project will continue to actively involve residents of Tatitlek, Chenega Bay, Port Graham, Nanwalek, Cordova/Eyak, Seward, Seldovia, Valdez, Kodiak/Ouzinkie, and Chignik Lake in the restoration program through a network of local facilitators. In addition, the project will work to address the future of community involvement with regard to the Gulf Ecosystem Monitoring (GEM) program, the Trustee Council's long-term research and monitoring program. In FY 01, the Community Natural Resources Coordinator (formerly the Spill Area-Wide Community Involvement Coordinator), the TEK Specialist, a contracted science advisor, and the community facilitators will focus on three objectives: (a) designing a community based monitoring program, (b) identifying specific monitoring activities that may fit within the GEM program, and (c) developing possible pilot projects for FY 02.	This ongoing project is a key component of the Trustee Council's efforts to maintain and enhance the involvement of local communities in the restoration program, and it is expected that this project will coordinate the input of local communities in planning for GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term research and monitoring program). The involvement of Dr. Cooney (the lead scientist on SEA, Project /320) as a consultant on the project is a positive development, as he can effectively represent the communities' interests in the scientific planning process. The principal investigators should continue to improve and expand efforts to document accomplishments and measure success, so that a comprehensive and meaningful final report can be developed. Fund.			Fund revised proposal, which shifts the emphasis from the original community involvement and facilitation objectives to the new objectives regarding providing technical assistance to the five pilot communities (Tatitlek, Port Graham, Nanwalek, Ouzinkie, Cordova/Eyak) to participate in the development of GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term research and monitoring program) and to further develop their natural resource programs and stewardship capacity. This project was originally designed to facilitate communication among the Trustee Council, scientists, and residents of the spill area in regard to the restoration effort. It is appropriate, as the Council's efforts shift from restoration to long-term monitoring, that this project also shift its emphasis.		

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01064-CLO	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	K. Frost, ADFG	ADFG	Cont'd 7th yr. 7 yr. project	\$22.6	\$0.0	\$22.6
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will fund an additional year of data analysis and manuscript preparation for this multi-year study of harbor seals in Prince William Sound. FY 00 was to be the closeout year for this project. However, at the end of FY 00 some data will remain unanalyzed and unpublished. FY 01 funding will cover analysis and final write-up of (a) August 2000 harbor seal aerial surveys, (b) a comparison of 2000 counts with previous years (i.e., an updated analysis of population trend), (c) 1999 seal pup tagging data, and (d) integration of 1999 pup tagging data with other years and a synoptic analysis of movements and diving behavior of harbor seal pups in Prince William Sound.	This is a request for an additional closeout year for this project. The principle investigator has commitments to produce four manuscripts with FY 00 funding. Progress on manuscript preparation is satisfactory. Fund.			Fund an additional closeout year for the Principal Investigator and her collaborators to complete a total of ten manuscripts for submittal to the peer reviewed literature. The manuscripts will be used as the body of the project's final report. In general, this project is helping to explain the decline in harbor seals in Prince William Sound and document recent trends. The project has found that the decline in harbor seal populations has slowed in recent years and the Prince William Sound harbor seal population may be stabilizing.		
01100	Public Information, Science Management, and Administration	All Trustee Council Agencies	ALL	Cont'd	\$1,500.0	\$1,500.0	\$3,000.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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.	Proposal not reviewed.			Fund. This project provides overall support for administration and implementation of the restoration program. The FY 01 budget represents a reduction from the FY 00 authorization of \$2,033,900. [NOTE: This project will be funded outside of the regular FY 01 work plan of research, monitoring, and general restoration projects.]		
01126	Habitat Protection and Acquisition Support	C. Fries/ ADNR, K. Holbrook/USFS, G. Elison/DOI	ADNR	Cont'd	\$268.1		\$268.1
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project provides support to the Trustee Council in order to reach closure on habitat protection priorities. This support includes title reports, appraisals, on-site inspections, hazardous materials surveys, timber cruises and reviews, and other services necessary for the successful completion of habitat protection negotiations.	Proposal not reviewed.			Fund. This project provides support for the habitat program, including appraisals, hazardous materials surveys, closing costs, etc. [NOTE: This project will be funded outside of the regular FY 01 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 01 Approved	FY 02 Estimate	Total FY 01-02
01131	Chugach Native Region Clam Restoration	D. Daisy/CRRC	ADFG	Cont'd 6th yr. 6 yr. project	\$10.5	\$0.0	\$10.5
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>	<u>Trustee Council Action</u>				
	Cost effective procedures for establishing easily accessible subsistence clam populations near Alaska Native villages in the oil spill region are being established. All fieldwork has been completed on this project. Additional funding is needed to complete data analysis and final report preparation, as FY 99 fieldwork and data collection were more costly than anticipated. This project will extend the submittal of the final report from April 15, 2000 to April 15, 2001.	This project should provide a lasting legacy of the potential for clam restoration and aquaculture in Alaska. The grow-out portion of this project has had some problems, but is designed in a way that should yield some useful information. The additional funding request is quite modest given the size of the project. Fund.	Fund. This small amount of additional funding will allow for proper completion of the final report on this multi-year project, which has worked to enhance local clam populations as replacements for subsistence resources injured by the oil spill. Trustee Council funding support was provided for this project each year FY 95 through FY 99.				
01144	Common Murre Population Monitoring	D. Roseneau/USFWS	DOI	Cont'd 6th yr. 7 yr. project	\$46.5	\$14.0	\$60.5
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>	<u>Trustee Council Action</u>				
	This project is related to projects 98144 (which censused the Chiswell Islands murre nesting colonies in FY 98), 99144 (which censused the Barren Islands nesting colonies in FY 99), and 00144 (which provided funds for final report and manuscript preparation). It is based on the recommendation made by the principal investigator at the conclusion of the FY 98 study to recount the Chiswell Islands murre colonies in FY 00 or FY 01, and it is designed to collect additional murre population numbers data at this injured nesting complex. Data will be compared with counts made at the Chiswell Islands in 1989-1992 and 1998, and the results of these analyses will be used in combination with results from the 1989-1997 and 1999 Barren Islands studies to help determine the recovery status of common murres in the spill area.	Murres suffered the greatest total mortality of all marine birds as a result of the spill. It will have been three years since the colony at the Chiswell Islands was last censused, and an update on the status of the population there is desirable to determine recovery. The final report, to be prepared in FY 02, should include power analysis for trend monitoring of murres based on data collected from the Chiswell Islands. Fund.	Fund. This project will census the common murre colony at the Chiswell Islands, which was last censused in FY 98. The census results will help determine if common murres have fully recovered from the effects of the oil spill. As recommended by the Chief Scientist, the final report, to be prepared in FY 02, should include a power analysis based on data collected from the Chiswell Islands for trend monitoring of murres.				

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01154	Archaeological Repository, Display Facilities, and Exhibits for Prince William Sound and Lower Cook Inlet	J. Bittner/ADNR	ADNR	Cont'd 3rd yr. 4 yr. project	\$64.3		\$64.3
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	In a resolution dated January 22, 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 stated 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 01.	Proposal not reviewed.			Fund. This project will provide essential oversight as the development of the archaeological repository and local display facilities moves forward. Support costs approved by the Trustee Council in August 2000 (\$38,800) will provide oversight for the following activities related to local display facilities and traveling exhibits: compliance with the National Environmental Policy Act (NEPA), business plan development, and construction for local display facilities in Cordova, Seldovia, Port Graham, and Nanwalek; solicitation/ selection of proposals for local display facilities in Valdez, Tatitlek, and Chenega Bay; development of a training program for display facility personnel; and planning and design for four traveling exhibits. These additional funds (\$25,500) will support further work on the repository and a local display facility in Seward. Additional support costs will be needed in FY 02 to complete the second group of local display facilities and traveling exhibits. [NOTE: This project will be funded outside of the regular FY 01 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 01 Approved	FY 02 Estimate	Total FY 01-02
01159	Surveys to Monitor Marine Bird Abundance in Prince William Sound During Winter and Summer	D. Irons, R. Suryan/USFWS	DOI	Cont'd 8th yr.	\$25.0		\$25.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project has conducted small boat surveys to monitor abundance of marine birds in Prince William Sound during March 1990, 1991, 1993, 1994, 1996, 1998, and 2000 and July 1989, 1990, 1991, 1993, 1996, 1998, and 2000. This data will be used to examine trends by determining whether populations in the oiled zone changed at the same rate as those in the unoiled zone. Overall population trends for Prince William Sound from 1989-2000 will also be examined. An annual report and a publication will be prepared. [NOTE: This project also requested funds (\$50,000) for FY 03.]	This project is of high value to documenting the recovery of seabirds in Prince William Sound, as it has been conducted in a comparable fashion during the past decade. The current proposal includes sampling in FY 02 and data analysis in FY 03, which seems premature. The principal investigators should focus on data analysis and publications in FY 01, and decisions about future funding should be made after assessment of this analysis. Fund revised proposal, which reduces the cost of rewriting the data analysis programs and eliminates funding for addressing reviewer comments on the submitted manuscript.			Fund. Funding for additional surveys (FY 02 and beyond) will be considered following an analysis of the FY 00 survey results. This project will report on the results of FY 00 boat surveys of marine birds and mammals in Prince William Sound. These surveys are the primary means of monitoring the recovery of an entire suite of coastal birds and other wildlife.		
01163-CLO	Alaska Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska (APEX)	D. Duffy/Paumanok Solutions, et al	NOAA	Cont'd 8th yr. 9 yr. project	\$199.6	\$20.0	\$219.6
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will fund a second closeout year for Project /163, which is using seabirds as probes of the trophic (foraging) environment of Prince William Sound and Cook Inlet, comparing their reproductive and foraging biologies, including diet. These measurements are being compared with hydroacoustic, aerial, and net sampling of fish to calibrate seabird performance with fish distribution and abundance. This will allow a determination of the extent to which food limits the recovery of seabirds from the oil spill. Historical data from a variety of sources is being used to detect shifts in forage fish abundance and to test hypotheses explaining such shifts. In FY 01, APEX results will be produced and published as scientific papers.	APEX was a major undertaking by the Trustee Council and publication of results is necessary to legitimize the effort in the broad scientific community. The revised Detailed Project Description indicates substantial progress toward achieving a synthesis of results from individual APEX subprojects. Although titles and numbers of manuscripts have changed over the last year, I am confident that the needed synthesis is on track and that the project overall remains very productive. Fund.			Fund contingent on submittal of the APEX final report (which was due September 30, 2000). This project was deferred pending submittal and approval of a revised Detailed Project Description and budget that lay out a two-year plan (FY 01 and FY 02) for bringing the APEX project to completion; the revised documents have now been reviewed and approved. In addition, several of the manuscripts funded in FY 00 had not been submitted as planned. However, substantial progress has been made on many of these manuscripts and work is expected to continue on them in FY 01.		

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01190	Construction of a Linkage Map for the Pink Salmon Genome	F. Allendorf/Univ. Montana	ADFG	Cont'd 6th yr. 7 yr. project	\$400.9	\$240.0	\$640.9

Project Abstract

This project will continue experiments at the Alaska SeaLife Center that apply a genetic linkage map, which was constructed during the first four years of the project, to test for effects of regions of the genome on traits that are important to recovery of pink salmon (e.g., growth and survival). The map also will be used to evaluate the potential impact of hatchery-raised fish on the fitness of wild stocks. Sexually mature adults from the 1998 and 1999 cohorts produced from wild pink salmon collected from Likes Creek are expected to return to the Alaska SeaLife Center in August 2000 and 2001. Genotypes in released fry and returning adults will be compared to test for genetic differences in marine survival and other life history traits (e.g., body size, egg number, and egg size).

Chief Scientist's Recommendation

Improved management of injured resources, such as pink salmon, is an integral part of the restoration program. The objectives are relevant not only to restoration, but vitally important to fisheries management. The principal investigator has agreed that the primary focus in FY 01 will be on Objective 5, including how the results of this study can be used for salmonid conservation and harvest management. In addition, the principal investigator has begun a dialogue with the Sound Science Review Team, as recommended by the reviewers. The project will need to find alternative sources of funding beyond FY 02, as the Trustee Council objectives will be met in FY 02 and additional funding is not likely to be available beyond that time. Fund.

Trustee Council Action

Fund. FY 02 is expected to be the final year of Trustee Council contribution to this project (preparation of final report). 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, that we cannot now answer 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? [NOTE: Funding includes Alaska SeaLife Center bench fees of \$151,200 (plus \$10,600 in GA for a total of \$161,800).]

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01195	Pristane Monitoring in Mussels	J. Short, P. Harris/NOAA	NOAA	Cont'd 6th yr. 7 yr. project	\$55.0	\$50.0	\$105.0

Project Abstract

This project has focused on elucidating the transport mechanism of pristane from *Neocalanus ssp* copepods into mussels in Prince William Sound for the previous five years. Comparison of pristane concentration increases in mussels near hatcheries with marine survival of hatchery pink salmon shows a significant correlation, indicating that pristane monitoring is a candidate forecasting method for marine survival of these salmon. The project will focus on (a) assessing the reliability of these forecasts, (b) examining whether survival forecasts for hatchery pink salmon may be extended to wild stocks and to other salmonids, (c) developing a formal model for the expected relationship between pristane concentrations in mussels and marine survival of hatchery pink salmon, and (4) further evaluation of the physical and biological features of the ecosystem that modulate the production of pristane and its accumulation by mussels. [NOTE: The principal investigators have proposed that this project be continued indefinitely.]

Chief Scientist's Recommendation

This innovative project blends fisheries science, community involvement, and marine chemistry, and shows promise for making long-term contributions to fisheries management and ecological understanding. The low-cost monitoring and model validation steps proposed for FY 01 are appropriate. Fund revised proposal, which addresses questions raised by peer reviewers relative to the statistical model along with considerations of how pristane monitoring could be integrated with other biological and physical monitoring efforts.

Trustee Council Action

Fund revised proposal, which addresses peer reviewers' concerns. This project is developing a relatively inexpensive measure of marine productivity, designed to allow predictions about future fisheries production and harvest levels. Funding has been requested for FY 03 and beyond under the Trustee Council's long-term research and monitoring program (GEM, Gulf Ecosystem Monitoring), but no decisions about funding under GEM are being made at this time.

APPENDIX A: DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01210	Youth Area Watch	R. DeLorenzo/Chugach School District	ADFG	Cont'd 6th yr. 7 yr. project	\$107.0	\$96.3	\$203.3
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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 01 will be Tatitlek, Chenega Bay, Cordova, Nanwalek, Port Graham, Seldovia, Seward, Valdez, and Whittier.	This has been a model program in the past for involvement of local youth in the restoration program, and they have interacted well with the overall scientific program. Fund revised proposal, which reflects progress to date, especially which local projects are underway in each community in FY 00, documents the student web site, and includes an updated list of which restoration projects will be involved in FY 01.			Fund revised proposal, which addresses the Chief Scientist's concerns (information on local projects, which EVOS projects are involved, and web site). This project involves local youth in restoration projects. In FY 01, youth in Chenega Bay, Cordova, Nanwalek, Port Graham, Seldovia, Seward, Tatitlek, Valdez, and Whittier will participate.		
01245	Community-Based Harbor Seal Management and Biological Sampling	V. Vanek/ADFG, M. Riedel/Alaska Native Harbor Seal Commission	ADFG	Cont'd 8th yr. 9 yr. project	\$40.0	\$25.0	\$65.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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. In FY 01, the sample collection program in Prince William Sound, 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.	This project coordinates public participation in providing standardized information on harbor seals. Samples taken from subsistence harvesters obviate the need for a scientific harvest. Fund revised proposal, which includes current information from harbor seal researchers on samples that will be needed in FY 01 and what types of archived samples will likely be useful in the future.			Fund revised proposal, which includes an expanded discussion of samples collected to date, use of the samples by researchers, and the sample database. 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. In FY 01, efforts should continue to integrate the EVOS biosampling program with biosampling efforts underway statewide by the Alaska Native Harbor Seal Commission, the National Marine Fisheries Service, and the Alaska Department of Fish and Game. The principal investigators should also coordinate efforts with the contaminant sampling efforts underway by the United States Geological Survey and others.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01247	Kametolook River Coho Salmon Subsistence Project	J. McCullough, L. Scarbrough/ADFG	ADFG	Cont'd 5th yr. 6 yr. project	\$22.7	\$28.0	\$50.7
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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, to increase the efficiency of the egg take, two holding pens were installed near the coho spawning region of the river.	This ongoing project attempts to rebuild a stock with an unknown, but assumed, history of decline. Accepting the reality of the decline, the Alaska Department of Fish and Game is supportive and the documentation of the project is good. The cost is low, and the expertise and experience supports the probability of a good payoff. Fund.			Fund. This project is using instream incubation boxes to enhance a small coho salmon run 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. Trustee Council funding is expected through FY 02, at which time the run is expected to be self-sustaining.		
01250	Project Management	All Trustee Council Agencies	ALL	Cont'd	\$284.3	\$200.0	\$484.3
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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 01 funding level is a reduction from the amount approved for FY 00 (\$401,900). Funding for project management in FY 02 is expected to decline further, consistent with the decline 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.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01256B	Sockeye Salmon Stocking at Solf Lake	D. Gillikin/USFS, G. Todd/ADFG	USFS	Cont'd 6th yr. 7 yr. project	\$24.4	\$20.0	\$44.4
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will benefit subsistence, recreation, and commercial 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 will be completed in the summer of 2000 ensuring returning adult salmon access to Solf Lake in the year 2001. [NOTE: This project, originally scheduled to closeout in FY 02, is now requesting funds in FY 03 (\$5,000).]	An assessment of the suitability of Solf Lake for sockeye salmon was conducted with Trustee Council funds in FY 96, and the Council has funded the stocking of a conservatively low number of fish each year beginning in FY 98. At this point in the project, additional limnology monitoring is not essential. The Council has also funded construction of a fish way, and assessing its effectiveness through the monitoring of adult returns is important (the first adult sockeye are expected to return in FY 01). Monitoring adult returns can also be used to evaluate the success of the stocking program, making monitoring of smolt out-migration and fry abundance a low priority. FY 02 is expected to be the final year of Council support for this project. Fund revised proposal, which reduces scope to stocking and monitoring of adult returns.			Fund revised proposal, which reduces the project's scope to stocking and monitoring of adult returns. In FY 02, Council support is expected for additional stocking, adult return monitoring, and preparation of the final report. No Council funding is expected for FY 03. 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.		
01273-CLO	Scoter Life History and Ecology: Linking Satellite Technology with Traditional Knowledge to Conserve the Resource	D. Rosenberg/ADFG	ADFG	Cont'd 4th yr. 4 yr. project	\$50.1	\$0.0	\$50.1
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will provide closeout funding for the scoter satellite telemetry and traditional ecological knowledge project. A final report and manuscripts will be prepared, reporting on the findings of this three-year effort.	This project will close out a multi-year effort to improve our understanding of the life history and ecology of surf scoters. In FY 01, funds will provide for a final report and manuscripts. Of the manuscripts proposed, #1-identifying links between winter, breeding, and molting areas and #2-effects and performance of implantable satellite transmitters, should be the priority. Fund.			Fund. This project is studying the life history and ecology of surf scoters in Prince William Sound as the first step in determining the cause of their suspected population decline and developing conservation and management strategies to ensure the long-term health of the population. Surf scoters 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 is designed to benefit the service of subsistence.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01290	Hydrocarbon Database and Interpretation Service	J. Short, B. Nelson/NOAA	NOAA	Cont'd 10th yr.	\$35.0	\$35.0	\$70.0

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. [NOTE: The principal investigator has proposed that this project be continued indefinitely.]

Chief Scientist's Recommendation

This project supplies a necessary service that is needed as long as the Trustee Council collects hydrocarbon data, maintains a database, and archives the samples. This is a low cost activity that should be maintained. Fund.

Trustee Council Action

Fund. This project is the ongoing analysis and interpretation of hydrocarbon data for other Trustee Council funded studies. In FY 02 and beyond, the level of funding will be determined following a review of the expected workload.

01327-CLO	Pigeon Guillemot Restoration Research at the Alaska SeaLife Center	D. Roby/OSU, G. Divoky/UAF	DOI	Cont'd 4th yr. 4 yr. project	\$86.9	\$0.0	\$86.9
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Project Abstract

This project tests the feasibility of restoration techniques for pigeon guillemots (e.g., installation of artificial nest sites, use of social attractants, captive propagation and release). It also includes controlled experiments crucial to two other restoration objectives: (a) development of nondestructive biomarkers of petroleum hydrocarbon contamination in seabirds and (b) understanding how dietary factors (prey species composition, prey size, lipid content, feeding frequency) constrain growth, development, and condition at fledging in guillemots and other fish-eating seabirds.

Chief Scientist's Recommendation

This project has a solid history of accomplishment. The continuation of the project through FY 01 is necessary to complete the interpretation of data and production of reports. It will further understanding of the importance of diet quality and contamination to seabird productivity and population dynamics, which will be valuable to many of the broad objectives of the Trustee Council's seabird/forage fish cluster. The information will help interpret information obtained over the long-term by GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term research and monitoring program). It will also help in understanding the utility of artificial means of increasing natural populations and of ways to establish colonies of seabirds that can be efficiently and effectively studied. Fund.

Trustee Council Action

Fund closeout of this project, which is testing a restoration method for pigeon guillemots and developing information on the effects of diet and oil on the blood chemistry and growth of nestling guillemots.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01338	Survival of Adult Murres and Kittiwakes in Relation to Forage Fish Abundance	J. Piatt/USGS-BRD	DOI	Cont'd 4th yr. 4 yr. project	\$47.2	\$0.0	\$47.2
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	Some seabird populations damaged by the oil spill continue to decline or are not recovering. In order to understand the ultimate cause of seabird population fluctuations, productivity, recruitment, and adult survival must be measured. Recent studies in Project /163 (APEX) focused on measuring productivity only. Recruitment measurement demands an unrealistic study duration. This project will augment current studies in lower Cook Inlet that relate breeding success and foraging effort to fluctuations in forage fish density by using banding and resighting to quantify the survival of adult common murres and black-legged kittiwakes.	This is the final year of this project, which is addressing a question that needs to be answered in order to understand causes of fluctuations in numbers of murres and kittiwakes. The principal investigator has addressed the reviewers' earlier concerns about sample size of banded birds. Fund.			Fund. This project is intended to provide information on whether the availability and quality of forage fish influence the survival of adult murres and kittiwakes. The results of the study will contribute to understanding of the recovery of these species following the oil spill.		
01340	Toward Long-Term Oceanographic Monitoring of the Gulf of Alaska Ecosystem	T. Weingartner/UAF	ADFG	Cont'd 4th yr. 4 yr. project	\$72.0	\$0.0	\$72.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	Interannual variations in the temperature and salinity of Gulf of Alaska shelf waters could significantly influence this ecosystem and, therefore, the recovery and restoration of organisms and services affected by the oil spill. This variability is best quantified from long time series such as that gathered over 30 years at a hydrographic station near Seward (GAK 1). This project will continue this time series to quantify variability on this shelf. It will also attempt to establish relationships between Seward sea level and shelf salinity and regional atmospheric pressure patterns and discharge variability. The data and the analyses will aid in designing a cost-effective ecosystem-monitoring program.	This is the fourth year of a proposed four-year effort to maintain the 30-year time series of monthly conductivity-temperature at depth (CTD) data collected at hydrographic station GAK1. Changes in atmospheric and ocean climate are conspicuous and have numerous biological correlates at several time scales. Decadal scale variability is implicated as the cause of changing abundances of many species of fish, seabirds, and marine mammals in the North Pacific, although the mechanisms remain unknown. Findings to date are expected to be highly useful to interpretation of restoration program findings, and are also expected to be important to planning for GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term monitoring program). Fund.			Fund; however, if GLOBEC contribution to this project is approved, Trustee Council contribution may be reduced, resulting in a lapse of a small amount of the funds approved. This project will continue the existing 30-year time series of conductivity- temperature at depth (CTD) data collected at hydrographic station GAK1 on the northcentral Gulf of Alaska shelf and, as in FY 00, includes retrospective analysis of the data record at this station. The GAK1 dataset will be useful to the Trustee Council's long-term research and monitoring program (GEM, Gulf Ecosystem Monitoring).		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01341-CLO	Harbor Seal Recovery: Controlled Studies of Health and Diet	M. Castellini/UAF	ADFG	Cont'd 4th yr. 4 yr. project	\$82.2	\$0.0	\$82.2

Project Abstract

Chief Scientist's Recommendation

Trustee Council Action

This project will fund the last year of data analysis for a long-term study underway at the Alaska SeaLife Center quantifying the impact of feeding differing fish diets on the health and body condition of harbor seals. Even though health status biomarkers for marine mammals in Prince William Sound were established during field trials (Project /001), this Alaska SeaLife Center component is the critical test of how each marker varies in a seal depending on diet and season. The project will also establish whether specific diets are nutritionally adequate to maintain seal health by monitoring health parameters and measuring assimilation efficiency during feeding trials. While this project focuses on the issue of harbor seal health, the approach is potentially applicable to any of the injured top predators.

A potential reason for population changes in marine mammals in the North Pacific is long-term climate change. This study should provide some very unique and interesting information in this regard. Fund.

Fund revised proposal, which provides for project closeout in FY 01. This project is investigating the effect of diet on the health and body condition of harbor seals under controlled conditions at the Alaska SeaLife Center. The results of the study will enable scientists to test the validity of results from field tests. [NOTE: No work will be conducted at the Alaska SeaLife Center in FY 01.]

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01360-BAA	The Exxon Valdez Oil Spill: Guidance for Future Research Activities	C. Elfring/Polar Research Board, NRC	NOAA	Cont'd 2nd yr. 3 yr. project	\$241.6	\$90.0	\$331.6

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 (Gulf Ecosystem Monitoring) documents, the draft Science Program and the draft Research and Monitoring Plan. To provide context for their review, the committee will become familiar with the relevant body of scientific knowledge, including that developed by activities sponsored by the Trustee Council. The committee will prepare an interim report on the Science Program, which will help the Trustee Council in development of the Research and Monitoring Plan. The committee will then prepare a final report analyzing whether the Research and Monitoring Plan is complete, scientifically sound, and is likely to meet the expectations of the Trustee Council. Both reports will contain conclusions and recommendations intended to give guidance on the nature and scope of future research and monitoring activities in the northern Gulf of Alaska.

Chief Scientist's Recommendation

Evaluation by the National Research Council (NRC) is critical to development of the Gulf Ecosystem Monitoring program. NRC reports will contain conclusions and recommendations intended to give guidance on the nature and scope of future research and monitoring activities in the northern Gulf of Alaska. The National Research Council committee will receive Trustee Council staff support as needed to ensure timely delivery of useful products. Fund.

Trustee Council Action

Fund. This project, which will provide important external review of the Trustee Council's long-term research and monitoring program (GEM, Gulf Ecosystem Monitoring), began in FY 00. The National Research Council (NRC) is currently reviewing the draft GEM Science Program. FY 01 activities will include an interim report on the Science Program and review of the draft GEM Research and Monitoring Plan. The NRC's final report, which will contain conclusions and recommendations on the Science Program and the Research and Monitoring Plan, will be submitted to the Trustee Council early in FY 02.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01366-CLO	Improved Salmon Escapement Enumeration Using Remote Video and Time-Lapse Recording Technology	E. Otis/ADFG	ADFG	Cont'd 3rd yr. 3 yr. project	\$11.3	\$0.0	\$11.3
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	Salmon resources and services within the spill area, and particularly within Prince William Sound, were injured by the oil spill and have not fully recovered. To monitor the recovery of salmon stocks in the spill area and improve escapement information used to set spawning escapement goals, this project will develop remote video and time-lapse recording technology for enumerating salmon escapement. Remote video has the potential to provide accurate, archivable documentation of salmon escapements well beyond the capacity of aerial survey indices, and well below the cost of weir and sonar projects. Videotapes can be retrieved and reviewed weekly to facilitate in-season management of commercial fisheries. Funding in FY 01 is for preparation of a final report and possibly a publication.	This project has demonstrated a cost-effective technology to make escapement data available at a reduced cost, potentially greatly enhancing in-season management of salmon. A small amount of funding is needed for FY 01 to produce a publication from this innovative project. Fund.			Fund closeout of this project (final report and manuscript preparation). This project is developing a new technique for estimating spawner abundance that could potentially advance salmon management. The remote video technique was tested on Delight Creek (sockeye escapement in a small stream) in FY 99 and is being tested on Port Dick Creek (pink and chum escapement in a tidally influenced stream) in FY 00.		
01371-CLO	Effects of Harbor Seal Metabolism on Stable Isotope Ratio Tracers	D. Schell/UAF	ADFG	Cont'd 3rd yr. 3 yr. project	\$92.9	\$0.0	\$92.9
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	A major concern when using stable isotope tracers in ecosystem studies is the fidelity with which isotope ratios are transferred up food chains. Use of specific habitats or prey cannot be assessed because geographic gradients in isotope ratios confound trophic effects and/or prey switching. To remove these problems, this project developed complex analytical protocols to isolate amino acids from harbor seals which were pulse-labeled with ¹⁵ N-amino acids. Subsequent samples of blood plasma and red blood cells over time allowed for estimation of nitrogen incorporation rates. The goals of the final year are to identify pathways of rapid versus slower turnover and to investigate determination of habitat biomarkers.	FY 01 is to be the closeout year for this project, although the principal investigator has proposed an additional year of funding in FY 02. The total closeout budget over the two years should remain the same as originally proposed for FY 01. Fund.			Fund closeout of this project, including completion of final report. No FY 02 funding for this project will be provided. This study will shed light on the effect of nutrition on the recovery of harbor seals. [NOTE: No work will be conducted at the Alaska SeaLife Center in FY 01.]		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01385	Partnering with NOAA to Quantify and Monitor Environmental Attributes of Kachemak Bay	C. Schoch/ADFG	ADFG	New 1st yr. 1 yr. project	\$11.0	\$0.0	\$11.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	The increasing number of stresses on marine and estuarine ecosystems has challenged scientists and resource managers to find methods for determining temporal rates and spatial extents of ecological responses to changes in environmental conditions. This project will provide the necessary matching funds for the Kachemak Bay National Estuarine Research Reserve to establish a monitoring program of oceanographic environmental attributes in Kachemak Bay. Results of ongoing studies will then be able to link patterns of oceanographic changes to patterns of biodiversity in the marine and estuarine intertidal and subtidal habitats of Kachemak Bay.	This request for one-time matching funds support will help purchase monitoring instruments for the Kachemak Bay National Estuarine Research Reserve. Fund.			Fund revised proposal, which reduces the project's scope to providing matching funds for the purchase of oceanographic instruments that will enable the Kachemak Bay National Estuarine Research Reserve (KBNERR) to begin a long-term monitoring program. Seventy percent of the funds for this purpose are being provided by the National Oceanic and Atmospheric Administration; the Trustee Council's contribution represents the required 30 percent match. The KBNERR will be responsible for maintaining these instruments with non-EVOS funds. Trustee Council contribution to this effort does not indicate the Council's intent to include these sites under GEM (Gulf Ecosystem Monitoring, the Council's long-term research and monitoring program).		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01389	3-D Ocean State Simulations for Ecosystem Applications from 1995-98 in Prince William Sound	J. Wang/UAF	ADFG	Cont'd 2nd yr. 2 yr. project	\$142.5	\$0.0	\$142.5
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	Using the observed data collected from 1995-98 in Prince William Sound and the forcing of tide, coastal current inflow/outflow, freshwater discharge, and wind stress, a 3-D Prince William Sound model developed under the Sound Ecosystem Assessment (SEA, Project /320) will be used to produce a continuous four year, 3-D fields of velocity, temperature, salinity and mixing coefficients for resource managers, fishing industry and biological applications (in SEA, only 1996 physical forcing has been provided). In addition, the interannual variability of Prince William Sound ocean circulation, temperature, and salinity due to interannually variable atmospheric forcing will be studied. This will allow identification of the key environmental parameters to be included in a long-term monitoring program to assist resource managers. In addition, FY 01 funding will rescue the Sound Ecosystem Assessment (SEA, Project/320) database and install it on a new server at the Institute of Marine Science, International Arctic Research Center at the University of Alaska Fairbanks. The new server will serve future modeling studies for the Gulf Ecosystem Monitoring (GEM) program.	This project will refine and apply the Prince William Sound physical model to questions about causes and consequences of physical and biological variability. To accomplish this goal, a large quantity of electronic information needs to be copied from the Prince William Sound Science Center computer system and delivered to the International Arctic Research Center, and this will also provide additional back-up of the SEA (Sound Ecosystem Assessment, Project /320) data archive. The cost of this transfer seems large, and there are questions regarding overdue deliverables from some team members. Nonetheless, investigators are uniquely qualified and their objectives are of the highest priority. Fund.			Fund, including new objective which will purchase a server for the University of Alaska Fairbanks International Arctic Research Center and install on it the SEA (Sound Ecosystem Assessment, Project /320) database and related information. Funding for the new objective (\$79,800) is contingent on completion by the proposer (J. Allen) of previously funded work: Project 99361 video and Project 00414 web presentation. This project is designed to improve understanding of larval herring transport, which is essential for predicting productivity in Prince William Sound and which has been in demand by commercial fishers as well as fisheries managers.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01391	Cook Inlet Information Management/Monitoring System (CIIMMS)	K. Zeiner/ADNR, J. Hock/ADEC	ADNR	Cont'd 3rd yr. 3 yr. project	\$239.0	\$0.0	\$239.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	The Cook Inlet Information Management/Monitoring System (CIIMMS) will provide a wide range of users the opportunity to share and access valuable information and data about the Cook Inlet watershed and Cook Inlet-related activities. CIIMMS potential users include educators, scientists, students, researchers, resource managers, private organizations, and individual citizens. CIIMMS will provide an interactive website for the Cook Inlet community to efficiently and effectively contribute, identify, and access relevant information from a distributed network of providers. The CIIMMS website is at http://www.dec.state.ak.us/ciimms .	Protecting the Trustee Council's substantial investment in CIIMMS requires continuation of the web site beyond the end of this project. The Alaska Department of Natural Resources and the Alaska Department of Fish and Game have committed to this, but have not clearly identified resources for operation and maintenance now and in the future. This project has been thoughtfully executed, with careful attention being paid to the comments of peer reviewers and potential users, and a web site has been developed with great potential for providing access to information about Cook Inlet. This site also could be integrated into the data and information system that will need to be in place for GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term research and monitoring program). The true test of the site will be the continued use it gets, which will be a function of people finding the site dependable and up-to-date. Fund.			Fund. This project aims to improve management of injured and other marine natural resources by facilitating data sharing, resource management, and planning within the Cook Inlet watershed. FY 01 will be the Trustee Council's final contribution to this effort.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01393-BAA	Prince William Sound Food Webs: Structure and Change	T. Kline/PWSSC	NOAA	Cont'd 3rd yr. 3 yr. project	\$119.0	\$0.0	\$119.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	Recent research has shown that the oceanographic conditions connecting the northern Gulf of Alaska with Prince William Sound may affect recruitment and nutritional processes in fishes. Accordingly, food webs are subject to changes in carbon flow occurring between the Gulf of Alaska and Prince William Sound. This project seeks to conduct retrospective analyses of Gulf of Alaska production shifts since the oil spill. These analyses will enable a better understanding of the ecological role of regime shift processes conjectured to be impeding the natural restoration of populations in Prince William Sound affected by the oil spill.	This is the third year of a three-year project to develop a retrospective assessment of carbon sources in the Prince William Sound food web by analyzing stable isotopes in layers of mussel shells. Data was also to be applied to continue validation of the Prince William Sound ECOPATH model (Project /330). The development of the ECOPATH model is complete, so this objective should not be funded for FY 01. Given that a significant amount of the shell data analysis is complete, the proposer should present his preliminary analysis to provide proof of concept. Fund contingent on satisfactory progress in obtaining project objectives in using carbon isotopes in mussel shells.			Fund. This project was deferred pending FY 00 results and a reduced budget that eliminates the ECOPATH objective; results have been satisfactorily reviewed and the budget has been reduced as requested. This project is using carbon and nitrogen stable isotope ratios to confirm the relative trophic status of species within the Prince William Sound ecosystem. This method could be a valuable tool for the Trustee Council's long-term research and monitoring program (GEM, or Gulf Ecosystem Monitoring).		
01396	Alaska Salmon Shark Assessment	L. Hulbert/NOAA	NOAA	Cont'd 2nd yr. 2 yr. project	\$85.0	\$0.0	\$85.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	In FY 01, this project will investigate seasonal salmon shark movements and diet in Prince William Sound and the Gulf of Alaska to determine seasonal fidelity to diet and region. State-of-the-art satellite telemetry transmitters will augment successful applications of the technology demonstrated in FY 00. Seasonal variations in salmon shark diet composition will be described from stomach sample analyses. The project will also synthesize historical salmon shark distribution and abundance in the north Pacific from literature and analysis of bycatch databases. This work will investigate whether evidence of salmon shark population trends are revealed. These inquiries are needed to assess the ecological role of a predominant shark species in the gulf, and the potential impact they could have on other important species -- forage fish, sablefish, salmon, and marine mammals.	This project was funded for FY 00 based on a limited set of objectives and further funding was to be based on successful review of progress in FY 00. Significant progress was made toward understanding salmon sharks and their role in the Prince William Sound ecosystem. Effort in FY 01 should be directed toward: (a) use of satellite tags to track seasonal movements of salmon sharks, determining a relative abundance index, (b) estimating diet and consumption rates over the annual cycle, (c) examining existing data from a variety of sources to determine if there has been an increase in abundance over the last 25 years, and (d) estimating the proportion of the population caught by a survey. The revised Detailed Project Description addresses these objectives. Fund for one additional year only.			Fund revised Detailed Project Description, which addresses the Chief Scientist's recommendations and includes oversight of the project by the Auke Bay Lab. The proposer should seek funds from other sources for continuing this project in FY 02 and beyond. The numbers of sharks observed in Prince William Sound have been increasing in recent years.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01401	Assessment of Spot Shrimp Abundance in Prince William Sound	C. Hughey/ Valdez Native Tribe, C. O'Clair/ NOAA	NOAA	Cont'd 3rd yr. 4 yr. project	\$94.4	\$33.0	\$127.4

Project Abstract

This project will determine whether the spot shrimp population in Prince William Sound is recovering from depletion. FY 00 results (October 1999) are consistent with those of the Alaska Department of Fish and Game annual survey and indicate a cessation in the apparent decline of spot shrimp abundance in western Prince William Sound that had taken place from 1992 to 1998. Evidence of the beginning of recovery of the spot shrimp population, though encouraging, is inconclusive. In FY 01, the project will provide a second estimate of the abundance of spot shrimp, and continue the studies of spot shrimp population structure and reproductive potential, to determine whether the indications of population recovery are real. An added objective in FY 01 is an estimate of recruitment potential through assessment of the relative abundance of juveniles. Project closeout in FY 02 will include providing input into the development of a shrimp management plan with the Alaska Department of Fish and Game.

Chief Scientist's Recommendation

This is the third year of a four-year project. The original justification for the project was based upon a downward population trend for spot shrimp. FY 00 survey results (October 1999) suggest no downward trend; this result is consistent with the Alaska Department of Fish and Game annual survey. A second survey (FY 01, October 2000) will provide additional data to determine if the downward population trend has ceased. The new objective to model growth for spot shrimp is not a priority and should not be funded. Fund revised proposal, which deletes the modeling objective.

Trustee Council Action

Fund revised proposal, which deletes the new objective related to growth modeling. This project 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 01 Approved	FY 02 Estimate	Total FY 01-02
01404	Testing Archival Tag Technology in Alaska Salmon	J. Nielsen/USGS-BRD	DOI	New 1st yr. 2 yr. project	\$75.0		\$75.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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 (150-250mm) and released in Cook Inlet as part of the department's Ship Creek sport-fishing hatchery release. FY 01 will include pilot studies of tag retention, behavior, and growth for coho in captivity. A spring release experiment in the first year will be contingent on the success of the retention study and incorporate timed releases of smolts, 1+, and surveys for early jack recoveries at the Ship Creek weir. 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.	This is an innovative proposal that could contribute to identification of ecologically sensitive areas in Prince William Sound. The goals are well specified and the data could provide a unique perspective on productivity in the sound. Furthermore, the technology, as applied to salmon, has great potential. The revised proposal provides for a pilot tag retention, behavior, and growth study in FY 01 (e.g., hatchery). A release experiment will be considered in FY 02 if the retention study is successful.			Fund revised proposal, which reduces the project's scope to a pilot only as recommended by the Chief Scientist. This project is designed to further test the development and application of archive tag technology, which has great promise for a variety of species. If the pilot study is successfully carried out in FY 01, funding for a release experiment (roughly \$100,000) may be considered in FY 02.		
01407	Harlequin Duck Population Dynamics	D. Rosenberg/ADFG	ADFG	Cont'd 2nd yr. 3 yr. project	\$67.6		\$67.6
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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.	This project is a valuable part of documenting injury and recovery in harlequin ducks. Harlequins appear to be susceptible to oil in nearshore environments and may be good indicators of the lingering effects of the spill. Another year of population survey data (FY 01) will enable a relatively robust long-term monitoring strategy to be designed. Fund.			Fund. This project was deferred pending completion of a power analysis; however, it has now been determined that an additional year of data collection is needed before a power analysis can be performed. FY 01 will be the final year of Trustee Council support for field work. FY 02 will be closeout funds only (preparation of final report, including power analysis). This project is intended to assess 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.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01423	Patterns and Processes of Population Change in Selected Nearshore Vertebrate Predators	J. Bodkin, D. Esler/USGS-BRD, T. Dean/CRA, Inc.	DOI	Cont'd 3rd yr. 4 yr. project	\$505.4		\$505.4
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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 01, sea otter work will include estimation of age-specific survival rates and monitoring of CYP1A expression. 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. [NOTE: This project also requested funds (\$250,000) for FY 03.]	This proposal includes some ongoing components and some new components for FY 01. The continuation of the vital harlequin duck work, including both the field and Alaska Sealife Center components, is justified. The increase in the harlequin principal investigator's time is also well justified. Given the important work on population dynamics derived from collection of sea otter carcasses, the shoreline carcass survey is well justified. Since the sea otter population is unlikely to show a large change in FY 01, the aerial population surveys are a lower priority and should not be funded in FY 01. The measurement of biomarkers of oil exposure in sea otter field surveys needs to be carried out as this is the primary indicator of continuing oil exposure. Experimental dosing of sea otters with oil does not appear justified at this point in the restoration program. A report on the sea urchin component should be prepared as planned in FY 01. Fund revised proposal, which incorporates the above recommendations.			Fund revised proposal, which deletes the captive sea otter component and the sea otter aerial survey component. Funding for sea otter aerial surveys may be considered for FY 02. No funding for FY 03 is being considered at this time. This project is an important extension of the Nearshore Vertebrate Predator project (Project /025) work on two still-injured species, sea otters and harlequin ducks. In FY 01, an objective related to sea otter survival/ CYP1A induction is added and the sea urchin component will conclude with preparation of a final report. [NOTE: Funding includes Alaska SeaLife Center bench fees of \$133,900 (plus \$9,400 in GA for a total of \$141,300).]		
01424	Restoration Reserve	All Trustee Council Agencies	ALL	Cont'd	\$12,000.0	\$12,000.0	\$24,000.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	In recognition of the fact that complete recovery from the oil spill may not occur for decades, the Trustee Council established the Restoration Reserve to hold funds to be used for restoration after the last payment is received from Exxon Corporation in September 2001. A \$12 million deposit in FY 01 would be the eighth deposit into the reserve account and would bring the total in the account to \$96 million. An additional \$12 million deposit in FY 02 would provide a reserve of \$108 million plus interest (roughly \$170 million). On March 1, 1999 the Council approved a spending plan for the future use of these funds and any other unobligated settlement funds.	Proposal not reviewed.			Fund an additional \$12 million deposit into the Restoration Reserve. The reserve will fund (a) restoration activities beyond the time of the final payment from Exxon Corporation, (b) GEM (Gulf Ecosystem Monitoring), the Trustee Council's long-term research and monitoring program, and (c) future habitat protection efforts. [NOTE: This project will be funded outside of the regular FY 01 work plan of research, monitoring, and general restoration projects.]		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01441-CLO	Harbor Seal Recovery: Effects of Diet on Lipid Metabolism and Health	R. Davis/Texas A&M Univ.	ADFG	Cont'd 3rd yr. 3 yr. project	\$93.5	\$0.0	\$93.5

Project Abstract

Ecosystem-wide changes in food availability could be affecting harbor seal population recovery. To better understand the results from field studies of harbor seal health, body condition, and feeding ecology, data is needed for seals on diets that vary in nutritional composition. Working with the Alaska SeaLife Center, this project will determine how fatty acid profiles in the blubber of captive harbor seals change over time during controlled diets of herring and pollock. In addition, the project will assess the aerobic capacity and lipid metabolism of skeletal muscle in harbor seals fed controlled diets and in wild harbor seals in Prince William Sound. The results will enhance understanding of the nutritional role and assessment of dietary fat for harbor seals.

Chief Scientist's Recommendation

FY 01 is the closeout year for this multi-year project, which is ground-truthing a promising monitoring technique that could be used to understand long-term trends in food availability to marine carnivores. Fund originally anticipated number of samples only. While analysis of additional harbor seal tissue samples would add greater power to achieve project objectives, this is a lower priority for the restoration program. Do not fund.

Trustee Council Action

Do not fund additional sample analysis. In August, the Trustee Council approved \$93,500 for analysis of the originally anticipated number of samples and deferred a decision on funding analysis of additional samples (\$38,600) pending availability of funds. It has now been determined that funds are not available within the \$6 million cap set by the Trustee Council. This study is investigating the effect of diet on lipid metabolism and health in harbor seals.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01452-BAA	Assessing Prey and Competitor/ Predators of Pink Salmon Fry	R. Thorne, G. Thomas/PWSSC	NOAA	New 1st yr. 1 yr. project	\$57.6	\$0.0	\$57.6

Project Abstract

Research suggests that macro zooplankton and adult walleye pollock densities are the primary biological forcing variables affecting pink salmon fry survival. A program to make these estimates was initiated in spring 2000 by a partnership of organizations including the Oil Spill Recovery Institute, Sound Emergency Response Vehicle System, and the Alaska Department of Fish and Game. This project will expand this effort to provide data on annual and seasonal variation of predators and food availability for juvenile pink salmon and to interact with Project 01195/Pristane Monitoring, which is studying the use of pristane concentrations in mussels to estimate pink salmon fry survival.

Chief Scientist's Recommendation

The food and predators for juvenile pink salmon in Prince William Sound are important factors for determining the number of adults returning to spawn. This project will perform hydroacoustic surveys in spring in open-water environments of the sound. The data may be useful for historic hindcasting of adult returns once the models initiated during SEA (Project /320, Sound Ecosystem Assessment) are fully developed, but the proposed project will be collecting more spatially intensive data less frequently than was used in the successful proof-of-principle model tested under SEA. It may also be possible to use the data in a multiple-regression model to predict adult returns, but this approach is not yet fully developed either. The third application is to independently test the concepts being developed in Project 01195/Pristane Monitoring. Although Project 01195 samples mussels in nearshore environments where hydroacoustic methods are not quantitative, a more synoptic view of offshore zooplankton and predators nearby might clarify mechanisms that produce pristane in mussels under various conditions of food and predator abundance. Fund for one year only.

Trustee Council Action

Fund revised Detailed Project Description, which addresses the concerns raised by peer reviewers, including modification of the objectives and methods to provide for coordination and integration with Project 01195/Pristane Monitoring. In general, this project will provide data on annual and seasonal variation of predators and food availability for juvenile pink salmon.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01454-CLO	Evidence and Consequences of Persistent Oil Contamination in Pink Salmon Natal Habitats	S. Rice/NOAA	NOAA	Cont'd 2nd yr. 2 yr. project	\$103.2	\$0.0	\$103.2
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	Reports of persistent oil contamination in natal pink salmon streams in Prince William Sound and adverse biological effects at parts per billion oil concentrations stimulated this study in FY 00. Preliminary results demonstrate evidence of continued hydrocarbon contamination in some previously oiled streams. Fry from Prince William Sound and experimentally dosed fish have been collected for examination of a biomarker, cytochrome P4501A. When analyses are complete, data will be inspected for correlation between the biomarker, growth, predator avoidance, and marine survival. These results will be integrated with past research to reexamine the recovery status of pink salmon and their spawning habitat.	This ongoing project will provide valuable information regarding the continued exposure of pink salmon fry to hydrocarbons in the environment by using established biomarkers in a well-designed investigation with field and laboratory components. This is the closeout year for the project. Fund.			Fund project closeout. This project will provide the Trustee Council with the basis for evaluating the recovery status of pink salmon at the stream level, rather than depending on population levels that include hatchery production and many streams with little or no oil-exposure history.		
01455	Gulf Ecosystem Monitoring and Research Program Data System	Restoration Office	ADFG	Cont'd 2nd yr.	\$35.7		\$35.7
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will initiate an ongoing data system for GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term monitoring and research program currently under development). GEM is being designed to monitor the ecosystems of the northern Gulf of Alaska and the adjacent coastal regions for a very long time period. Data collection, archiving, transfer, delivery, and presentation are critical components of GEM. FY 01 funding will be used to hire a data system manager to provide the leadership necessary for developing this essential part of the GEM program.	Data management and archiving are crucial to the long-term development of GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term monitoring and research program). Putting in place, before GEM begins, a system that is capable of storing and accessing the many different data types envisioned is a key to the success of GEM. Fund.			Fund. This project will fund a data systems manager, to be located at the Restoration Office, for GEM (Gulf Ecosystem Monitoring, the Trustee Council's long-term monitoring and research program currently under development). This is expected to be an ongoing function under GEM. Efforts in FY 01 (hiring is expected by June 1, 2001) will focus on system design. Ongoing efforts will include collaboration with Trustee agencies and other data systems as well as data input, linking, and management.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01462-CLO	Effect of Disease on Pacific Herring Population Recovery in Prince William Sound	G. Marty/Univ. of California Davis	ADFG	Cont'd 3rd yr. 3 yr. project	\$86.0	\$0.0	\$86.0
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	The Pacific herring population of Prince William Sound has not recovered from severe population decline in 1993. The two most important diseases in these fish are associated with viral hemorrhagic septicemia virus and the fungus-like organism <i>Ichthyophonus hoferi</i> . Prevalence of <i>Ichthyophonus</i> has been fairly constant since 1994, but virus prevalence has been highly variable. High prevalence of virus and associated ulcers in 1998 was related to decreased biomass and closure of most fisheries in 1999. All Pacific herring fisheries are closed in 2000. To determine if disease is limiting recovery, this project will continue to monitor the two major diseases in Pacific herring in Prince William Sound through spring 2001.	This continues to be a very unique and interesting study that is already the most comprehensive study ever conducted on the pathogen prevalence and potential impact of disease in a wild fish population. Support for FY 01 is appropriate. In the future, each individual herring project is to be evaluated on the level of integration with other herring work on spawning, recruitment, distribution, and population dynamics that is required to fully address the questions of herring productivity (or lack of it) and stock rebuilding. Fund closeout.			Fund closeout (including preparation of final report and manuscripts) of this project. This project is designed to determine whether disease continues to limit recovery of the Prince William Sound herring population. The results of the study so far have provided insight on management of the herring pound fishery. A substantial grant from the National Science Foundation has enabled the researchers to perform complementary analyses and population modeling.		
01468-CLO	FEATS: Fundamental Estimations of Acoustic Target Strength	G. Thomas/PWSSC	NOAA	Cont'd 3rd yr. 3 yr. project	\$5.8	\$0.0	\$5.8
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This small amount of funding in FY 01 will allow for completion of the final report begun under Project 99468. In 1999, this project conducted cage experiments to determine the acoustic strength of herring and sand lance. Obtaining better definitions of target strength was essential to completion of work on two of the Trustee Council's major ecosystem projects, the Sound Ecosystem Assessment (SEA, Project /320) and the Alaska Predator Ecosystem Experiment (APEX, Project /163).	Acoustic target strengths are needed for monitoring Pacific herring and sand lance. This project will provide funding for completion of the final report, which will consist of a manuscript for the peer reviewed literature. Fund.			Fund. This small amount of funding in FY 01 will allow for completion of the final report begun under Project 99468. The final report consists of a manuscript for publication in the peer reviewed literature. The manuscript has been drafted and peer reviewed; funds in FY 01 will support revision and finalization of the manuscript/report.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01476	Effects of Oiled Incubation Substrate on Pink Salmon Reproduction	R. Heintz/NOAA	NOAA	Cont'd 3rd yr. 5 yr. project	\$94.2	\$39.0	\$133.2

Project Abstract

Populations are maintained through successful reproduction; this project is designed to determine if exposure to oil impairs pink salmon reproduction. Under Part A, the ability of the parental generation (P1) to produce offspring (F1) will be measured. The P1 was exposed when they incubated in 1998; the F1 will incubate in clean water beginning in FY 01. Part B extends Part A by measuring the ability of the F1 to produce viable offspring (F2) in 2002. A diminished ability to produce the F2 generation represents a genetic effect transmitted to unexposed generations. Corroborating evidence for parental and genetic effects of oil is increasing. This project will demonstrate the extent of these grave and unanticipated effects of oil pollution. [NOTE: This project also requested funds (\$36,000) for FY 03.]

Chief Scientist's Recommendation

This is the third year of what was to be a three-year project. An extension has been requested based on recent results from a University of Alaska Fairbanks (UAF) study indicating reductions in survival-to-adult for pink salmon whose grandparents had been exposed to oil. The extension would allow replication of the UAF study results with greater statistical power to distinguish between survival of oiled and unoiled groups. Given the substantial prior investment by the Trustee Council in this line of research and the critical nature of the results for interpretation of oil damage, the expansion of this study is justified. The expansion will require funding in FY 02 and FY 03 if the full payoff (genetic effects) is to be realized. Possibility of multi-generational effects is important to clarifying the meaning of recovery in the overall program. Fund.

Trustee Council Action

Fund, including new objectives in Part B related to measuring the ability of the first generation of offspring to itself produce viable offspring. 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. [NOTE: Funding of the new objectives will require \$36,000 in Trustee Council support in FY 03.]

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01478	Testing Satellite Tags as a Tool for Identifying Critical Habitat	J. Nielsen/USGS-BRD	DOI	Cont'd 2nd yr. 2 yr. project	\$26.8	\$0.0	\$26.8

Project Abstract

This small amount of funding will allow for completion of this project, which is assessing and testing the application of satellite archive, pop-up tags on marine fishes of the Gulf of Alaska. Software and tag technology will be adapted and developed for geolocation tracking using light, depth, and bathymetry data from satellite pop-up tags. Tag application and light-geolocation relationships will be tested on live halibut brought into husbandry at the Alaska SeaLife Center and kept under an accelerated solar-shift regime mimicking standard conditions in the gulf. These data will be compared to light and depth readings taken from tags placed on live fish released into their natural habitat and to an array of tags attached to a stationary buoy in the gulf. The effectiveness of light sensors for geolocation, duration of light measurements, and data sequence design will be determined. These developments will assist in applications of this new tag technology in fisheries-independent habitat assessments for the nearshore and pelagic marine environments in the gulf.

Chief Scientist's Recommendation

This was funded as a one-year project in FY 00. However, due to delays in project implementation largely beyond the principal investigator's control, the project will extend into FY 01. It is important that this project be completed. Satellite tag technology would contribute greatly to understanding more about important wide-ranging stocks of fish in the Gulf of Alaska and what is needed for their conservation. Fund.

Trustee Council Action

Fund. This project was scheduled for full implementation in FY 00. However, due to delays in project start-up, a small amount of funding for technician salaries is needed in FY 01 to allow work to be completed; a like amount of funding (roughly \$6,900) will be lapsed from the FY 00 project. This project, which is testing satellite tag technology for its utility in defining critical habitat, is intended to improve understanding of certain stocks of fish in the Gulf of Alaska. [NOTE: Funding includes Alaska SeaLife Center bench fees of \$18,600 (plus \$1,300 in GA for a total of \$19,900).]

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01479	Effects of Food Stress on Survival and Reproductive Performance of Seabirds	J. Piatt/USGS-BRD, A. Kitaysky/Univ. of Washington	DOI	Cont'd 3rd yr. 4 yr. project	\$129.6	\$75.0	\$204.6
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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.	This project is testing using the level of corticosterone, an indicator of physiological stress, as a predictor of productivity and survival in seabirds. The principal investigators are highly qualified as the originators of this method, which is potentially an efficient and cost effective long-term monitoring tool. They have provided a memo that further describes methods for the hormone implant and post-fledging survival experiments, as requested by the reviewers. Fund.			Fund. This project is exploring the use of corticosterone, a biochemical indicator of stress, as a tool to monitor seabird populations.		
01481	Documentary Film on the Oil Spill Impacts on Subsistence Use of Intertidal Resources	C. Kompkoff/Chenega Bay IRA Council, P. Panamarioff/ Ouzinkie Tribal Council	ADFG	Cont'd 2nd yr. 2 yr. project	\$111.8	\$0.0	\$111.8
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will produce a 28 minute documentary film on the impacts of the oil spill on the subsistence use of intertidal resources, including mussels, clams, chitons, and octopus, by residents of two predominantly Alaska Native communities: Chenega Bay in Prince William Sound and Ouzinkie on Kodiak Island. This project will build on two previous subsistence documentaries (projects 96214 and 98274) and will focus on the use of resources in the intertidal, the area hardest hit by oil, and broaden the discussion by bringing in the perspective of the residents of Chenega Bay, the first community directly in the path of the spilled oil, and Ouzinkie, the first Kodiak-area community to see the oil arrive. The documentary will compare the impact the spill has had on the use of intertidal resources in each community as well as the ongoing EVOS restoration efforts to help residents mitigate these impacts.	The Trustee Council has funded two videos on subsistence at another locality (Tatitlek). A similar video would be appropriate for Chenega Bay, where subsistence activities apparently have not recovered and which was the first community directly in the path of the spilled oil. The addition of Ouzinkie on Kodiak Island and comparing/ contrasting community spill impacts will address a range of impact responses. Furthermore, use of intertidal resources is central to Aluutiq culture. Linkages to restoration are plausible. However, this project should receive lower priority than projects with stronger linkages to restoration objectives. Fund, lower priority.			Fund. This project, which is patterned after two previous video projects funded by the Trustee Council (96214/Harbor Seals and 98274/Herring), is designed to contribute to the restoration of intertidal resources and subsistence uses by transmitting local knowledge about these resources to the scientific community and others. A small amount of start-up funding was provided in FY 00 for preproduction activities. Actual production of the video will take place in FY 01.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01492	Were Pink Salmon Embryo Studies in Prince William Sound Biased?	J. Thedinga/NOAA	NOAA	New 1st yr. 2 yr. project	\$62.1		\$62.1
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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. This project will perform a combination of retrospective and experimental studies to determine if estimates of pink salmon embryo survival were accurate or biased by conducting a historical review of past sampling procedures and experimentally determining the ability to discriminate eggs killed by sampling (shock mortality) and previously dead eggs.	This proposal addresses critiques of government-sponsored studies of pink salmon embryo mortality by investigating a possible source of bias: field assessments in oiled streams were earlier than in unoiled streams, increasing the likelihood of egg mortality caused by sampling. The amount of time after egg death necessary for observers to visually detect mortality is a key unknown. If the amount of time is a matter of seconds, the possibility of bias is very high. If the amount of time is a matter of hours, the possibility of bias is remote. The revised proposal will conduct the study in a phased manner. In FY 01, the experimental determination of the sensitivity of pink salmon eggs to sampling stress will be conducted, including determining the time between application of stress and evidence of death. A concurrent field study will be conducted to examine the relationship between run timing and sensitivity to mechanical shock. Based upon study results, further investigation (in FY 02 or beyond) may be warranted. Fund.			Fund revised proposal, which reduces the project's scope in FY 01 as recommended by the Chief Scientist. This project is designed to determine if estimates of pink salmon embryo survival following the oil spill were accurate. At present, 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.		
01513	Exxon Valdez Oil Spill Exhibit: The Continuing Legacy	J. Pfeifferberger/Alaska SeaLife Center	ADFG	New 1st yr. 1 yr. project	\$50.3	\$0.0	\$50.3
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will develop an interactive exhibit "Exxon Valdez Oil Spill: The Continuing Legacy" to inform the public about the current status of wildlife species injured by the spill. It will combine pieces of the existing exhibit "Legacy of an Oil Spill, 10 Years After" with new audio and visual components that will allow easy updating of information as the status of injured species changes over time. This exhibit will be a permanent installation at the Alaska SeaLife Center and will serve as a source of public dissemination to hundreds of thousands of visitors.	This project will revise and expand the existing public education exhibit regarding the Exxon Valdez oil spill into a permanent display at the Alaska SeaLife Center. The project appears feasible, the proposer is qualified, and the display has the potential to reach large numbers of people with current information about the spill. Fund.			Fund. Funding commitment is for FY 01 only -- annual operation and maintenance costs of the exhibit should be the responsibility of the Alaska SeaLife Center. This project will create a permanent exhibit at the heavily visited Alaska SeaLife Center on the resources injured by the oil spill, and will serve the Trustee Council's goal of disseminating information on restoration to the broadest audience possible.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01534	Comparison of Cytochrome P4501A Induction in Blood and Liver Cells of Sea Otters	B. Ballachey, P. Snyder/USGS	DOI	New 1st yr. 1 yr. project	\$19.9	\$0.0	\$19.9
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will sample livers from the sea otters captured under Project /423 for assays of CYP1A and for examination of histopathological changes. Liver CYP1A levels will be compared to those measured in blood from the same individuals. The project will also assay for CYP1A in archived frozen liver samples from sea otters that were oiled and died in 1989, to enable comparison of current levels of CYP1A induction with levels in sea otters that had a known high degree of oil exposure. The results of this project will provide a basis for comparison of cytochrome P4501A induction in sea otters in 1989, in 1996-98, and in 2001, and will help determine if there is a decline in CYP1A levels over time.	This project has the potential of providing a long-term picture of oil exposure in Prince William Sound sea otters from just after the spill up through 2001. If obtained, this could be an important major contribution to our understanding of the spill 's impacts. Fund.			Fund. This project will relate present levels of CYP1A induction in sea otters with levels immediately following the oil spill in order to provide a long-term picture of oil exposure in sea otters since the spill.		
01535	EVOS Trustee Council Restoration Program Final Report	EVOS Restoration Office	ADFG	New 1st yr. 2 yr. project	\$73.5	\$46.8	\$120.3
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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.	The public is owed an accounting of the Trustee Council's activities and the impact of this history on future public policy argues for support of this project. The principal investigator should work closely with those individuals who have been part of the process since its inception. Fund.			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 received. The target date for publication is March 2002.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01538	Evaluation of Two Methods to Discriminate Pacific Herring Stocks along the Northern Gulf of Alaska	T. Otis/ADFG, R. Heintz/NOAA	ADFG	New 1st yr. 2 yr. project	\$10.1	\$47.1	\$57.2
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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.	The Trustee Council has a long-term investment in Pacific herring. The number of herring stocks in Prince William Sound and elsewhere in the northern Gulf of Alaska is fundamental to understanding how the population changes. The Council has previously supported Alaska Department of Fish and Game research which found no significant genetic differences in adult herring spawning in different areas in Prince William Sound. This new proposal will apply two kinds of sophisticated and innovative chemical analyses, elemental composition of otoliths and fatty acid residue patterns from heart tissue, to see if there are regional differences in the origin of herring spawning in different areas. This is a very good exploratory proposal and has been rated high in the review process. Fund.			Fund. 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.		
01543	Evaluation of Oil Remaining in the Intertidal from the Exxon Valdez Oil Spill	J. Short/NOAA	NOAA	New 1st yr. 2 yr. project	\$477.2	\$95.0	\$572.2
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will assess the amount of oil remaining from the oil spill on shorelines within Prince William Sound. FY 01 funding will be requested in two phases. Phase 1 (Oct.-Nov.) produced a sampling design. Phase 2 (Dec.-Sept.) will intensively sample a stratified random sample of shoreline for surface and subsurface oil to estimate length of oiled shoreline, area and volume of oiled sediment, and volume of oil. Approximately 8 kilometers will be sampled by digging more than 8,000 pits to discover and quantify subsurface oil.	This is an extremely well reasoned proposal that addresses an important indicator of recovery from the oil spill. A recent workshop on study designs and objectives identified some significant issues. The project design is being reassessed. Fund contingent on successful review of the Detailed Project Description.			Fund revised Detailed Project Description for Phase 2 (\$454,600 for survey), which has now been reviewed and approved by the Chief Scientist.. Phase 1, \$22,600 for development of the sampling design, was approved by the Trustee Council in August. This project will conduct an assessment of the surface area and volume of shoreline in Prince William Sound still contaminated with Exxon Valdez oil. Sample site selection should consider the interests of local residents, take into account lingering injury, include sites previously found to have significant residual oil, and weigh cost effectiveness. Surveys outside of Prince William Sound are not anticipated -- the Council funded a final comprehensive assessment of oil around Kodiak in FY 95 and along the Kenai and Alaska peninsulas in FY 99.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01550	Alaska Resources Library and Information Services	All Trustee Council Agencies	ADFG	Cont'd	\$129.1		\$129.1
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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.	There is a need for a repository for information generated by the restoration program. Fund.			Fund. The Alaska Resources Library and Information Services (ARLIS) provides an essential service for documents and other materials produced through the EVOS process. The Trustee Council has made a commitment to support one librarian at ARLIS, along with some rent support and subscription/acquisition support, through FY 01. Prior to FY 01, these costs were included in the restoration program's administration budget (Project /100). In FY 01 and beyond, any Council contributions to ARLIS will be reviewed as a project within the annual work plan.		
01551-BAA	Checklist and Distributional Analysis of Marine Algal Species Collected as Vouchers Under Project CH1A	G. Hansen/OSU	NOAA	New 1st yr. 1 yr. project	\$65.8	\$0.0	\$65.8
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	During previous EVOS studies (Project CH1A), intense investigations were carried out on the intertidal algal communities of Prince William Sound, Kenai, Kodiak, and the Alaska Peninsula. As a byproduct of these studies, thorough voucher collections were made of the algal species present in more than 100 sites used for the study. The 7,300 voucher specimens were identified to species, curated, and cataloged, but no money was available at the time for publishing the wealth of information on algal biodiversity and distribution they provided. This project will use these data to prepare regional checklists and biogeographic analyses of the species discovered and finally make available these critical habitat data for restoration and conservation efforts in Alaska.	There is strong justification for conducting this work and publishing the taxonomic key to Alaskan seaweeds derived from the Trustee Council's investment in Project CH1A. As time beyond the spill increases, the opportunity for doing this work will decrease. Fund.			Fund. This project will prepare a manuscript on the occurrence and distribution of marine macroalgae in the spill area, based on data from Project CH1A. Nearly 7,300 voucher specimens collected under Project CH1A are currently held at the herbarium in Juneau, Alaska. The earlier recommendation on this project had been to defer a decision. However, beginning this project now will allow the Project CH1A data to be incorporated into a larger National Science Foundation project already underway by the principal investigator.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01552-BAA	Exchange Between Prince William Sound and the Gulf of Alaska	S. Vaughn/PWSSC	NOAA	Cont'd 2nd yr. 3 yr. project	\$105.7	\$100.6	\$206.3

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 Prince William 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 mooring in Hinchinbrook Entrance to create time series of velocities spanning three years. The mooring will be equipped with a CTD 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

This project is important to understanding the factors controlling the water circulation in Prince William Sound. It is well positioned to take advantage of the Gulf of Alaska GLOBEC programs if they are funded. In FY 01, the principal investigator should continue her efforts to obtain funding for a second mooring in order to allow a mooring to be deployed during August and September, which might be an important time for the exchange of deep water between the Gulf of Alaska and the sound. Fund.

Trustee Council Action

Fund. This project continues data gathering and analysis from the Hinchinbrook Entrance buoy. This information is important to the Trustee Council's long-term research and monitoring program (GEM, Gulf Ecosystem Monitoring).

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01555	Can Stress Hormones be Used as an Indication of Food Availability and Reproductive Performance? An Experimental Approach	R. Lanctot/USGS	DOI	New 1st yr. 1 yr. project	\$18.9	\$0.0	\$18.9
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will complement and enhance Project /479, which is investigating how stress hormone levels (i.e., corticosterone) in adult seabirds relate to local food conditions and indicate the future reproductive health of a colony. This project will (a) test for differences in corticosterone levels between supplementally fed and unfed black-legged kittiwakes that are nesting at one colony, thereby removing any inherent environmental differences present when birds from two colonies are compared, (b) measure changes in corticosterone levels in adults throughout the breeding season, (c) explore the effects of adult gender on corticosterone levels, and (d) evaluate how corticosterone levels relate to an individual's reproductive success and survival, as well as overall productivity of the colony. Funding will support analysis of plasma samples collected in 2000 and preparation of manuscripts.	This is an exciting new area of research that seeks to identify relationships between diet, physiological condition, and the productivity and abundance of various marine birds and mammals. Most of this work to date has been done in the field without controls. Thus, a project that can experimentally compare hormone titers between treatment groups with different food supplies will be useful. If the technique is validated, it will be a valuable tool to assess long-term monitoring strategies of marine birds (and mammals). Fund.			Fund. This project will complement ongoing Trustee Council work (Project /479) by investigating in more detail how baseline levels of corticosterone vary with food availability and breeding state, and whether corticosterone levels are predictive of future reproduction and overwinter survival.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01558	Harbor Seal Recovery: Application of New Technologies for Monitoring Health	S. Atkinson/UAF	ADFG	New 1st yr. 3 yr. project	\$280.2	\$128.4	\$408.6
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	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 (T ₄), triiodothyronine (T ₃), 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. The work will also employ community involvement through the Alaska Native Harbor Seal Commission. 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.	The establishment of normal ranges of endocrine and immune system measures has great potential for monitoring the health of marine mammals in the northern Gulf of Alaska. The use of rehabilitated animals at the Alaska SeaLife Center offers a unique opportunity. Fund.			Fund revised proposal, which addresses the Chief Scientist's concerns (reference animals, stranded pups, comparing pups to adults). This project will employ new technologies at the Alaska SeaLife Center to assess and monitor the health of harbor seals. Funding for FY 03 is not being considered at this time. [NOTE: Funding includes Alaska SeaLife Center bench fees of \$149,600 (plus \$10,500 in GA for a total of \$160,100).]		
01599-CLO	Evaluation of Yakataga Oil Seeps as Regional Background Hydrocarbon Sources in Benthic Sediments of the Spill Area	J. Short/NOAA	NOAA	Cont'd 2nd yr. 2 yr. project	\$10.5	\$0.0	\$10.5
	<u>Project Abstract</u>	<u>Chief Scientist's Recommendation</u>			<u>Trustee Council Action</u>		
	This project will evaluate fluxes of crude oil from terrestrial oil seeps and of particulate coal near Yakataga into the northern Gulf of Alaska to delineate the extent of "natural oil pollution" in the area affected by the oil spill. In FY 01, a final report and manuscript will be prepared.	This project is the closeout of a two year project to more clearly define the sources of background hydrocarbon contamination in the northern Gulf of Alaska, particularly Prince William Sound. The approach, using a combination of physical separations of coal and heavier sediment-associated petroleum hydrocarbons, should yield relatively unequivocal results in parsing the two sources in stream waters from the Yakataga area. The additional analyses to include specific chemical biomarkers should also yield relatively definite information on sources. This is a logical closeout to the project. Fund.			Fund closeout (final report and manuscript) of this project. The project, which is studying whether fauna showing induction of cytochrome-P450 in the spill area are responding to natural oil pollution rather than to residual Exxon Valdez oil, is designed to improve existing interpretations of hydrocarbon sources.		

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01610	Kodiak Archipelago Youth Area Watch	P. Brown-Schwalenberg/CRRRC	ADFG	Cont'd 2nd yr. 3 yr. project	\$61.8	\$61.8	\$123.6

Project Abstract

This project is a collaboration between the Chugach Regional Resources Commission and the Kodiak Island Borough School District to conduct a Youth Area Watch Program. In FY 00, students from Akhiok, Larsen Bay, Old Harbor, Port Lions, Kodiak City, and Karluk participated. In FY 01, the project will expand to two additional communities, Chiniak and Port Lions. Other activities in FY 01 will include: site teacher training in collaboration with the Kodiak College; construction of a web site for students, teachers, administrators, and project scientists to collaborate, share, and coordinate projects, as well as post data; purchase of additional equipment for monitoring activities; and participation by students, teachers, and scientists in the annual science camp held at Afognak.

Chief Scientist's Recommendation

This proposal is for the second year of a three-year project to establish a Youth Area Watch program in the Kodiak Archipelago, and in FY 01 it is proposed that the program expand to two additional communities. A web site will also be constructed. This appears to be a successful application of a popular concept in a new region. Proposal should be revised to show (a) cost-sharing from the Kodiak Island Borough School District to keep budget at originally proposed level (\$61,800), (b) provision of expanded quarterly project reports that include a description of student activities during each quarter, and (c) further justification for the increased equipment budget. Fund contingent on submission of revised proposal.

Trustee Council Action

Fund revised proposal, which addresses the issues raised by the Chief Scientist. As with the Prince William Sound Youth Area Watch (Project \210), on which this project is modeled, Trustee Council funding is to be a contribution to the program and strong financial support from the school district is expected. To reduce costs, the proposer (Chugach Regional Resources Commission) should consider a direct contract between the Kodiak Island Borough School District and the administering Trustee agency (Alaska Department of Fish and Game). This project is designed to involve local youth in restoration projects.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY 01 Approved	FY 02 Estimate	Total FY 01-02
01630	Planning for Long-Term Monitoring and Research Program	Restoration Office	ALL	Cont'd 2nd yr. 3 yr. project	\$263.4		\$263.4

Project Abstract

In March 1999, the Trustee Council earmarked an estimated \$120 million of Restoration Reserve funds for a long-term monitoring and research program in the spill area and adjacent northern Gulf of Alaska. Development of what is now called the Gulf Ecosystem Monitoring and Research (GEM) program was initiated in FY 99 and will continue through FY 02. In FY 00, a draft GEM Science Program (April 2000) was developed and submitted to the National Research Council for review. In FY 01, follow-up on the National Research Council's recommendations on the GEM Science Program will occur. In addition, a draft Monitoring and Research Plan will be finalized in conjunction with spill-area stakeholders, resource managers, and the scientific community. The plan will be coordinated with such other large-scale programs as the U.S. Global Ocean Ecosystem Dynamics (GLOBEC), the North Pacific Marine Science Organization (PICES), and the Coastal-Global Ocean Observing System (C-GOOS), and then delivered for review to the National Research Council. This project will also help develop the *FY 02 Invitation*, which will request proposals for projects to accomplish the transition to GEM. Project 01630 will be accomplished through the combined efforts of the Restoration Office and Chief Scientist.

Chief Scientist's Recommendation

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

Trustee Council Action

Fund an additional \$127,400 for this project (\$136,000 was approved by the Trustee Council in August, as a placeholder while the FY 01 effort was being fleshed out). This project will conduct the planning necessary to carry out the Council's decision to dedicate a minimum of \$120 million of Restoration Reserve funds in support of long-term monitoring and research in the spill area and adjacent northern Gulf of Alaska. The effort in FY 01 will focus on (a) preparation of a draft GEM monitoring and research plan, using experts as writers and reviewers, (b) progress on the database of historic and ongoing monitoring and research in the Gulf of Alaska, and (c) revisions to the draft GEM science program, following interim review by the National Research Council in February 2001.