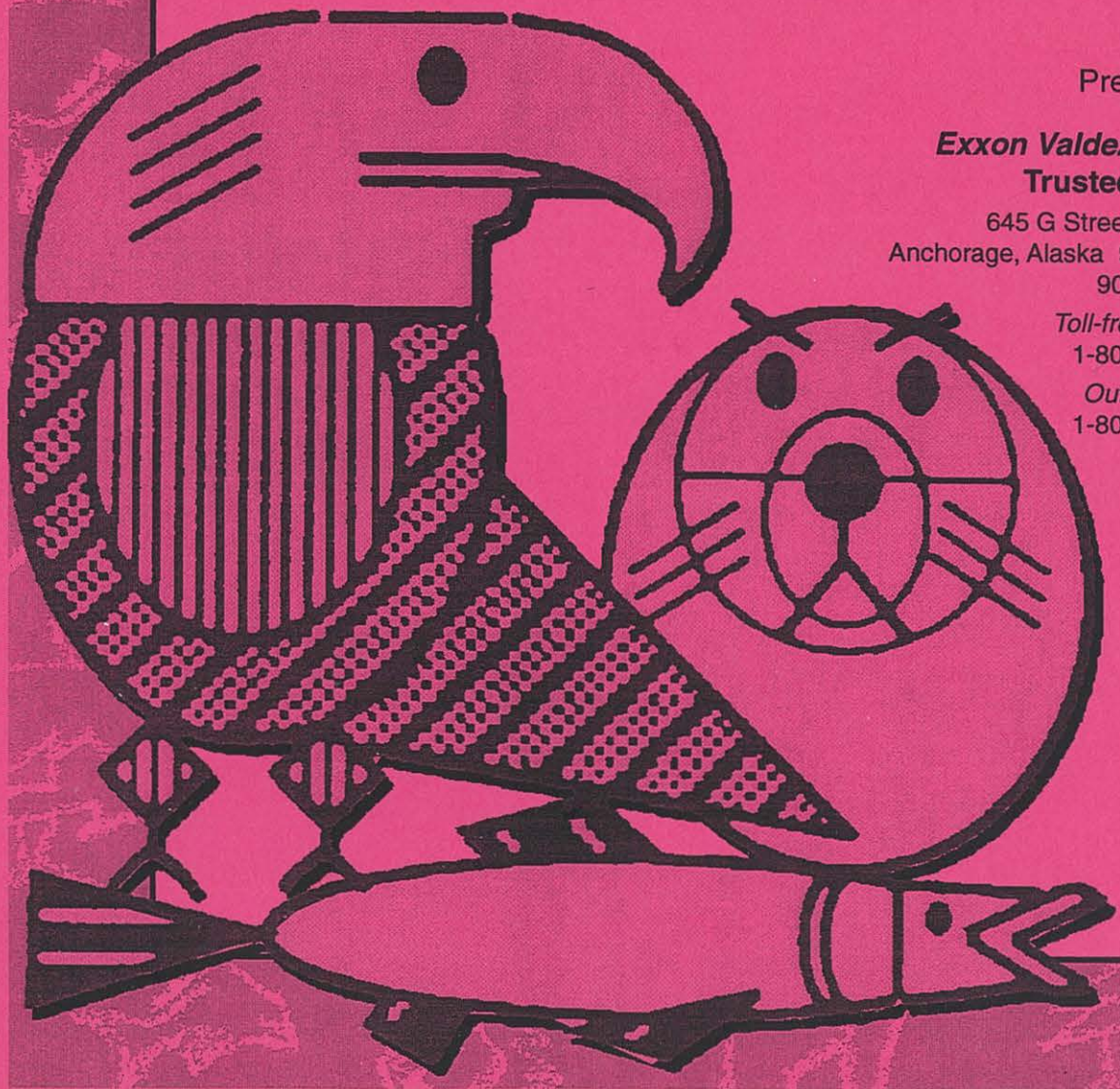
Fiscal Year 1996 Work Plan

December 1995



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December 1995

Prepared for:
***Exxon Valdez* Oil Spill**
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INTRODUCTION

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 restoration activities approved for federal Fiscal Year 1996 (October 1, 1995 through September 30, 1996).

Background

In 1991 the U.S. District Court approved a settlement of a lawsuit concerning the 1989 *Exxon Valdez* oil spill. The terms of the civil settlement required Exxon Corporation to pay the United States and the State of Alaska $900 million over ten years to restore the resources injured by the spill, and the reduced or lost services (human uses) they provide. Under the court-approved terms of the settlement, a Trustee Council of three federal and three state members was designated to administer the restoration fund and to restore the resources and services injured by the spill. According to the settlement:

- Restoration funds must be used "... for the purposes of restoring, replacing, enhancing or acquiring the equivalent of natural resources injured as a result of the Oil Spill or the reduced or lost services provided by such resources..."

- Restoration funds must be spent on restoration of natural resources in Alaska unless the Trustee Council unanimously agrees that spending funds outside the state is necessary for effective restoration.

- All decisions made by the Trustees, such as a decision to spend restoration funds, must be unanimous.

Since the 1991 settlement, the Trustee Council has been working to restore the resources and services injured by the oil spill. In November 1994 the Council adopted the *Exxon Valdez Oil Spill Restoration Plan* to guide the restoration effort. To be eligible for funding, proposals must be consistent with the policies in the *Restoration Plan* and must be designed to achieve the recovery objectives for injured resources and services.

The *Restoration Plan* outlines a comprehensive, balanced approach to the restoration of damaged resources and services. This approach includes the following basic elements:

- Monitoring and Research;
- General Restoration;
- Habitat Protection and Acquisition; and
- Restoration Reserve.

Resources and Services Injured by the Spill

Table 1 lists the resources and services injured by the spill. For biological resources, the table includes those resources for which scientific research has demonstrated a population-level injury, or a continuing sublethal or chronic effect.

Restoration activities must address one or more resources or services identified in Table 1. They may address other resources or services if new scientific or local knowledge shows that other resources or services experienced a population-level injury or continuing chronic effect. In addition, restoration actions may address resources not listed in Table 1 if these activities will benefit an injured resource or service. For example, it may be permissible to focus activities on a resource that is not listed in Table 1 if the activities will help subsistence or commercial fishing activities or are a necessary part of a research proposal designed to help understand the injuries to a resource identified in the table.

Table 1. Resources and Services Injured by the Spill
The table includes only population-level and continuing sublethal injuries.

INJURED RESOURCES			Lost or Reduced SERVICES
Biological Resources		Other	
Recovering Bald eagle Black oystercatcher Intertidal organisms (some) Killer whale Mussels Sockeye salmon (Red Lake) Subtidal organisms (some)	**Not Recovering** Common murre Harbor seal Harlequin duck Intertidal organisms (some) Marbled murrelet Pacific herring Pigeon guillemot Pink salmon Sea otter Sockeye salmon (Kenai & Akalura systems) Subtidal organisms (some)	Archaeological resources Designated wilderness areas Sediment	Commercial fishing Passive uses Recreation and Tourism including sport fishing, sport hunting, and other recreation uses Subsistence
Recovery Unknown Clams Common Loon Cutthroat trout Dolly Varden Kittlitz's murrelets River otter Rockfish			

Trustee Council scientists are reviewing recommendations to add resources to the table. They are also in the process of updating the status of injured resources using information from 1994 and 1995. A revised table is expected to circulated for public review in February as part of the Invitation to Submit Restoration Projects for Federal Fiscal Year 1997.

Financial Summary

In the civil settlement, Exxon Corporation agreed to pay the United States and the State of Alaska $900 million over ten years to restore the resources and services injured by the spill. From these payments approximately $480 million has been authorized as of December 1995 for research, monitoring, general restoration, habitat protection, reimbursements required by the civil settlement, and deductions. The Trustee Council has also allocated $36 million to the Restoration Reserve.

Past and estimated future uses of the civil settlement fund as of December 1995 are outlined in Table 2. Future costs in the table are estimates made for planning purposes. The Trustee Council members will base actual funding decisions on their examination of what is necessary for restoration at that time.

Table 2. Past and Estimated Future Uses of the Civil Settlement Fund
as of December 1995

Damage Assessment (incl. litigation & cleanup)			**$ 214 Million**	
(1) Reimbursements to govts:		$ 173.7 million		
(2) Reimbursements to Exxon:		$ 39.9 million		
Habitat Protection			**$ 375 Million**	
Large- & Small-parcel Acquisitions (including past and anticipated future purchases, and support costs)				
Restoration Reserve			**$ 108 Million**	(plus interest)
FY 94 & FY 95:		$ 24.0 million		
FY 96:		$ 12.0 million		
Anticipated future:		$ 72.0 million		
Public Information, Science Mgmt, & Admin.			**$ 35 Million**	
Past Authorizations:		$ 21.8 million		
FY 92	$ 5.1			
(3) FY 93	$ 4.1			
FY 94	$ 4.9			
FY 95	$ 4.3			
FY 96	$ 3.4			
Estimated Future:		$ 13.2 million		
Research, Monitoring, and General Restoration			**$ 180 Million**	
Past Authorizaitons:		$ 105.7 million		
FY 92	$ 14.1			
(3) FY 93	$ 11.2			
FY 94	$ 18.0			
FY 95	$ 19.2			
FY 96	$ 18.2			
Alaska SeaLife Ctr	$ 25.0			
Estimated Future:		$ 74.7 million		
Total			**$ 912 Million**	
Exxon Payments		$ 900.0 million		
Accumulated Interest less court fees		$ 12.0 million		

Notes for the table.

(1) Reimbursements to governments is reduced by $2.7 million because that amount of the reimbursement to the state government was for the FY 92 work plan.
(2) Deduction by Exxon Corporation for cleanup activities after January 1, 1992.
(3) FY 93 was a seven-month fiscal year to transition from the oil spill year to the federal fiscal year.

The Work Plan Process

This section describes the process used to develop the FY 96 Work Plan.

Restoration Workshop for Review and Planning. A Restoration Workshop was held in January 1995 to review previous years' work and analyze restoration needs for the future. More than 120 people participated, including individuals conducting restoration projects, independent peer review scientists, and members of the public.

Invitation to Submit Projects. Based in large part on the workshop, the *Invitation to Submit Restoration Projects for Federal Fiscal Year 1996* was developed and distributed in March 1995. The *Invitation* asked individuals, private industry, government agencies, and other interested parties to submit ideas and proposals for restoration work in FY 96. The deadline to submit proposals was May 1, 1995.

Review of Proposals. One hundred and twenty-one projects totalling almost $35 million were submitted in response to the *Invitation.* All projects received independent scientific review coordinated by the Trustee Council's Chief Scientist. They were also reviewed by agency staff and the Public Advisory Group.

Draft Work Plan. On the basis of these reviews, the Executive Director developed a preliminary recommendation for public review and comment in the *Draft FY 96 Work Plan.*

Public Review. The *Draft FY 96 Work Plan* was distributed for public comment in late June 1995. The public comment period closed August 4, 1995. The Public Advisory Group reviewed the draft work plan at a meeting in late July. In addition to the public review, many proposals underwent further technical, budget, policy, and legal review.

Final Executive Director's Recommendation. Based on public comments on the *Draft FY 96 Work Plan,* resolution of outstanding issues, and further review, the Executive Director made a final recommendation to the Trustee Council in mid-August.

Trustee Council Decision. On August 25, 1995, the Trustee Council approved projects totalling $13.7 million, and deferred projects that required further review. At the August meeting, the Trustee Council also recommended a target of $18 million for FY 96 monitoring, research, and general restoration projects.

Following the August meeting, the Chief Scientist and Trustee Council staff conducted additional technical review sessions to review most of the projects deferred from August. The sessions allowed detailed discussion of FY 95 results and FY 96 proposals by principal investigators and expert scientific reviewers.

Using the results of those reviews and additional public comment, on December 11, 1995, the Trustee Council authorized additional monitoring, research and general restoration projects totalling $4.5 million. December's action brought the FY 96 authorization total to approximately $18.2 million for these projects.

Where to go for More Information

Information about Individual Proposals. This document contains only summary information about each FY 96 project. The *Supplement to the Final Fiscal Year 1996 Work Plan: Detailed Project Descriptions (December 1995)* contains detailed project descriptions for each of the approved fiscal year 1996 projects. The document is very large and limited copies are available from the Restoration Office. Copies have been sent to libraries in the spill area and elsewhere in Alaska. If you would like a copy of the project description for one or more specific projects, contact the Restoration Office.

Information about Long-term Work Plan Needs. If you would like a more detailed overview of the individual clusters of work plan projects, please call the Restoration Office and ask for a copy of the *Draft Restoration Program: FY 96 and Beyond* (March 1995). An updated copy of this document is expected to be distributed in February 1996.

Information about the Restoration Program in General: Requirements, Policies, and Objectives. Please call and ask for a copy of the *Exxon Valdez Oil Spill Restoration Plan* (November 1994).

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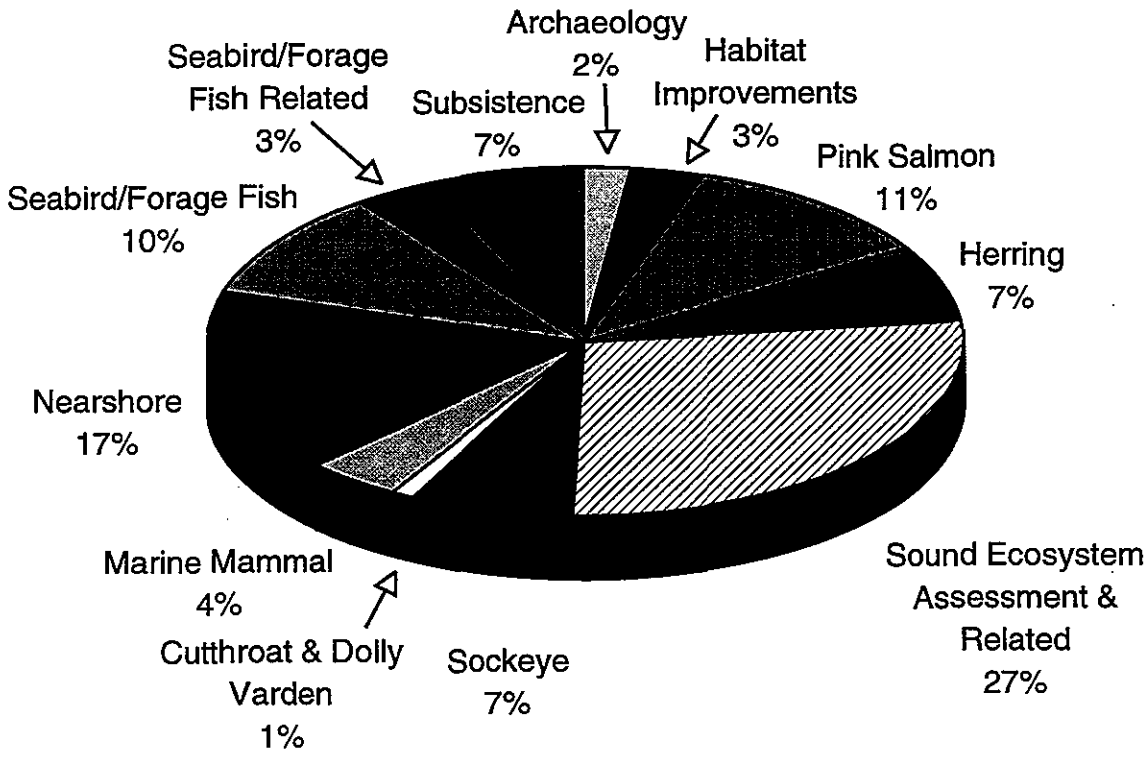
Summary of FY 96 Projects

In May 1995 the Trustee Council received 121 research, monitoring, and general restoration proposals requesting funding for FY 96. In August and December 1995, the Trustee Council authorized sixty-one projects for FY 96. These projects total $18.2 million. The Trustee Council also authorized $3.4 million for Administration, Public Information, and Science Management, and authorized the third $12 million payment to the Restoration Reserve. The chart shows the amount of funds that the Trustee Council authorized by restoration cluster.

Figure 1. Funding Distribution by Restoration Cluster.



Individual projects are listed in Table 3 on the following pages. The table shows the expected cost of completing projects approved in FY 96. The totals on the last page of the table show the FY 96 and estimated future-year cost of all research, monitoring, and general restoration projects funding this year. The total cost of these projects is $18.2 million in FY 96. If estimates of next year's costs are accurate, at least $13.2 million may be needed to continue this year's projects in FY 97.

Table 3. FY96 Projects

Project Number	Project Title	FY 96 and Estimated Future Costs FY 96	FY 97	FY 98	FY 99 +	Total 96+
Pink Salmon		**$2,017.5**	**$1,268.5**	**$775.2**	**$163.8**	**$4,225.0**
96076	Effects of Oil on Straying and Survival	$393.8			$0.0	$393.8
96139A1	Little Waterfall Barrier Bypass Improvement	$55.0	$35.0	$15.0	$0.0	$105.0
96139A2	Port Dick Spawning Channel	$230.5	$37.0	$23.2	$30.0	$320.7
96139C1	Montague Riparian Rehabilitation Monitoring	$9.7	$0.0	$0.0	$0.0	$9.7
96186	Coded Wire Tag Recoveries	$254.9	$260.5	$260.5	$85.0	$860.9
96188	Otolith Thermal Mass Marking	$93.2	$100.5	$100.5	$48.8	$343.0
96190	A Linkage Map for the Pink Salmon Genome	$167.7	$250.0			$417.7
96191A	Oil-Related Embryo Mortalities	$474.6	$407.0	$246.0	$0.0	$1,127.6
96191B	Injury to Salmon Eggs	$159.6	$0.0	$0.0	$0.0	$159.6
96196	Genetic Structure of Pink Salmon	$178.5	$178.5	$130.0	$0.0	$487.0
Herring		**$1,323.0**	**$930.6**	**$708.7**	**$0.0**	**$2,962.3**
96074	Herring Reproductive Impairment	$140.0	$0.0	$0.0	$0.0	$140.0
96162	Disease Affecting Declines of Herring Populations	$635.0	$510.6	$461.7	$0.0	$1,607.3
96165	Genetic Discrimination of PWS Populations	$103.9	$120.0	$97.0	$0.0	$320.9
96166	Herring Natal Habitats	$444.1	$300.0	$150.0	$0.0	$894.1
SEA Plan and Related Projects		**$4,648.2**	**$3,685.0**	**$2,685.0**	**$0.0**	**$11,018.2**
96195	Pristane Monitoring	$114.8	$85.0	$85.0	$0.0	$284.8
96320	Sound Ecosystem Assessment (SEA)	$4,533.4	$3,600.0	$2,600.0		$10,733.4
Sockeye Salmon		**$1,286.2**	**$391.0**	**$0.0**	**$0.0**	**$1,677.2**
96048	Historical Analysis of Affected Sockeye	$116.9	$0.0	$0.0	$0.0	$116.9
96255	Kenai River Sockeye Salmon	$307.0	$100.0	$0.0		$407.0
96258A	Sockeye Salmon Overescapement	$596.6	$150.0	$0.0	$0.0	$746.6
96259	Coghill Lake Sockeye Salmon	$265.7	$141.0	$0.0	$0.0	$406.7
Cutthroat and Dolly Varden		**$229.6**	**$200.0**	**$100.0**	**$0.0**	**$529.6**
96043B	Monitoring Habitat Improvements Structures	$29.6				$29.6
96145	Cut & Dolly: Anadromous & Resident Forms	$200.0	$200.0	$100.0	$0.0	$500.0
Marine Mammals		**$812.8**	**$687.3**	**$275.1**	**$25.0**	**$1,800.2**
96001	Condition and Health Status of Harbor Seals	$214.1	$192.3	$48.1	$0.0	$454.5
96012A	Comprehensive Killer Whale Investigation	$101.0				$101.0
96064	Monitoring, Habitat Use, & Trophic Interactions of Harbor Seals	$347.3	$347.0	$100.0	$25.0	$819.3
96170	Isotope Ratio Studies of Marine Mammals	$150.4	$148.0	$127.0	$0.0	$425.4

Table 3. FY96 Projects

Project Number	Project Title	FY 96 and Estimated Future Costs FY 96	FY 97	FY 98	FY 99 +	Total 96+
Nearshore Ecosystem Projects		**$2,989.2**	**$1,869.3**	**$1,789.4**	**$920.0**	**$7,567.9**
96025	Nearshore Vertebrate Predators	$1,859.9	$1,669.4	$1,669.4	$450.0	$5,648.7
96027	Kodiak Archipelago Shoreline Assessment	$39.8	$0.0	$0.0	$0.0	$39.8
96086	Herring Bay Monitoring and Restoration	$173.0	$0.0	$0.0	$0.0	$173.0
96090	Mussel Bed Restoration and Monitoring	$205.1	$0.0	$0.0	$0.0	$205.1
96106	Subtidal Monitoring: Eelgrass	$253.1	$0.0	$0.0	$0.0	$253.1
96161	Differentiation & Interchange of Harlequin Populations in North Pacific Region	$81.1	$78.9	$0.0	$0.0	$160.0
96290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	$116.1	$121.0	$120.0	$470.0	$827.1
96427	Harlequin Duck Recovery Monitoring	$261.1				$261.1
Seabird/Forage Fish and Related Projects		**$2,411.0**	**$1,951.0**	**$1,834.6**	**$458.5**	**$6,655.1**
96031	Productivity Index to Monitor Murrelets	$77.6	$50.0	$39.9	$0.0	$167.5
96038	Publication of Seabird Restoration Workshop	$22.2	$0.0	$0.0	$0.0	$22.2
96101	Removal of Introduced Foxes From Islands	$8.4	$0.0	$0.0	$0.0	$8.4
96142	Status and Ecology of Kittlitz's Murrelet	$168.7				$168.7
96144	Common Murre Population Monitoring	$70.5	$125.3	$44.0	$458.5	$698.3
96159	Surveys to Monitor Marine Bird Abundance	$262.9	$25.0			$287.9
96163	APEX: Apex Predator Ecosystem Experiment	$1,800.7	$1,750.7	$1,750.7		$5,302.1
Subsistence		**$1,352.2**	**$1,226.0**	**$957.5**	**$1,594.8**	**$5,130.5**
96009D	Survey of Octopuses in Intertidal Habitats	$142.3	$40.9	$0.0	$0.0	$183.2
96052	Community Involvement/Traditional Knowledge	$271.0	$250.0	$250.0	$1,000.0	$1,771.0
96127	Tatitlek Coho Salmon Release	$26.6	$15.9	$15.9	$15.9	$74.3
96131	Chugach Native Region Clam Restoration	$274.9	$413.6	$417.4	$417.4	$1,523.3
96210	PWS Youth Area Watch	$115.0	$100.0	$100.0	$0.0	$315.0
96214	Documentary, Subsistence Seal Hunting	$77.4	$0.0	$0.0	$0.0	$77.4
96220	Eastern PWS Wildstock Salmon Habitat Rest.	$92.0	$115.0	$12.0	$0.0	$219.0
96222	Chenega Bay Salmon Restoration	$16.1	$56.4	$0.0	$0.0	$72.5
96225	Port Graham Pink Salmon Subsistence	$95.3	$83.1	$77.2	$161.5	$417.1
96244	Community Based Harbor Seal Management	$128.5	$100.0	$85.0	$0.0	$313.5
96256	Columbia & Solf Lakes Sockeye Salmon	$60.8				$60.8
96272	Chenega Chinook Release Program	$52.3	$51.1	$0.0	$0.0	$103.4

Table 3. FY96 Projects

Project Number	Project Title	FY 96 and Estimated Future Costs FY 96	FY 97	FY 98	FY 99 +	Total 96+
Archaeology		**$504.2**	**$195.0**	**$195.0**	**$135.0**	**$1,029.2**
96007A	Archaeological Index Site Monitoring	$145.1	$135.0	$145.0	$135.0	$560.1
96007B	Site Specific Archaeological Restoration	$78.4	$0.0	$0.0	$0.0	$78.4
96149	Archaeological Site Stewardship	$74.4	$60.0	$50.0	$0.0	$184.4
96154	Comprehensive Community Plan for Restoration of Archaeological Resources	$206.3				$206.3
Reducing Marine Pollution		**$28.3**	**$0.0**	**$0.0**	**$0.0**	**$28.3**
96115	Sound Waste Management Plan	$28.3				$28.3
Habitat Improvements		**$560.6**	**$800.0**	**$600.0**	**$0.0**	**$1,960.6**
96180	Kenai Habitat Restoration & Recreation Enh.	$560.6	$800.0	$600.0	$0.0	$1,960.6
Information Support		**$42.0**	**$0.0**	**$0.0**	**$0.0**	**$42.0**
96507	EVOS Symposium Publication	$42.0	$0.0	$0.0	$0.0	$42.0
Total: Monitoring, Research & Gnrl Restorat'n :		**$18,204.8**	**$13,203.7**	**$9,920.5**	**$3,297.1**	**$44,626.1**
Public Information, Science Mgmt, and Administration		**$3,439.6**	**$3,200.0**	**$2,800.0**	**$7,200.0**	**$16,639.6**
Habitat Acquisition and Protection Support		**$2,160.9**				
Total: All Projects:		**$23,805.3**	**$16,403.7**	**$12,720.5**	**$10,497.1**	**$61,265.7**

Research, Monitoring, and General Restoration Projects

This section provides an overview of the Fiscal Year 1996 Work Plan by restoration cluster.

Pink Salmon

The pink salmon program has four components as described below. Most are well underway and are expected to be complete within a few years.

THE SOUND ECOSYSTEM ASSESSMENT (SEA): a multi-year ecological investigation of the factors controlling populations of Prince William Sound pink salmon and herring is described on page 12.

TOXIC EFFECT OF OIL ON PINK SALMON. After the oil spill, research documented that pink salmon eggs in oiled streams were dying at higher rates than in unoiled streams. By 1994 and 1995, the monitoring showed that the level of egg mortalities had returned to a level that was not statistically different than that of the unoiled streams. Monitoring is expected to continue until egg mortalities in oiled and unoiled streams are not significantly different for two years for each of the odd- and even-year runs.

- Monitor egg mortality of wild pink salmon (96191A).
- Determine whether mortality is the result of genetic injury; that is, determine whether the original injury caused genetic damage that is passed to subsequent generations (96191B, 96076);
- Determine whether oiling causes pink salmon to increase their natural rate of straying or results in decreased marine survival (96076).

STOCK SEPARATION AND MANAGEMENT. Provide better information for use by fishery managers to protect injured pink salmon runs that might otherwise be overharvested. Fishery managers use the information to set harvest limits, locations, and timing to concentrate commercial harvest on hatchery or uninjured wild runs in order to protect injured wild stocks.

- Marking Salmon — Coded Wire Tag & Otolith Thermal Marking (96186, 96188).
- Genetics and Stock Structure Investigations (96190, 96196).

SUPPLEMENTATION. Other supplementation projects are described in the subsistence cluster, page 18.

- Construct and monitor structures to enhance wild pink salmon production (96139A1, 96139A2, 96139C1).

COST (Pink Salmon)

		Authorized for FY 96	Estimated Total thru 2002
Toxic Effect of Oil		$1,028,000	$1,681,000
Stock Separation and Management		$694,300	$2,108,600
Supplementation		$295,200	$435,400
	Total:	$2,017,500	$4,225,000

Pacific Herring

The herring biomass in Prince William Sound declined by more than 75 percent from the record level in 1992 of over 100,000 tons. This precipitous decline was first observed in the spring of 1993 and continued during 1994 and 1995. The Prince William Sound herring fishery was curtailed in 1993 and has not opened since that time. The herring program focuses on investigating the causes of the crash and prospects for recovery, and on providing management information to help fishery managers protect injured stocks.

THE SOUND ECOSYSTEM ASSESSMENT (SEA): a multi-year ecological investigation of the factors controlling populations of Prince William Sound pink salmon and herring is described on page 12.

REPRODUCTIVE IMPAIRMENT. Close out research to determine if exposure to oil caused decreased reproduction or genetic damage, as major objectives have been accomplished (96074).

GENETIC STOCK IDENTIFICATION. Provide information about the number and distribution of stocks of herring to fishery managers to help them focus the fishery on uninjured populations (96165).

HERRING DISEASE. Study the causes and impact of a virus and a fungus that have become common in PWS herring populations. The project is also investigating the hypothesis that oil-induced stress is linked to the disease outbreaks and population decline. (96162).

HERRING NATAL HABITATS. Estimate the biomass of all spawning herring in Prince William Sound. Develop a management tool to be taken over by Alaska Department of Fish and Game (96166).

COST (Pacific Herring)

		Authorized for FY 96	Estimated Total thru 2002
Close out: Herring Reproductive Impairment		$140,000	$140,000
Herring Genetic Stock Identification		$103,900	$320,900
Herring Natal Habitat		$444,100	$894,100
Herring Disease		$635,000	$1,607,300
	Total:	$1,323,000	$2,962,300

Sound Ecosystem Assessment (SEA Program)

The SEA Program is a multi-year ecological investigation of the factors controlling populations of Prince William Sound pink salmon and herring. It began in FY 94 and will likely continue through FY 98.

SEA PROGRAM. The SEA Program is designed to obtain an understanding of the mechanisms that influence levels of adult production for pink salmon and herring in PWS by investigation of the early life stages of these species. The research goals for the program are:

- ***Acquire an ecosystem-level understanding of processes*** that interact to maintain the production of pink salmon and herring within natural limits of variability.

- ***Use this new information to develop improved predictors*** of annual levels of pink salmon and herring production. The information will help forecast pink salmon and herring responses to both natural and human disturbances, including fisheries management, enhancement, and restoration.

- ***Establish a database*** describing the status of the ecosystem relative to pink salmon and herring as an information source for improving the effectiveness of management, enhancement, and restoration of these and other resources.

RELATED PROJECT. One related project complements SEA Program goals. Project 96195, Pristane Monitoring in Mussels and Predators of Juvenile Pink Salmon and Herring, will provide an innovative measure of marine productivity, thus allowing improved predictions about fisheries productions and harvest levels.

COST

		Authorized for FY 96	Estimated Total thru FY 98
SEA Program		$4,533,400	$10,733,400
Related Project		$114,800	$284,800
	Total:	$4,648,200	$11,018,200

KENAI/SKILAK SOCKEYE. Commercial fishing for sockeye salmon in 1989 was curtailed in Upper Cook Inlet. As a result, there were higher than usual returns (overescapement) of spawning fish to the Kenai/Skilak lake systems. Research indicates that the overescapement reduced the nursery capability of Kenai and Skilak lakes.

Most of the fish spawned in 1989 returned as adults in 1995. The number of returning adults per 1989 spawner was significantly lower than usual. However, fishery managers were able to manage the fishery so that escapement goals were met. This ability was due large in part to information provided by Project 96255.

- ***Stock Separation and Management.*** Funding for continuation of the genetic stock identification technique is at a reduced level in FY 96 which reflects the beginning of a transition of responsibility to ADF&G. The project has developed and implemented techniques used to identify the portion of the Upper Cook Inlet commercial catch that comes from different sockeye runs. This information allows fishery managers to concentrate the fishery on uninjured sockeye runs (96255).

- ***Research.*** Complete work on the Kenai River in the next two years (96258A). Synthesize existing information on sockeye overescapement, including for the Chignik Lake system which has not been studied since the large escapement in 1989 (96048). The project will help resolve questions about the geographic extent and mechanism of the spill-related overescapement injury.

- ***Habitat Improvements, Protection, and Acquisition.*** The Trustee Council is providing significant funds for habitat protection and improvements along the Kenai River. (See Habitat Improvements, page 20; and Habitat Protection and Acquisition, page 23.) Funding for these activities is expected to continue over the next few years and will result in an important and long-lasting increase in the level of protection afforded the Kenai River habitat.

KODIAK SOCKEYE SALMON. Overescapement also affected the productivity of the Red, Frazer, Akalura, and Afognak lake systems in the Kodiak Archipelago. The monitoring program for these lakes is being closed out in FY 96 because the mixed-stock fishery in waters offshore of the lakes greatly complicates future restoration efforts for these lakes (Kodiak portion of Project 96258A).

SUPPLEMENTATION. FY 96 is the fourth year of a five-year program to fertilize Coghill Lake to provide replacement fish for the sport and commercial fishery in Prince William Sound (96259).

COST (Sockeye Salmon)

		Authorized for FY 96	Estimated Total thru 2002
Research & Management Information		$1,020,500	$1,270,500
Supplementation		$265,700	$406,700
	Total:	$1,286,200	$1,677,200

Cutthroat and Dolly Varden Trout

Prince William Sound is the northern and western limit of the cutthroat trout's range, and the resource does not exist elsewhere in the spill area. The cutthroat stocks known to exist within the Sound are few, rarely more than 1,000 individuals, and are geographically isolated from each other. Studies conducted in 1989, 1990, and 1991 indicated that cutthroat and Dolly Varden trout growth rates and adult sizes were less in oiled than in unoiled areas.

Past restoration projects have emphasized supplementation of wild stocks to augment their small populations and thus their safety in the face of spill-related or natural stresses. In FY 96, the program focuses on finishing and monitoring habitat improvements, and on research on life history to enhance management of injured populations.

SUPPLEMENTATION. Finish construction of in-stream habitat improvements begun in 1994, and monitor them to determine their physical and biological success (96043B).

RESEARCH AND MONITORING. Implement a research project (96145) to provide basic information about the relationship between resident and anadromous forms of cutthroat and Dolly Varden Trout. The research may clarify the nature of previously documented injuries and suggest future management improvements.

COST

		Authorized for FY 96	Estimated Total thru 2002
Supplementation		$29,600	$29,600
Research and Monitoring		$200,000	$500,000
	Total:	$229,600	$529,600

Marine Mammals

Understanding long-term declines in harbor seals, as well as factors presently limiting recovery, is fundamental to restoration of oil spill injuries. Indications from FY 95 are that the prespill decline in harbor seals is continuing in Prince William Sound. For killer whales, recent information indicates that there are as many or more killer whales in Prince William Sound as there were before the spill. However, one pod of whales, the AB pod, is missing individuals which may have been killed by the spill and the AB pod may never recover to its prespill numbers.

FACTORS LIMITING RECOVERY OF HARBOR SEALS. Conduct research into probable factors limiting recovery of harbor seals, particularly as these factors affect the survival of juveniles. Possible factors include food limitation, disease, and mortality caused by humans, including incidental take and subsistence harvest. This research is accomplished by a group of projects that will be completed in FY 98 (96001, 96064, and 96170).

CLOSE OUT THIS EPISODE OF MONITORING KILLER WHALES. Killer whales in Prince William Sound have been monitored every year since the spill. FY 96 funding will be used to complete past work and continue limited monitoring of the AB pod (96012A). The need for additional monitoring is unclear and will be evaluated when projects are submitted in FY 97.

OTHER HARBOR SEAL PROJECTS. Other projects concerning harbor seals are discussed in the section describing subsistence.

COST (Marine Mammals)

		Authorized for FY 96	Estimated Total thru 2002
Factors Limiting Recovery of Harbor Seals		$711,800	$1,699,200
Killer Whale Monitoring		$101,000	$101,000
	Total:	$812,800	$1,800,200

Nearshore Ecosystem Projects

This cluster of projects addresses sea otters, river otters, harlequin ducks, pigeon guillemots, black oystercatchers, mussels, clams, and other intertidal/subtidal organisms. Also included in this section are projects that monitor the fate and persistence of oil.

RECOVERY OF NEARSHORE VERTEBRATE PREDATORS. Project 96025 is one of the restoration program's three ecosystem studies. The study is designed to determine whether or not populations of target species are recovering, isolate processes constraining recovery, and identify potential activities to facilitate recovery. Four nearshore vertebrate predator species and their primary prey are being studied. The predators are sea otters, river otters, harlequin ducks, and pigeon guillemots. The prey are mussels, clams, sea urchins, and crabs for sea otters and harlequin ducks, and nearshore benthic fishes for river otters and pigeon guillemots.

MONITOR RECOVERY OF INTERTIDAL AREAS. The intertidal studies close out previous monitoring studies of the contamination and recovery of intertidal areas including invertebrates (96086), mussels (96090), and eelgrass communities (96106). Any future work on the intertidal communities will be coordinated with ongoing intertidal research performed by NOAA.

FATE AND PERSISTENCE OF OIL. The major issue involving the fate and persistence of oil is whether additional beach treatment would be effective, beneficial, or would inflict additional harm to the recovering intertidal areas. These issues are important and have attracted significant interest from the public, especially subsistence users around Chenega who previously used beaches on which surface oil remains visible. A workshop to address these issues was held in November 1995. The results of this workshop are expected to be distributed early in 1996. Project 96027 closes out a FY 95 assessment of shoreline oil in the Kodiak area, and follows up on information from November's Residual Oiling Workshop.

ADDITIONAL MONITORING

- ***Harlequin Duck Monitoring.*** Use newly available genetic techniques to determine the population structure and the interchange between populations of harlequin ducks in the northern Gulf of Alaska (96161). Monitor reproductive success in oiled and unoiled areas within Prince William Sound (96427).
- ***Hydrocarbon Database.*** Continue analysis of hydrocarbon samples to support many other Trustee Council projects, and maintain the database of information about those samples (96290).

COST

		Authorized for FY 96	Estimated Total thru 2002
Nearshore Vertebrate Predators		$1,859,900	$5,648,700
Monitor Recover of Intertidal Areas		$631,200	$631,200
Fate and Persistence of Oil		$39,800	$39,800
Additional Monitoring		$458,300	$1,248,200
	Total:	$2,989,200	$7,567,900

Seabird Forage Fish and Related Projects

This cluster of projects addresses bald eagles, common murres, marbled murrelets, and pigeon guillemots.

SEABIRD/FORAGE FISH PROJECT (APEX). The Seabird/Forage Fish Project (96163) — also known as APEX — is one of the three major ecological studies being undertaken by the Trustee Council. Populations of several injured fish-eating birds and mammals, including common murres, marbled murrelets, and pigeon guillemots, are not recovering in Prince William Sound. This group of projects examines whether the abundance, composition, and distribution of forage fish are limiting seabird recovery in Prince William Sound. The project envisions intensive study for five years (FY 95-99).

RELATED BIRD MONITORING AND RESEARCH PROJECTS. Although the Seabird/Forage Fish Project is likely to be the primary restoration effort addressing seabirds, other restoration projects gather basic life history information and monitor recovery of populations.

- ***Murrelets:*** The Trustee Council has previously funded significant work to monitor marbled murrelet populations and to provide an index of marbled murrelet productivity (96031). This year's funding is to synthesize past marbled murrelet work (including analysis of FY 95 field work) and to explore possible integration into the Seabird/Forage Fish Project. A second study will develop basic biological information about the Kittlitz's murrelet, a species thought to have received significant injury due to the spill, but about which very little is known (96142).

- ***Common Murres:*** Monitor the population of common murres at their major spill-area colony, the Barren Islands (96144).

- ***Other:*** Repeat a marine bird survey that monitors populations of a variety of marine birds (96159), contribute to publication of reports from a seabird restoration workshop sponsored by the Trustee Council in the fall of 1995 (96038), and close out a project to remove introduced foxes from islands with seabird colonies (96101).

COST

	Authorized for FY 96	Estimated Total thru 2002
Seabird/Forage Fish (APEX) Project	$1,800,700	$5,302,100
Murrelets	$246,300	$336,200
Common Murres	$70,500	$698,300
Other	$293,500	$318,500
Total:	$2,411,000	$6,655,100

Subsistence

The most important subsistence restoration activities are those actions that restore the resources important to subsistence. These include clams, harbor seals, Pacific herring, pink salmon, sea otters, and sockeye salmon. Most projects in the FY 96 Work Plan aid this objective.

RESTORE INJURED RESOURCES USED FOR SUBSISTENCE. One project to restore subsistence resources that is not catalogued elsewhere is a survey to determine the extent, severity, and cause of an observed decline of octopus (96009D).

REPLACE OR ENHANCE SUBSISTENCE RESOURCES. Seven projects focus specifically on enhancing or replacing harvestable resources near subsistence communities.

- ***Replacement Salmon Runs.*** Provide enhanced or replacement salmon runs near subsistence communities (96127, 96220, 96222, 96225, 96256, 96272).
- ***Clam Restoration***. Develop hatchery techniques to produce clam seed and provide replacement clam beds for subsistence use (96131).

FACILITATE PARTICIPATION OF AND COMMUNICATION WITH SUBSISTENCE USERS. These projects inform subsistence users about restoration efforts directed at the resources they use for food. In addition, they include efforts to make use of subsistence users' knowledge about resources in order to achieve restoration objectives. Finally, these projects help subsistence users participate in the restoration planning process. Aiding participation of and communication with subsistence users is expected to occur throughout the restoration process.

- ***Community Involvement/Traditional Knowledge*** (96052).
- ***PWS Youth Area Watch*** (96210).
- ***Harbor Seal Cooperative Management Projects:*** Harbor Seal Cooperative Assistance including community-based sampling (96244). Also, Documentary on Subsistence Seal Hunting (96214).

FOOD SAFETY TESTING; RESIDUAL SHORELINE OIL. Testing subsistence foods for safety began in 1989 under the auspices of the Oil Spill Health Task Force. This and similar work was continued by the Trustee Council in FY 93, 94, and 95. Communication of food safety information will continue under the Community Involvement/Traditional Knowledge project (96052). A workshop on the effects and potential remedies for the continued presence of residual shoreline oil was held in the fall of 1995. Results are expected to be presented to the Trustee Council in early 1996.

COST	Authorized for FY 96	Estimated Total thru 2002
Restore Injured Subsistence Resources*	$142,300*	$183,200*
Replace/Enhance Subsistence Resources	$618,000	$2,470,400
Facilitate Participat'n & Communication	$591,900	$2,476,900
Food Safety Testing	Included in the projects above	
Total:	$1,352,200	$5,130,500

* Most projects described elsewhere in this work plan restore resources used for subsistence.

Archaeological Resources

Archaeological resources are non-renewable. They cannot recover in the same sense as biological resources. Thus, the restoration effort has focused on monitoring, site-stabilization and data recovery, and protecting artifacts and sites from further degradation.

MONITORING. Periodically monitor a small number of "index sites" to gauge whether there is a resurgence in looting and vandalism, and continue hydrocarbon testing (96007A).

SITE-STABILIZATION AND DATA RECOVERY. Finish curation of artifacts from two vandalized sites (96007B).

PROTECTING ARTIFACTS AND SITES. Two strategies seek to protect artifacts and sites from further degradation and vandalism.

- ***Site-stewardship Program:*** Provide training and coordination for volunteers to monitor vandalized archaeological sites in the spill area. The approved project funds a pilot program for Kachemak Bay, Uganik Bay, Uyak Bay, and the Chignik areas (96149).

- ***Planning for Repositories.*** The possibility of providing facilities to conserve and display artifacts within communities of the spill area has attracted significant community interest. Project 96154, would work with communities and museums in the spill area, and the University of Alaska to evaluate the need for additional repositories and develop a regional approach to artifact protection.

COST

		Authorized for FY 96	Estimated Total thru 2002
Monitoring		$145,100	$560,100
Complete Artifact Curation		$78,400	$78,400
Protecting Artifacts and Sites		$280,700	$390,700
	Total:	$504,200	$1,029,200

Habitat Improvements

Along the Kenai River, the riparian zone provides important habitat for pink salmon, sockeye salmon, and Dolly Varden. It has been adversely affected by trampling, vegetation loss and the development of structures that affect the riverbank and water. One project (96180) would restore trampled habitat along the Kenai River through general restoration techniques such as revegetation and installation of boardwalks and signs to divert use away from sensitive areas.

Cost

	Authorized for FY 96	Estimated Total thru 2002
Kenai Habitat Restoration & Recreation Enh.	$560,600	$1,960,600

Reduction of Marine Pollution

According to the *Restoration Plan:* "Restoration projects whose primary emphasis is to reduce marine pollution may be considered: where the marine pollution is likely to affect the recovery of a part of the injured marine ecosystem, or of injured resources or services; and where the project will not duplicate existing agency activities."

Sound Waste Management Plan. Project 96115 completes the second and final year of development of a comprehensive plan to identify and remove the major sources of marine pollution and solid waste in Prince William Sound that may be affecting recovery of resources and services injured by the spill. Implementation of the solutions to remove the waste will be funded mainly from sources other than Trustee Council funds. However, some solutions may be appropriate for funding by the Trustee Council in future years. The plan is expected to be finished during FY 96.

Cost

	Authorized for FY 96	Estimated Total thru 2002
Sound Waste Management Plan	$28,300	$28,300

Public Information, Science Management, and Administration

These expenses fund management and administrative functions necessary to efficiently implement the restoration program.

PUBLIC INFORMATION AND INVOLVEMENT

- ***Public Advisory Group.*** A 17-member advisory group provides input to the Trustee Council on the annual work plan and other aspects of the restoration program.

- ***Public Meetings.*** These meetings provide information and solicit comment on restoration activities.

- ***Publications.*** The Trustee Council publishes a newsletter, an annual status report, and a variety of other publications to provide information to scientists, resource managers, and the public.

- ***Oil Spill Public Information Center.*** OSPIC serves as the central access point for information and materials generated through the restoration process. In the past four years, staff librarians have responded to over 14,000 information requests, processed over 1,700 interlibrary loans, and distributed over 30,000 documents.

- ***Information Management System.*** Beginning in FY 95, the Trustee Council provided funding to develop a comprehensive database of restoration projects and reports for access through the Internet and other necessary tools to more efficiently synthesize and disseminate information generated through the restoration process.

SCIENTIFIC MANAGEMENT AND SUPPORT

- ***Independent Scientific Review.*** Since the oil spill, independent scientific review and support at the direction of the Chief Scientist have been a major part of the damage assessment and restoration process to ensure that studies are based on sound scientific principles. This process includes peer review of project proposals and draft reports.

- ***Scientific Workshops:*** Technical workshops in 1995 focused scientific discussion on seabird restoration, intertidal/subtidal communities, wild salmon stock supplementation, residual oiling, pink salmon, sockeye salmon, herring, harlequin ducks, the seabird/forage fish (APEX), and the SEA Program. Similar workshops will be conducted as needed in FY 96. In addition, an annual workshop is held to provide a forum for all principal investigators and project leaders to meet, report on the results of the most recent field season, and discuss efforts to integrate and synthesize information generated by the overall program. The 1996 Restoration Workshop is scheduled for January 16-18, 1996 in Anchorage. For more information on the workshop, please call the Restoration Office.

ADMINISTRATION. The Trustee Council is staffed by an executive director who oversees a staff that performs the planning, coordination, project oversight, fiscal accountability, and

communications functions of the Trustee Council. In addition, each Trustee Council agency has a liaison who assists with work plan development and other Council efforts.

OTHER. One project that addresses public information and is not catalogued elsewhere is 96507 which contributes additional funds to the publication of results from the *Exxon Valdez* Oil Spill Symposium of 1993. The project costs $42,000 and is in addition to the $102,000 the Trustee Council has previously spent on the proceedings.

COST. The budget for the Public Information, Science Management, and Administration component of the restoration program is targeted to be reduced by almost 20% in FY 96 — from $4.2 million in FY 95 to $3.4 million in FY 96. Further reductions are expected through FY 2002.

Cost - Public Information, Science Management, and Administration

Authorized for: FY96	$3,439,600
Estimated for: FY97	$3,200,000
FY98	$2,800,000
FY99	$2,500,000
FY2000	$1,700,000
FY2001	$1,500,000
FY2002	$1,500,000
Subtotal: FY97 - 2002	*$13,200,000*
Total: FY96 - 2002	*$16,600,000*

Restoration Reserve

Complete recovery from the *Exxon Valdez* oil spill may not occur for decades. For example, some salmon return in cycles of four to six years, and other resources have lives that are much longer. To be effective, restoration activities may have to span more than one generation. Sometimes long-term research is necessary to understand why a resource is not recovering. In many cases, research must precede effective restoration or improved management decisions that will protect a resource or service. For these reasons, some restoration activities may continue for a long time.

Annual payments by the Exxon Corporation to the Restoration Fund end September 2001. The *Exxon Valdez* Restoration Reserve provides an account to hold funds to be used for restoration activities after the last annual payment. Allocation of the Reserve to specific activities will be made by the Trustee Council at a later date.

The $12 million approved by the Trustee Council in FY 96 work plan is the third payment toward the *Exxon Valdez* Restoration Reserve. Additional deposits of $12 million made in each of the remaining six years would provide a reserve of $108 million plus interest. These funds are expected to be used to carry out long-term restoration activities after the final payment by Exxon in 2001. However, the Trustee Council may use these funds at any time if they determine they are necessary for restoration.

Research Facilities

Alaska SeaLife Center. In November 1994, the Trustee Council conditionally authorized funding of up to $24,956,000 to support construction of the Alaska SeaLife Center to provide a basic marine research infrastructure important to the long-term restoration effort. The research facility will be affiliated with the existing University of Alaska School of Fisheries and Ocean Science in Seward. It will provide presently unavailable laboratory capabilities for research and monitoring of marine mammals — harbor seals and sea otters — and marine birds injured by the oil spill. Wet and dry labs will also be available for fish genetics research regarding salmon and herring, and for live studies of bioenergetics, disease, reproduction, and neurobiology associated with fish and invertebrates in the spill area.

The Trustee Council funds will be combined with $12,500,000 appropriated by the Alaska State Legislature from the criminal settlement with Exxon for other development of the facility. Additional information about the Alaska SeaLife Center can be obtained from the Restoration Office.

Habitat Protection and Acquisition

In November 1994, the Trustee Council adopted the *Restoration Plan* that specifically identifies Habitat Protection and Acquisition as "one of the principal tools of restoration... important in ensuring continued recovery in the spill area." The goal of the Habitat Protection and Acquisition Program is to prevent additional injury to resources and services while recovery is taking place and to provide a long-term safety net for those resources.

The Trustee Council has completed an analysis of large parcels (greater than 1,000 acres) and small parcels (less that 1,000 acres) with high value habitats important to the recovery and restoration of injured resources and services. As indicated in Table 2 showing Past and Estimated Future Uses of the Civil Settlement Fund, the Trustee Council anticipates that approximately $375 million of the settlement will be needed to implement the *Restoration Plan* Habitat Protection and Acquisition Program.

During the four years since the civil settlement, under the Large Parcel Program, the Trustee Council has committed $161.5 million towards the protection in perpetuity of more than 305,000 acres of habitat important to the recovery and restoration of injured resources and services. In addition, Council action has resulted in 56,000 acres of land on Kodiak Island being placed into a protective conservation easement through the year 2001 pending further negotiation with the landowners. The Trustee Council is also working toward the protection of several small parcels in the spill area. As of December 1995, the Council had authorized purchase offers on some 22 small parcels for a total of $15.6 million that would, if accepted, provide protection for approximately 17,645 acres.

Kachemak Bay. In 1993, the Trustee Council contributed $7.5 million to the purchase of 23,800 acres of private inholdings within Kachemak Bay State Park on the Kenai Peninsula.

Seal Bay and Tonki Cape (Afognak Island). Also in 1993, the state purchased 41,549 acres on northern Afognak Island (17,166 acres on Seal Bay and 24,383 acres on Tonki Cape). In 1994, these lands were dedicated as the Afognak Island State Park.

Orca Narrows Subparcel. In January 1995, the federal government purchased from the Eyak Corporation timber rights on 2,052 acres of land in Orca Narrows near Cordova in Prince William Sound.

Akhiok-Kaguyak. In May 1995, the federal government purchased from Akhiok-Kaguyak, Inc. interests in 119,885 acres of land in Kodiak National Wildlife Refuge.

Old Harbor. Also in May 1995, the federal government purchased from the Old Harbor Native Corporation surface title to about 29,000 acres and conservation easements on 3,000 acres. These lands are also within the Kodiak National Wildlife Refuge. In addition, the Old Harbor Native Corporation agreed to preserve 65,000 acres of land on nearby Sitkalidak Island as a private wildlife refuge.

Koniag. In November 1995, the federal government purchased from Koniag, Inc., fee interest in the surface estate of nearly 60,000 acres of prime habitat for bear, salmon, bald eagles, and other species in the Kodiak National Wildlife refuge. This agreement also protected an additional 56,000 acres under a conservation easement through the year 2001. The Trustee Council is interested in acquiring fee interest in the lands covered by the conservation easement.

Shuyak Island. Also in November 1995, the Trustee Council agreed to acquire from the Kodiak Island Borough fee interest in 25,655 acres of prime habitat on Shuyak Island, at the northern tip of the Kodiak archipelago.

Small Parcels. To this point, the Council has identified 32 small parcels as having especially valuable restoration benefits. The Council acted on the first package of small parcels at both the November 20 and December 11, 1995 meetings, authorizing the appropriate agencies to make offers at appraised value for 22 small parcels, including approval of a Trustee Council contribution of $4 million to a Kenai Natives Association package. If all are accepted, these acquisitions would ensure the protection of 17,645 acres throughout the oil spill area for a cost of $15.6 million. Work on the remaining small parcels is on-going.

CURRENT ACTIVITIES. The Council is in various stages of negotiation with landowners to protect additional habitat. Negotiations are occurring with Eyak, Tatitlek, Chenega, Port Graham, English Bay, and Koniag corporations, and with Afognak Joint Venture. The Council anticipates that agreements will be completed with some of these landowners during the next year. In FY 96, the Council will also consider protection of additional small parcels

and attempt to finalize purchase agreements with owners of the small parcels on which the Council has made offers.

SUPPORT COSTS. Project 96126, Habitat Protection and Acquisition Support, funds the cost of negotiations, title searches, appraisals, surveys, and other work necessary to complete a purchase. The Council has authorized $2,160,900 for these activities in FY 96. A major portion of these costs is attributed to the need for timber appraisal work.

HABITAT IMPROVEMENTS. An additional project was approved to improve habitat. This project is discussed under the "Habitat Improvement" cluster, see page 20.

Appendix A

FY 96 WORK PLAN
MONITORING, RESEARCH, AND GENERAL RESTORATION PROJECTS
DESCRIPTION OF PROJECTS AND TRUSTEE COUNCIL ACTION

Acronyms

ABR	ABR, Inc., Environmental Research and Services
ANHSC	Alaska Native Harbor Seal Commission
Chugach HF	Chugach Heritage Foundation
Chugach RRC	Chugach Regional Resource Commission
IRA	Council organized under the Indian Reorganization Act
NRC	Natural Resources Consultants, Inc.
PacSeabird Group	Pacific Seabird Group
PWSAC	Prince William Sound Aquaculture Corporation
PWS Econ DC	Prince William Sound Economic Development Corp.
PWSSC	Prince William Sound Science Center
TXAM	Texas A & M University
UAF	University of Alaska - Fairbanks
UM	University of Montana
UW/UCD/SFU	Univ. of Washington/Univ. of California, Davis/Simon Fraser Univ.

HOW TO READ THE SPREADSHEET

Lead Agency	The trustee agency (USFS, NOAA, DOI, ADF&G, ADEC, or ADNR) to which the project has been assigned for program management purposes.
Proposer	The individual, organization, or trustee agency that submitted the project proposal.
Project Duration	What year FY 96 is in the Trustee 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 5-year project).
FY 96 Request	The amount of funding requested by the project proposer for federal fiscal year 1996 (October 1, 1995 - September 30, 1996).
FY 96 Approved	The amount of funding approved by the Trustee Council for FY 96.
FY 97 Estimate	For multi-year projects, the estimated project cost for FY 97.
FY 98 Estimate	The estimated project cost for FY 98.
FY 99 to End Estimate	Sum of the estimated project cost from FY 99 to completion of the project (no projects continue beyond FY 2002).
Total FY 96 to End Estimate	Sum of the estimated project cost for all years, beginning in FY 96 and ending with FY 2002 -- or the project's completion, whichever is sooner.
Description	A brief summary of the project, prepared by the project proposer.
Chief Scientist's Comments	A summary of the Chief Scientist's review of the project's technical merit.
Trustee Council Action	An explanation of the Trustee Council's decision on project funding for FY 96.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Pink Salmon Projects					$2,140.5	$2,017.5	$1,268.5	$775.2	$163.8	$4,225.0
96076	Effects of Oiled Incubation Substrate on Straying and Survival of Wild Pink Salmon	NOAA	NOAA	2nd. yr. 4 yr. project	$393.8	$393.8			$0.0	$393.8

Project Description

This project examines the effects of oil exposure during embryonic development on straying, marine survival, and gamete viability of pink salmon. Controlled experiments relating oil exposure to pink salmon survival will complete information needed to understand the extent and mechanism of the injury to pink salmon.

Chief Scientist's Comments

This study has focused on the effects of oil on straying rates and survival of pink salmon. The survival portion of this project is particularly important because it supports and extends the continuing work in 95191B, which addresses the possibility of heritable damage from oil exposure. In regard to the straying portion of this project, analysis of FY 1995 results indicates that future costs will be much greater than originally anticipated and it will be difficult to transfer the results to the oil-spill area. The most efficient approach will be to combine this project with /191B, into a single study focused on survival of salmon in relation to oil exposure. I recommend continued funding on this basis.

Trustee Council Action

Fund. NOAA has proposed reducing this project from five to four years, and has offered significant cost sharing. In combination with /191B, this work will provide useful information on marine survival and straying that will have broad application to salmon management.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96139A1	Salmon Instream Habitat and Stock Restoration - Little Waterfall Barrier Bypass Improvement	ADFG	ADFG	2nd yr. 4 yr. project	$55.0	$55.0	$35.0	$15.0	$0.0	$105.0

Project Description

This proposal will provide for continuation of Project 95139A1 to complete the barrier bypass improvement at Little Waterfall Creek. It will evaluate whether the improvements are successful once construction is complete. The project will increase spawning habitat use by pink and coho salmon and thus will increase salmon production in ensuing years.

Chief Scientist's Comments

This proposal is technically sound and its implementation will likely enhance pink salmon production.

Trustee Council Action

Fund. Project is intended to increase available spawning habitat and thus provide additional pink and coho salmon for harvest as a replacement for salmon lost in the oil spill.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96139A2	Spawning Channel Construction Project Port Dick Creek, Lower Cook Inlet	ADFG	ADFG	1st yr. 5 yr. project	$230.5	$230.5	$37.0	$23.2	$30.0	$320.7

Project Description

The proposed Port Dick Pink Salmon Spawning Channel would restore wild pink and chum salmon stocks. The proposed project would increase the spawning habitat available in Port Dick Creek by restoring formerly used tributaries by excavating down to stable water sources.

Chief Scientist's Comments

Implementation of this proposal will likely enhance pink salmon production, and contains plans to monitor performance of the modified channel. It had been previously approved in 1995.

Trustee Council Action

Fund. Project is intended to increase available spawning habitat and thus provide additional pink and chum salmon for harvest as a replacement for salmon lost in the oil spill.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96139C1	Montague Riparian Rehabilitation Monitoring Program	USFS	USFS	3rd yr. 3 yr. project	$43.1	$9.7	$0.0	$0.0	$0.0	$9.7

Project Description

This project is a continuation of 94139 and 95139C. In FY 94, funding was granted to construct 25 to 30 structures in streams flowing through clearcut areas on Montague Island. These structures were designed to improve fish spawning and rearing habitat, prevent erosion, and help restore the natural flows and stream features that existed prior to logging. The 1994 work also included the improvement of 20 acres of riparian vegetation. This project is to continue evaluation of structures, repair any damage that may have occurred and assess changes in the aquatic habitat, stream channels, and substrates. The riparian vegetation work will also be evaluated.

Chief Scientist's Comments

This proposal is for the third year of a project that improves riparian habitat on Montague Island. The proposal is for monitoring and evaluation of actions taken in 1994 and 1995, which is appropriate.

Trustee Council Action

Fund. This project is designed to monitor results of a previous EVOS project.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96186	Coded Wire Tag Recoveries From Pink Salmon in Prince William Sound	ADFG	ADFG	7th yr. 10yr. project	$260.5	$254.9	$260.5	$260.5	$85.0	$860.9

Project Description

This project funds recovery of coded-wire tags in PWS pink salmon. The recovered tags are used to help ADFG manage the commercial fishery to protect injured stocks. The project is part of a program to transition to a more precise in-season tool, otolith marking, with a permanent funding source other than the Trustee Council. (This project was formerly numbered 95320B.)

Chief Scientist's Comments

This project is necessary to support the transition to the otolith thermal mass marking. This project should be discontinued only after feasibility of otolith thermal marking is demonstrated.

Trustee Council Action

Fund. Future years' funding, as recommended, includes two years of overlap with Otolith Thermal Marking Project (96188).The project provides information that allows managers to vary the timing and location of commercial harvest to protect injured wild stocks. This is especially important for stocks in the hard-hit Southwest District in PWS and would enable continued fishing in this area.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96188	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in Prince William Sound	ADFG	ADFG	2nd yr. 6 yr. project	$95.2	$93.2	$100.5	$100.5	$48.8	$343.0

Project Description

This project will develop otolith mass marking as an in-season stock separation tool for pink salmon in PWS. In-season stock composition data is used by fishery managers to protect damaged wild pink salmon stocks from overharvest in mixed-stock fisheries. Coded-wire tags are presently used for this purpose in the Sound. Transitioning to otolith marking will reduce costs and increase precision. (This project was formerly numbered 95320C.)

Chief Scientist's Comments

This is the continuation of a previously approved program. It is innovative, cost effective, and probably one of the most effective steps the Trustees can support to improve pink salmon management.

Trustee Council Action

Fund. Otolith marking is a more accurate and less expensive technology for providing the information now obtained through coded wire tags. Future years' funding, as recommended, includes two years of overlap with Coded Wire Tag project (96186). Funding for application of this technique will make a transition to non-Trustee sources by FY 99 (only closeout funds proposed in FY 99).

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96190	Construction of a Linkage Map for the Pink Salmon Genome	ADFG	Allendorf/UM	1st yr.	$240.0	$167.7	$250.0			$417.7

Project Description

Proposal would construct a detailed genetic linkage map for pink salmon by analyzing the genetic transmission of several hundred DNA polymorphisms. The ability to genetically map the location of oil-induced lesions will allow the thorough identification, description, and understanding of oil induced genetic damage. This research will also aid other pink salmon studies including estimation of straying rates, description of stock structure, and testing if marine survival has a genetic basis.

Chief Scientist's Comments

This project will produce a linkage map for a large number of genes in pink salmon. This project would potentially provide significant benefits for pink salmon, because it would increase knowledge of the genetic implications of management and supplementation decisions for wild and hatchery stocks. For example, a genetic linkage map would facilitate development of disease-resistant strains of fish and provide new markers for genetic stock identification. This project will require several years of support, and I encourage the proposers to seek additional sources of funds in the future. In addition, the proposer should coordinate with current efforts at the Universityi of Alaska.

Trustee Council Action

Fund. This project provides fundamental information which will likely aid restoration of wild stocks of pink salmon and which are likely to benefit all pink salmon management in the future. It is a long-term project with national importance. Recommendation is to provide two years of funding at the requested level, but proposers should seek additional funding sources in future years.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96191A	Oil-Related Embryo Mortalities in PWS Pink Salmon Populations	ADFG	ADFG	5th yr. 7 yr. project	$474.6	$474.6	$407.0	$246.0	$0.0	$1,127.6

Project Description

Elevated embryo motalities were detected in populations of pink salmon inhabiting oiled streams following the oil spill. The purpose of this project is to continue to monitor the recovery of pink salmon embryos in the field, provide laboratory verification of the field results, and verify and identify the occurrence of genetic damages. Results of these studies may provide the first evidence of heritable injury in fish exposed to chronic or acute sources of oil pollution.

Chief Scientist's Comments

To evaluate the recovery of wild stocks of pink salmon in Prince William Sound, it is necessary to monitor embryo mortality in the field. This past season (1995) was the second year in which no statistically significant differences were found in embryo mortality between oiled and unoiled streams. However, two more years of study are required to confirm recovery in odd- and even-year stocks. The investigators have done excellent work to date. I recommend funding the field components of this project. In addition, the search for genetic evidence of heritable injury should continue on a limited basis, mainly through the andogenesis experiments. Current efforts to locate altered DNA sequences should be closed out in FY96, as they appear to have a low prospect of success.

Trustee Council Action

Fund field monitoring and androgenesis experiments. Close out molecular genetics. Field monitoring should receive funding until there are no statistically significant differences between oiled and unoiled streams for two years for each of the odd- and even-year runs (closeout is FY 98). This is the major monitoring project for the on-going injury to and recovery of pink salmon.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA	NOAA	5th yr. 5 yr. project	$169.3	$159.6	$0.0	$0.0	$0.0	$159.6

Project Description

This project will determine if oil can cause heritable damage to pink salmon reproductive capacity. This requires culturing three generations of pink salmon which provides opportunities to examine other immediate and long-term effects of incubating in oiled gravel. The project already is underway and oil exposures were completed in 1994. This FY 96 proposal focuses on incubating eggs from maturing adults in 1995 and coded-wire tagging the second generation for release in Spring 1996.

Chief Scientist's Comments

Recent results indicate that adult pink salmon which were exposed to oil as embryos produce young with reduced survival. This may be a very significant finding, and it is crucial to follow potential effects into a second generation. Thus, I recommend continued funding of this work. In addition, the work now being performed under 96076 is most valuable as support for this project, and I recommend combining the two projects.

Trustee Council Action

Fund, but combine future work with 96076. This project provides important laboratory confirmation of field observation. Project should be continued into second generation of pink salmon. This project is a laboratory companion to 96191A.

96196	Genetic Structure of Prince William Sound Pink Salmon	ADFG	ADFG	3rd yr. 5 yr. project	$178.5	$178.5	$178.5	$130.0	$0.0	$487.0

Project Description

Previous work found that wild-stock pink salmon suffered both direct lethal and sublethal injuries as a result of the oil spill. An understanding of the population structure of pink salmon in PWS is essential to assess the impact of these injuries on a population basis and to devise and implement management strategies for restoration. This project is designed to delineate the genetic structure of populations of wild pink salmon inhabiting PWS. (This project was formerly numbered 95320D.)

Chief Scientist's Comments

This project is yielding interesting and worthwhile insights into genetic diversity among wild pink salmon in Prince William Sound, most notably east-west differences within the Sound. This work could have significant benefit for pink salmon management, and I recommend continued funding.

Trustee Council Action

Fund. This project is designed to determine geographic extent of genetic differences in PWS pink salmon. Knowledge of the location of pink salmon stocks and genetic differences among the stocks in PWS will help refine pink salmon management areas and goals.

Herring Projects					$1,532.6	$1,323.0	$930.6	$708.7	$0.0	$2,962.3
96074	Herring Reproductive Impairment	NOAA	NOAA	3rd yr. 4 yr. project	$347.7	$140.0	$0.0	$0.0	$0.0	$140.0

Project Description

This study has been examining long-term impacts on herring due to the oil spill using field and laboratory measurements. The field component searched for reproductive impacts in PWS stocks and the laboratory portion tested if exposure of various life stages to oil causes damage. This project began following the crash of populations in PWS and represents one of several projects focused on causes of the crash and prospects for recovery.

Chief Scientist's Comments

Most of the major objectives of the work have been accomplished in 1994 and 1995. The remaining work in 1996 is costly relative to what it will add to our knowledge of toxicity of oil to herring reproduction. I therefore recommend close-out funding for this project with no support for additional field or laboratory work.

Trustee Council Action

Fund close-out of entire project, both laboratory and field components, since major objectives have been accomplished.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96162	Investigations of Disease Factors Affecting Declines of Pacific Herring Populations in Prince William Sound, AK	ADFG	UW/UCD/SFU	3rd yr. 5 yr. project	$635.0	$635.0	$510.6	$461.7	$0.0	$1,607.3

Project Description

Field and laboratory studies will focus on Viral Hemorrhagic Septicemia (VHS) and *Ichthyophonus hoferi*, a pathogenic fungus, to determine their role in the disease and mortality observed in PWS herring since 1993. Herring in PWS will be monitored three times per year for signs of disease and immune status. Specific pathogen-free herring will be used to determine the degree of mortality, blood chemical changes and pathogenicity produced by these organisms alone and in combination with exposure to stressors such as petroleum hydrocarbons, temperature and crowding. (This project was formerly numbered 95320S.)

Chief Scientist's Comments

Substantial progress has been made in understanding the role of VHS and *Icthyphonus* in the recent decline of Pacific herring stocks in Prince William Sound. The hypothesis that oil-induced stress is linked to the disease outbreak and population decline remains viable. The project is on track for achieving its objectives, and I recommend continued funding.

Trustee Council Action

Fund. Project is designed to investigate potential link between oil exposure and disease, and between disease and the herring population decline in PWS. Understanding the causes of the decline and the lack of recovery is important for restoration and resumption of the herring fishery.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96165	Genetic Discrimination of Prince William Sound Herring Populations	ADFG	ADFG	3rd yr. 5 yr. project	$105.8	$103.9	$120.0	$97.0	$0.0	$320.9

Project Description

The PWS herring fishery has been in catastrophic decline since 1992. The Alaska Department of Fish and Game recovery effort includes incorporating a knowledge of genetically derived population structure into harvest management. This continuing project will delineate the structure of PWS population(s) and related North Pacific populations using both nuclear and mitochondrial DNA analyses. Tests for temporal and spatial diversity within years and temporal stability across years will be done.

Chief Scientist's Comments

This is a continuing project that will directly affect issues of importance for managing Prince William Sound herring. The investigators have performed admirably on past projects, and I recommend further support for the project in 1996.

Trustee Council Action

Fund. This project addresses basic questions about the genetic composition of PWS herring in relation to other North Pacific populations. This information is important to management. When setting harvest limits, it is important to know whether there exists one or more genetically distinct populations.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96166	Herring Natal Habitats	ADFG	ADFG	3rd yr. 5 yr. project	$444.1	$444.1	$300.0	$150.0	$0.0	$894.1

Project Description

Past studies have documented damage from oil exposure in adult herring, hatching success of embryos, and levels of physical and genetic abnormalities in larvae. The PWS herring spawning population has drastically declined since 1993, and pathology studies implicated Viral Hemorrhagic Septicemia (VHS) and *Ichthyophonus* as potential sources of mortality as well as indicators of stress. The project will continue to provide estimates of spawning herring abundance and investigate the lethality of suspected pathogens and the role of environmental contaminants in disease transmission through laboratory and field studies.

Chief Scientist's Comments

This work is vital to on-going management of Pacific herring in Prince William Sound. I recommend one more year of full support from the Trustees, provided that there is an explicit plan developed for transfer of this program back to ADFG as part of normal agency management.

Trustee Council Action

Fund for FY 96 contingent upon expectation that project begins a transition to non-Trustee funding source in FY 97. Project's major objective is to improve estimate of spawning biomass of herring. This information is needed to establish harvest levels and guidelines that allow restoration to occur and to sustain a healthy fishery.

Sound Ecosystem Assessment (SEA)					$4,762.3	$4,533.4				$4,533.4
96320E	Salmon and Herring Predation	ADFG	ADFG	3rd yr. 5 yr. project	$670.5	$637.7				$637.7

Project Description

This project would determine the extent to which variations in predation on juvenile pink salmon affect survival and describe mechanisms that cause variation in predation. This would include the identification of fish predators (distribution, abundance, species, and size composition) along the juvenile salmon migratory pathway. The project will also collect samples for a variety of the other SEA efforts.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

96320G	Phytoplankton and Nutrients	ADFG	McRoy/UAF	3rd yr. 5 yr. project	$162.2	$162.2				$162.2

Project Description

This project would focus on primary production and provide nutrient and phytoplankton data to help evaluate the influence of phytoplankton dynamics on the PWS food web. The project would examine variations in phytoplankton production in relation to zooplankton production and oceanographic conditions.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320H	Zooplankton in the PWS Ecosystem	ADFG	Cooney/UAF	3rd yr. 5 yr. project	$329.9	$323.6				$323.6

Project Description

This project would continue to investigate the annual zooplankton bloom and its relationship to fish predator abundance. The project would sample and monitor the distribution and composition of PWS macrozooplankton populations in collaboration with the physical oceanography component of SEA.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320I	Isotope Tracers - Food Webs of Fish	NOAA	PWSSC	3rd yr. 5 yr. project	$195.8	$195.8				$195.8

Project Description

This project would analyze tissue samples and use shifts in stable isotope ratios that occur with trophic level and food source to describe food sources and predation relationships among species in PWS.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320. (Note: An additional $74,500 is recommended to fund report writing costs in FY 97 as a result of transition to the NOAA-BAA contracting process.)

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320J	Information Systems and Model Development	NOAA	PWSSC	3rd yr. 5 yr. project	$489.9	$482.7				$482.7

Project Description

This project would provide an information system appropriate for the PWS System Investigation effort and develop the modeling resources needed to achieve the program's objectives. This sub-project provides for overall data management and technical support to other PWS System Investigation efforts through field data communications; descriptive modeling; numerical modeling; support with sampling technologies; and providing for on-line analysis and visualization tools to provide the means by which various data can be collected, used and understood.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320. (Note: An additional $173,200 is recommended to fund report writing costs in FY 97 as a result of the transition to the NOAA-BAA contracting process.)

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320K	PWSAC: Experimental Fry Release	ADFG	PWSAC	3rd yr. 5 yr. project	$61.4	$61.4				$61.4

Project Description

This project would support the rearing of salmon fry for release, part of an effort to investigate the possible influence of fry size as a determinant of survival during early marine residence.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320M	Physical Oceanography in PWS	NOAA	Salmon, PWSSC	3rd yr. 5 yr. project	$506.9	$499.4				$499.4

Project Description

This project would investigate the physical oceanographic structure of PWS including the space/time variability of atmospheric and oceanic processes within PWS, investigate relationships between atmospheric forcing (wind, storms, long term temperature changes) and wind and buoyancy-driven currents; determine how these relationships act to retain/disperse food resources for ecologically important species within PWS; and investigate large and fine scale oceanographic structures and major climatic cycles and events.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320. (Note: An additional $146,400 is recommended to fund report writing costs in FY 97 as a result of the transition to the NOAA-BAA contracting process.)

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320N	Nekton/Plankton Acoustics	NOAA	PWSSC	3rd yr. 5 yr. project	$487.6	$487.6				$487.6

Project Description

This project would describe macrozooplankton distribution and biomass in real time using hydroacoustics; describe fish predator distribution/biomass in real time using hydroacoustics; and investigate the hypothesis that plankton/nekton/predator populations aggregate in cyclic patterns and specific locations due to currents and bottom morphology.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320. (Note: An additional $195,000 is recommended to fund report writing costs in FY 97 as a result of the transition to the NOAA-BAA contracting process.)

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320Q	Avian Predation on Herring Spawn	USFS	USFS	3rd yr. 5 yr. project	$40.4	$40.4				$40.4

Project Description

This project would close out research to determine herring egg loss to avian predators such as glaucous-winged gulls, surf scoters, black turnstones and surfbirds.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320R	SEA Trophodynamic Modeling and Validation Through Remote Sensing	ADFG	Eslinger/UAF	3rd yr. 5 yr. project	$204.0	$202.7				$202.7

Project Description

This is a new SEA project in FY 96 as a result of an internal reorganization. Some of the work performed under 95320-G and J is to be done under this project in FY 96 and beyond. This project would continue the trophodynamic modeling of phytoplankton and zooplankton begun in FY 95 and add modeling of ichthyoplankton, herring larvae in particular. It will evaluate and verify the model against field data to be collected using a variety of remote sensing and in situ sampling platforms.

Chief Scientist's Comments

See 96320. This reorganization of the SEA program seems logical and effective. This work is central to development of an understanding of controls of year-to-year variation in recruitment success of fish in Prince William Sound.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320T	Juvenile Herring Growth and Habitat Partitioning	ADFG	Narcross/ UAF	3rd yr. 5 yr. project	$1,234.6	$1,141.6				$1,141.6

Project Description

This project would investigate what may be causing the failure of herring runs in PWS by investigating the dynamics of larval and juvenile herring. The proposed project, together with other investigations being undertaken as part of the SEA program, would attempt to describe the relative importance of zooplankton abundance, oceanic conditions, habitat requirements, and density dependent predation in determining large fluctuations in herring abundance.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320U	Energetics of Herring and Pollock	ADFG	Paul/UAF	3rd yr. 5 yr. project	$190.3	$189.5				$189.5

Project Description

Project would focus on the seasonal somatic energy cycles of two important forage fish species in the spill area--- Pacific herring and walleye pollock. The project would explore overwinter survival of juvenile herring and herring reproductive biology and provide energetic information to quantify trophic interactions (food webs) involving pollock.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG	PWSSC	3rd yr. 5 yr. project	$120.0	$40.0				$40.0

Project Description

This project would close out the investigation of the size, composition, behavior and duration of foraging aggregations of predators, especially birds, at fry release sites.

Chief Scientist's Comments

See 96320.

Trustee Council Action

See 96320.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96320Z1	Synthesis and Integration	ADFG	Cooney/UAF	3rd yr. 5 yr. project	$68.8	$68.8				$68.8

Project Description

This project provides support for synthesis and integration activities associated with the application of SEA field and modelling studies to the restoration of pink salmon and Pacific herring populations in PWS.

Chief Scientist's Comments

Necessary for effective project management, although cost for administrative support seems high.

Trustee Council Action

See 96320.

SEA Program -- Related Projects					$114.8	$114.8	$85.0	$85.0	$0.0	$284.8
96195	Pristane Monitoring in Mussels and Predators of Juvenile Pink Salmon & Herring	NOAA	NOAA	1st yr. 3 yr. project	$114.8	$114.8	$85.0	$85.0	$0.0	$284.8

Project Description

This project will measure pristane in predators of juvenile pink salmon and larval herring to determine the dietary dependence of these predators on alternative prey, *Neocalanus* spp. copepods. This project will also monitor pristane in mussels as an indirect index of potential year-class strength for pink salmon and herring. These results will be used to evaluate the prey-switching hypothesis of the SEA plan and identify critical marine nursery habitat in PWS.

Chief Scientist's Comments

This proposal is extremely valuable and elegant and has tremendous potential as an integrative tool for future monitoring of the Prince William Sound ecosystem. Thus, I recommend full funding.

Trustee Council Action

Fund. This is a technically innovative and excellent project. Collecting and measuring pristane in mussels may provide a simple measure of marine productivity, thus allowing predictions about future fisheries production and harvest levels.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Sockeye Salmon Program					$1,758.4	$1,286.2	$391.0	$0.0	$0.0	$1,677.2
96048-BAA	Historical Analysis of Sockeye Salmon Growth Among Populations Affected by Overescapement in 1989	NOAA	NRC, Inc.	1st yr. 1 yr. project	$116.9	$116.9	$0.0	$0.0	$0.0	$116.9

Project Description

Overescapement of sockeye salmon in several areas of Alaska occurred in 1989 as a result of the oil spill. Overescapement appears to have reduced salmon growth, leading to reduced survival. However, few records of sockeye growth in these systems occurred before 1989. This project will use adult sockeye scales to reconstruct the growth of sockeye salmon before, during, and after the oil spill event. These data will be used to document the effects of the spill and the subsequent recovery of the sockeye stocks.

Chief Scientist's Comments

Excellent proposal. Will help synthesize existing information on sockeye salmon overescapement, including at Chignik Lake, which has not been studied following a large escapement event after the oil spill. Good potential to complement current studies of overescapement impacts in the Kenai River system, as well as provide insight into long-term oceanographic changes in the Gulf of Alaska. Thus, I recommend funding this project.

Trustee Council Action

Fund. Project would synthesize existing information on sockeye overescapement, including for Chignik Lake. It will help resolve questions about the geographic extent and mechanism of EVOS-related overescapement injury. It also will provide information helpful to design management strategies to overcome EVOS injury.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96255	Kenai River Sockeye Salmon Restoration	ADFG	ADFG	5th yr. 6 yr. project	$447.9	$307.0	$100.0	$0.0		$407.0

Project Description

Greatly reduced fishing time in upper Cook Inlet in 1989 due to the presence of oil caused sockeye salmon spawning escapements in the Kenai River to exceed the desired amount by three times. The overescapement may have reduced survival of juvenile sockeye salmon. Careful monitoring and possible reduction of Kenai River sockeye salmon harvests may be necessary to ensure adequate escapements. The goal of this project is to restore Kenai River sockeye salmon through improved stock assessment capabilities and more accurate regulation of spawning levels.

Chief Scientist's Comments

This has been an excellent program, the results of which have already proven enormously valuable in managing the upper Cook Inlet mixed-stock fishery to protect Kenai River stocks. I recommend limited additional funding in FY96, after which this program should be taken over by ADFG as part of its normal management responsibilities.

Trustee Council Action

Fund at reduced amount which reflects the beginning of a transition to agency rather than Trustee Council support; the project will be closed out in FY97. The project has proven successful in providing in-season identification of actual runs that Cook Inlet fishermen are harvesting. The information is used by fisheries managers to modify fishing areas and openings to protect Kenai/Skilak stocks.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96258A	Sockeye Salmon Overescapement Project	ADFG	ADFG	3rd yr. 4 yr. project	$907.8	$596.6	$150.0	$0.0	$0.0	$746.6

Project Description

This project provides for completion of the Kenai lakes sockeye research program, and closeout of the sockeye monitoring program for Kodiak Island lakes. The Kenai research program investigates the mechanism and extent of injury for the continued depressed returns caused by the 1989 (and previous years) overescapement into the Kenai/Skilak system.

Chief Scientist's Comments

Recent analysis of the extensive limnological and fry data gathered over the last several years indicates a link between fall zooplankton abundance and fry survival in the subsequent year. This may explain sockeye salmon population cycles in these lake systems. If substantiated by further analysis, this is a major breakthrough in understanding of the Kenai River system and perhaps sockeye salmon rearing lakes in general. I recommend approval of the funds needed to complete the Kenai River portion of this work in FY 1996. This project also includes funds for continued assessment of overescapement effects at Red and Akalura lakes on Kodiak Island. The investigators for the Kodiak portion of this project have done an excellent job, but the mixed-stock fishery in waters offshore of Red and Akalura lakes greatly complicates future restoration efforts for these lakes. I do not recommend funding Kodiak work beyond FY 96.

Trustee Council Action

Fund completion of work on the Kenai River. Close-out work this year on Kodiak portion of project consistent with Chief Scientist's recommendation. Project investigates mechanism of injury to Kenai river sockeye and monitors recovery of Kodiak sockeye runs. Review of FY 95 results indicates significant scientific breakthrough,which may explain the extent and mechanism of overescapement injury on the Kenai River. If the discovery is confirmed, it may significantly advance the understanding of the Kenai River system.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96259	Restoration of Coghill Lake Sockeye Salmon	ADFG	ADFG	4th yr. 5 yr. project	$285.8	$265.7	$141.0	$0.0	$0.0	$406.7

Project Description

Coghill Lake has historically been a major sockeye producer for PWS. The current production is very low and could jeopardize the sustainability of this sockeye stock without restoration efforts. This project continues a program begun in 1993 to fertilize Coghill Lake to restore the run. A restored sockeye salmon run would provide an important replacement resource for sport and commercial fisheries in PWS.

Chief Scientist's Comments

This project is increasing the productive capacity of Coghill Lake for sockeye salmon through fertilization. The Trustees should continue to support lake fertilization for two more years. I do recommend continued support of the limnological monitoring, but I am concerned that interpretation of the relationship between sockeye production and lake fertilization is confounded by introduction of hatchery-produced pre-smolt, which was done independently of the Trustee-sponsored project. There needs to be further discussion of the objectives and methods of the monitoring program.

Trustee Council Action

Fund continued fertilization through FY 97, but not hydroacoustic monitoring which has not been very effective. Smolt outmigration and limnological work will continue, but ADFG and PWSAC should undertake an expanded effort to assess returns of wild adults. Project is designed to restore Coghill Lake to its former position as a mainstay of the commercial/sport sockeye fishery in PWS. Although the injury to this fishery was not caused by the oil spill, this project has been conducted on a replacement basis for losses of other fishery resources.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Cutthroat and Dolly Varden Trout Projects					$377.1	$229.6	$200.0	$100.0	$0.0	$529.6
96043B	Monitoring of Cutthroat Trout and Dolly Varden Habitat Improvement Structures	USFS	USFS	3rd yr.	$40.4	$29.6				$29.6

Project Description

This project provides for monitoring of habitat improvement structures and their effects on cutthroat trout and Dolly Varden populations. These structures were installed in 1995 under Project 95043B. Additionally this proposal would provide for a project completion report of Project 95043B.

Chief Scientist's Comments

Previous concerns about supplementation effects have been addressed, and it is important to monitor the results for at least one year. I recommend funding of this project in FY 96, with further review before making any additional funding commitments.

Trustee Council Action

Fund. Project monitors results of previous work. Recommendation is for FY 96 only. It is unclear whether additional monitoring is necessary. Re-evaluate after FY 96.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96145	Cutthroat Trout and Dolly Varden: the Relation Among and Within Populations of Anadromous and Resident Forms	USFS	USFS	1st yr. 3 yr. project	$336.7	$200.0	$200.0	$100.0	$0.0	$500.0

Project Description

Recovery of cutthroat trout is unknown. Restoration efforts have taken the form of instream habitat modification and stock supplementation. The usefulness of this approach in the long term is unknown. This project would determine the relation between resident and anadromous forms of these fish within the same watershed and between watersheds by examining genetic, meristic, and life-history features of each group. Results from this study will allow a long-term, comprehensive and ecologically sound restoration strategy for these fish to be developed.

Chief Scientist's Comments

This is a fundamentally excellent proposal that will determine the relationships between resident and anadromous forms of Dolly Varden and cutthroat trout. Our lack of knowledge of life history strategies is constraining our ability to identify the most effective restoration strategies for the species. This project will also help clarify damage assessment results obtained previously. Since the findings of this study have national implications, I suggest substantial cost sharing by the USFS.

Trustee Council Action

Fund. The project defines relationships among stocks and life history forms (e.g., anadromous vs. resident), refines understanding of the nature and extent of oil spill injury, and may confirm whether recovery has occurred. This same information has direct implications for management of sport fisheries in Prince William Sound and nationwide, and the USFS is providing significant support for this project.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Marine Mammal Program					$913.1	$812.8	$687.3	$275.1	$25.0	$1,800.2
96001	Recovery of Harbor Seals from EVOS: Condition and Health Status	ADFG	Castellini/UAF	2nd yr. 4 yr. project	$214.1	$214.1	$192.3	$48.1	$0.0	$454.5

Project Description

This project focuses on the health of harbor seals, a marine mammal species that is not recovering in Prince William Sound. Personnel from the University of Alaska in cooperation with the Alaska Department of Fish and Game will work with harbor seals to assess their health, blood and blubber chemistry and size in relation to their ecological and nutritional requirements. The project addresses potential health and nutritional problems that may be impeding harbor seal recovery.

Chief Scientist's Comments

This is a solid technical proposal that addresses a basic question about recovery of harbor seals in the oil spill area. The investigator is well qualified, and is helping to evaluate the most generally accepted hypothesis for the seals' decline.

Trustee Council Action

Fund. This project will document the body condition and nutritional status of harbor seals, thus helping to test the "is it food?" hypothesis for declines in the PWS harbor seal population. This information is necessary to eliminate alternative hypotheses (e.g., predation, disease). This project complements 96064 and will enable managers, subsistence hunters, and others to focus their concerns and efforts on the most probable sources of population decline.

96012A-BAA	Comprehensive Killer Whale Investigation in Prince William Sound, Alaska	NOAA	N Gulf Oceanic	2nd yr. 2 yr. project	$167.5	$101.0				$101.0

Project Description

This project continues the monitoring of the damaged AB pod and other Prince William Sound killer whales that has occurred on a yearly basis since 1984. It develops a GIS database on killer whales that, when coupled with genetic and acoustic data, will help evaluate recovery, recognize changes in behavior, and estimate killer whale impact on harbor seals.

Chief Scientist's Comments

The AB pod, which sustained losses at the time of the spill, and which was apparently rebuilding with the birth of several calves in 1990 and 1991, is now apparently losing members again. It is possible that this pod could disintegrate entirely, which would be an important event to document. Thus, I recommend approval of limited additional funds to ensure that basic monitoring continues in FY 96.

Trustee Council Action

Fund. There continues to be great interest in the status of killer whales, especially the AB pod, in Prince William Sound. However, any commitment of Trustee funds beyond FY 96 should be contingent on a thorough review of the recovery status of killer whales during the winter.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	ADFG	ADFG	2nd yr. 5 yr. project	$381.1	$347.3	$347.0	$100.0	$25.0	$819.3

Project Description

This project will monitor the status of harbor seals in PWS and investigate the possible causes for the ongoing decline. Aerial surveys will be conducted to determine whether the population continues to decline, stabilizes, or increases. Seals will be satellite-tagged to describe their movements, use of haulouts, and hauling out and diving behavior. Samples of blood, blubber, whiskers, and skin will be collected to study diet, health and condition, and genetic relationships to other harbor seal populations.

Chief Scientist's Comments

This is a very good proposal for continuing work on restoration of harbor seals. The investigators are performing well.

Trustee Council Action

Fund. This basic study explores reasons for the long-term decline in harbor seals. Focus is on "is it food?" hypothesis, but also addresses alternatives, such as predation and disease. This work will enable resource managers, subsistence users, and others to focus their efforts and concern on the most probable causes of population decline.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96170	Isotope Ratio Studies of Marine Mammals in Prince William Sound	ADFG	Schell/UAF	2nd yr. 4 yr. project	$150.4	$150.4	$148.0	$127.0	$0.0	$425.4

Project Description

Stable isotope ratios are natural tracers of carbon and nitrogen transfers through food webs. Through a mix of captive animal studies, comparison of isotope ratios in archived and current marine mammal tissues and their potential prey species in PWS, insight into environmental changes causing the decline of harbor seals may be possible. This project will supply the isotope ratio determinations for other projects using this technique in the PWS ecosystem. Over the 12 months of FY 96 funding, about 10,000 samples in these related projects will be analyzed. (This project was formerly numbered 95320I2.)

Chief Scientist's Comments

Excellent in all respects. This project will doubtlessly provide insights into the functioning of the Prince William Sound ecosystem that cannot be obtained in other ways. It may well provide valuable information for modeling the entire ecosystem at a very reasonable cost.

Trustee Council Action

Fund. This project provides technical support for 96064, and will assist the SEA program (96320) by describing the food chains that support important commercial fisheries in PWS.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Nearshore Ecosystem Projects					$3,159.1	$2,989.2	$1,869.3	$1,789.4	$920.0	$7,567.9
96025	Mechanism of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI	DOI	2nd yr. 5 yr. project	$1,859.9	$1,859.9	$1,669.4	$1,669.4	$450.0	$5,648.7

Project Description

The project assesses trophic, health, and demographic factors across a suite of "apex" predators injured by the spill to determine mechanisms constraining recovery and improve knowledge of the status of recovery. Primary hypotheses: 1) recovery of nearshore resources is limited by recruitment processes; 2) initial and/or residual oil in benthic habitats and in or on benthic prey has had a limiting effect on the recovery of predators; and 3) EVOS-induced changes in populations of benthic prey species have influenced the recovery of predators.

Chief Scientist's Comments

This program was peer reviewed in detail in March 1995, and an 18-month workplan was approved by the Trustee Council. A detailed review of the first full field season of this program will be conducted in the 1995 - 96 winter in order to refine the program for FY 96.

Trustee Council Action

Fund. In general, the nearshore ecosystem, including intertidal habitat and organisms, was hardest hit by the spill. This project monitors recovery of intertidal organisms and closely linked vertebrate predators and addresses question of whether continuing contamination is slowing recovery of vertebrate predators.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96027	Kodiak Archipelago Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC	ADEC	2nd yr. 2 yr. project	$39.8	$39.8	$0.0	$0.0	$0.0	$39.8

Project Description

This project completes work begun in FY 95 to determine the areal extent, toxicity and origin of oil on selected Kodiak Archipelago shorelines. Most of these shorelines were last surveyed in 1990. The information about the remaining oil is necessary to determine whether recovery is proceeding at an acceptable rate, and to help local people assess whether the presence of remaining oil is still affecting shoreline activities. It also provides funding to develop information about future shoreline treatment in Prince William Sound.

Chief Scientist's Comments

Close-out funding will allow community meetings to be held and final report to be written.

Trustee Council Action

Fund. Project is closeout of FY 95 shoreline assessment work in Kodiak. Project also will develop and assess information about future monitoring needs and alternative shoreline treatments.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96086	Herring Bay Monitoring and Restoration Studies	ADFG	Highsmith/UAF	7th yr. 7 yr. project	$185.3	$173.0	$0.0	$0.0	$0.0	$173.0

Project Description

In 1990, intertidal restoration studies were established in Herring Bay in response to the T/V *Exxon Valdez* oil spill. These studies have continued through the 1994 field season and show continued injury to *Fucus gardneri* and the associated invertebrate population, especially in the upper intertidal. Data collected during the 1995 field season will be incorporated into the existing Herring Bay database and the rates and extents of recovery determined for injured resources.

Chief Scientist's Comments

This is a project that was funded from 1990 through 1995, with close-out scheduled for FY 96. The budget appears to be high for a close-out project.

Trustee Council Action

Fund. Project is close-out (data analysis and report writing only) for studies previously funded by the Trustee Council.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96090	Mussel Bed Restoration and Monitoring	NOAA	NOAA	5th yr. 5 yr. project	$209.7	$205.1	$0.0	$0.0	$0.0	$205.1

Project Description

In FY 96 a comprehensive report will be produced synthesizing and summarizing four years of studies on the persistence of oiling in mussel beds in PWS and the Gulf of Alaska and restoration of 12 of these beds. Chemical analyses of mussel and sediment samples collected in 1995 will be completed early in 1996. No new sample collection or site visits are proposed for FY 96.

Chief Scientist's Comments

It is essential to complete this close-out project but the budget appears to be high. The labor for the report writing is very high, given the donation of time by NOAA (which is recognized and appreciated).

Trustee Council Action

Fund. Project would close-out previous study on contamination of mussel beds by oil. Oiled mussel beds may be a pathway for on-going contamination of nearshore vertebrate predators. Information gathered could lead to further cleaning and restoration of mussel beds.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96106	Subtidal Monitoring: Eelgrass Communities	ADFG	Jewett/UAF	6th yr. 6 yr. project	$253.1	$253.1	$0.0	$0.0	$0.0	$253.1

Project Description

This project would provide funds to write the final report for Project 95106. The budget reflects projected costs of sample analysis, data analysis, and report preparation. The final report will incorporate and compare all data collected since 1991.

Chief Scientist's Comments

This is a close-out project for work previously funded by the Trustees. The investigator is doing a very good job on subtidal studies.

Trustee Council Action

Fund. This project closes out work funded in previous years.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96161	Differentiation and Interchange of Harlequin Duck Populations Within N. Pacific Region	DOI	DOI	1st yr. 2 yr. project	$230.4	$81.1	$78.9	$0.0	$0.0	$160.0

Project Description

Harlequin ducks range widely throughout the oil-spill area, but little is known about whether the regional population consists of a single stock or multiple, discrete subpopulations. Recent advances in avian genetics enable cost-effective sampling of harlequin ducks in Prince William Sound, Kodiak Island, the Alaska Peninsula, and other locations to assess the degree of differentiation within and interchange among harlequin ducks in the oil-spill area.

Chief Scientist's Comments

This proposal has been revised to shift emphasis from testing use of satellite transmitters to use of genetic markers to understand the geographic structure and interchange within the northern Gulf of Alaska population of harlequin ducks. This work should aid interpretation of recovery from the oil spill and yield useful information for management of this species, which is harvested for sport and subsistence purposes. I recommend funding at this time.

Trustee Council Action

Fund. This project has been recast with an emphasis on genetics as a way to look at the population structure and interchange among harlequin ducks in the northern Gulf of Alaska. This information will contribute to restoration and management goals in Prince William Sound and elsewhere in the oil-spill area.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	NOAA	NOAA	5th yr. 11 yr. project	$119.8	$116.1	$121.0	$120.0	$470.0	$827.1

Project Description

This project is a continuation of the NRDA and Restoration database management, hydrocarbon interpretation and sample storage service. Subsistence response and restoration data will continue to be incorporated into the Trustee hydrocarbon database. A summary report for investigators and managers will be produced with an electronic copy of the database, that will allow easier access to this information. New user groups of the database will be identified, and tailored user interfaces will be generated.

Chief Scientist's Comments

This is an excellent proposal. The work is necessary to support the many projects, both past and present, that continue to face the task of obtaining and correctly interpreting environmental hydrocarbon data.

Trustee Council Action

Fund. Project is on-going analysis of hydrocarbon data for other Trustee Council funded studies. This project will make these data available to the scientific community and the public, including "on-line" via the computer Internet.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96427	Harlequin Duck Recovery Monitoring	ADFG	ADFG	3rd yr. 4 yr. project	$261.1	$261.1				$261.1

Project Description

This project will compare population parameters between oiled and unoiled areas based on population structure, behavior, production, and growth rates. Shoreline boat surveys will be conducted simultaneously. Changes in population size, structure, and production in oiled and unoiled areas and between years will be compared. Continued population monitoring and brood surveys will allow us to assess trends and suggest factors limiting recovery.

Chief Scientist's Comments

Harlequin ducks were seriously impacted by the oil spill, and there continues to be concern about their status, especially in western Prince William Sound. Based on the review session this fall, the investigators have made excellent progress in developing an approach to comparing the health of populations in eastern and western parts of the Sound. This work needs to go forward, and I recommend funding this project in FY 96.

Trustee Council Action

Fund. This project continues basic assessment of recovery status of harlequin ducks in Prince William Sound.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Seabird/Forage Fish Ecosystem Project					$1,982.6	$1,800.7	$1,750.7	$1,750.7		$5,302.1
96163	APEX: Apex Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska	NOAA DOI	NOAA/DOI	2nd yr. 5 yr. project	$1,982.6	$1,800.7	$1,750.7	$1,750.7		$5,302.1

Project Description

This study will use seabirds as "probes" of the trophic environment of PWS and compare their reproductive and foraging biologies with similar measurements from the Barren Islands, an area with more suitable or abundant food. Measurements will be compared with hydroacoustic and net samples of fish to calibrate seabird performance with fish distribution and abundance. The project will use fish samples to compare diet, energetics and reproductive parameters of different forage-fish species to determine whether competitive and predatory interactions or different responses to the environment may be favoring the abundance of one fish species over another.

Chief Scientist's Comments

This project was undertaken on a pilot basis in FY 1995, and remarkable progress was achieved in demonstrating the link between seabird productivity and forage fish populations in the oil-spill area. The intercolony comparisons have provided qualitative evidence of food limitation of seabird colonies, which is essential to successful testing of the APEX hypotheses. However, there are substantial challenges ahead in documenting these relationships on a quantitative basis. In the future, the emphasis of this work should shift from deep water to nearshore environments, because most of the important interactions between seabirds and forage fish take place there. Preliminary analysis of historical trawl-catch data in the Gulf of Alaska has been extremely helpful showing how long-term and potentially large-scale changes in the composition of crustacean and fish populations might affect marine bird and mammal populations. This historical work, coupled with the current field investigations, may lead to significant improvement in the ability to understand, predict, and manage the spill-area ecosystem on a sustained basis. I recommend funding this work on a full-scale basis in FY 1996.

Trustee Council Action

Fund. The pilot effort in FY 95 has shown a link between forage fish and seabird productivity. The scientific reviewers are enthusiastic about the prospect that this work will yield results that are of benefit to the marine ecosystem in Prince William Sound and the northern Gulf of Alaska.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Seabird/Forage Fish -- Related Projects					$907.8	$610.3	$145.5	$39.9	$0.0	$795.7
96031	Development of a Productivity Index to Monitor the Reproductive Success of Marbled and Kittlitz's Murrelets in Prince William Sound, Alaska	DOI	DOI	2nd yr. 4 yr. project	$254.6	$77.6	$50.0	$39.9	$0.0	$167.5

Project Description

This project was proposed to develop a means to monitor the productivity of marbled and Kittlitz's murrelets. The reproductive success of these two non-colonial seabirds cannot be monitored using standard techniques. To develop a productivity survey protocol, murrelets would be surveyed at sea to determine the timing and abundance of juveniles, the ratio of juveniles to adults and the coastal and marine features that best predict juvenile abundance. By monitoring murrelet productivity in relation to population trends, this index could eventually be used to determine what factors influence murrelet recovery.

Chief Scientist's Comments

An index of marbled murrelet productivity is a desirable product of the restoration program. However, I believe that further work on marbled murrelets will be most valuable after there has been a concerted effort to synthesize the results of past work and to explore the possible integration of murrelet work into the larger Seabird-Forage Fish (APEX) project. Thus, I recommend only limited additional funding to enable progress in these areas. I do not recommend additional field work now.

Trustee Council Action

Fund. The Chief Scientist recommended that future field work on marbled murrelets be considered in the context of the APEX (96163) predator project. FY 96 funding is for the principal investigator to synthesize and publish prior Trustee-supported work on marbled murrelets and to fully explore integration with APEX.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96038	Publication of Seabird Restoration Workshop	DOI	Pac Seabird Gr	2nd yr. 2 yr. project	$31.0	$22.2	$0.0	$0.0	$0.0	$22.2

Project Description

The Trustee Council funded the Pacific Seabird Group (PSG) to hold a workshop in September 1995 to bring together experts in seabird biology and restoration. It included discussions of the theoretical and practical aspects of seabird restoration and provided recommendations for restoration plans founded on the best available scientific information and opinion. This proposal seeks funds for the writing and publishing of manuscripts summarizing the workshop discussions.

Chief Scientist's Comments

With support from the Trustees, the Pacific Seabird Group held a very successful symposium on seabird restoration in September 1995. This event has produced technical reviews that bring together information that has not been summarized before. These reviews, and the resulting recommendations, are of great value to restoration following the *Exxon Valdez* oil spill and other such events. This information deserves to be circulated widely, and I recommend support of this modest proposal.

Trustee Council Action

Fund. The Pacific Seabird Group Symposium on Seabird Restoration, which was supported by the Trustees, was highly successful and deserves wide circulation in a published format. Trustee Council funds will supplement funds from other sources.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96101	Removal of Introduced Foxes From Islands	DOI	DOI	3rd yr. 3 yr. project	$88.9	$8.4	$0.0	$0.0	$0.0	$8.4

Project Description

This project proposes to remove introduced arctic foxes from Sequan Island as a means of allowing populations of three species of birds injured by the oil spill (black oystercatcher, pigeon guillemot and common murre) to increase. Although it is outside the area directly affected by the oil spill, Seguam Island has a particularly high potential for restoring populations of these species because it contains substantial amounts of habitat and remnant populations of all three species are present.

Chief Scientist's Comments

I have supported fox removal as a highly effective but low cost restoration technique. One issue is that Seguam Island is far from the spill zone. Target species were injured by the spill, but would have to be justified on replacement/equivalent resource basis. Every opportunity to take concrete measures of program effectiveness should be used.

Trustee Council Action

Fund close-out of prior work (95041). Do not fund new work at Seguam Island because the benefit to spill-affected populations is not established.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96142-BAA	Status and Ecology of Kittlitz's Murrelet in Prince William Sound	NOAA	ABR, Inc.	1st yr. 1 yr. project	$168.7	$168.7				$168.7

Project Description

This project would investigate the status and ecology of Kittlitz's Murrelet, a rare seabird breeding in glaciated fjords of Prince William Sound. The study will evaluate the abundance, distribution, and productivity of this little known seabird and assess its habitat use and feeding habits in northwestern PWS. Given uncertainty about the effects of the oil spill on this species, a better understanding of its status and ecology is required to ensure its long-term conservation.

Chief Scientist's Comments

This is an excellent proposal on a bird species that was perhaps the most injured of any by the spill. Our knowledge of this species is so sketchy that this project is justified. This project may be useful for discovering restoration actions. The investigator is well qualified with an extensive background in alcid biology. The study should be reviewed after the first year to assess progress and whether the mapping work will be done at a sufficiently large scale to be of use on the ground.

Trustee Council Action

Fund FY 96 only; future years' funding dependent on FY 96 results. Kittlitz's Murrelet has a small world-wide population, and, proportionate to that population, it may have been the species hardest hit by the oil spill. This study will gather basic information on a rare, poorly known seabird, which may lead to identification of restoration measures.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96144	Common Murre Population Monitoring	DOI	DOI	1st yr. 7 yr. project	$101.7	$70.5	$70.5			$141.0

Project Description

The project is designed to determine whether common murre populations at a series of index colonies within the area affected by the oil spill are recovering. This objective would be accomplished by counting murres at all five locations to document the presence or absence of post-spill population trends. Each location would be surveyed every 3 years, but the field work is proposed so that a portion of it would be accomplished annually (i.e. colonies in the western portion of the spill zone would be surveyed in FY 96, central colonies would be counted in FY 97, and the eastern-most colonies would be visited in FY 98).

Chief Scientist's Comments

Documenting the recovery of murres in the Barren Islands is a key part of understanding the long-term effects of the oil spill. In addition, study of murres in the Barren Islands provides key data for testing hypotheses in the Seabird-Forage Fish (APEX) program. I do not believe that it is essential that we monitor murre colonies elsewhere in the Gulf of Alaska at this time. Thus, I recommend funding a full population census of Barren Island murres to supplement the APEX (96163) work in the Barren Islands.

Trustee Council Action

Fund. Rather than start a multi-year commitment to monitoring common murre populations at a series of Gulf of Alaska colonies, current efforts will be focused on the Barren Islands. Population censuses at the Barren Islands will be very helpful in terms of the APEX study, as well as to track murre recovery at this critical group of colonies.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96159	Surveys to Monitor Marine Bird Abundance In Prince William Sound During Winter and Summer 1996	DOI	DOI	1st yr. 2 yr. project	$262.9	$262.9	$25.0			$287.9

Project Description

This project would conduct small boat surveys to monitor abundance of marine birds and sea otters in PWS during March and July 1996. Previous surveys have observed more than 65 bird and eight marine mammal species in PWS. Data collected in 1996 will be used to examine trends from summer 1989-96 and from winter 1990-96 by determining whether populations in the oiled zone changed at the same rate as those in the unoiled zone. Overall population trends for PWS from 1989-96 also will be examined.

Chief Scientist's Comments

This is a solid proposal for monitoring seabirds and sea otters. The surveys have been done since 1989 and there are similar data from 1984 - 85. The proposers have done a power analysis that indicates a low power of detecting change in populations with infrequent sampling. The proposed biannual monitoring schedule appears reasonable in light of the analysis, but future commitments should be reviewed with regard to balance between monitoring injured resources and ecological investigations.

Trustee Council Action

Fund for this monitoring cycle only. Future monitoring will be evaluated when proposed. The surveys provide basic information on status and recovery of an entire suite of marine birds (and sea otters) in PWS.

Subsistence Projects					$1,628.4	$1,352.2	$1,226.0	$957.5	$1,594.8	$5,130.5
96009D	Survey of Octopuses in Intertidal Habitats	USFS	PWSSC	2nd yr. 3 yr. project	$142.3	$142.3	$40.9	$0.0	$0.0	$183.2

Project Description

This project addresses concerns that octopus and chiton have been depleted by EVOS and that subsistence uses are impaired. The first year (FY95) was to establish the feasibility of working on octopus in the Sound, identify suitable study sites, and evaluate techniques. The second year (FY96) will focus on identifying optimal habitat characteristics in the intertidal and subtidal area where octopus are harvested. Close-out costs are requested in the third year (FY97).

Chief Scientist's Comments

The pilot project in FY 1995 was successful in developing survey methods and preliminary habitat models for octopus in Prince William Sound. This project provides a good model of how an investigator and community residents work together to combine their knowledge and approaches. If these surveys are now carried out, it will produce information valuable for management of a species that is an important subsistence resource. I recommend continued funding to implement the methods developed in the pilot project.

Trustee Council Action

Fund. Project addresses the concern that octopus and chiton stocks were depleted by the oil spill and that subsistence uses are impaired. FY 95 pilot effort was successful in locating octopus in Prince William Sound, developing survey methods, and providing information about the life history of octopus.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96052	Community Involvement & Use of Traditional Knowledge	ADFG	ChugachRRC	2nd yr. 8 yr. project	$271.0	$271.0	$250.0	$250.0	$1,000.0	$1,771.0

Project Description

This project, submitted by the Chugach Regional Resources Commission (CRRC), will continue a program begun in FY 95. This project will encourage and facilitate communication among the Trustee Council, researchers working on oil spill restoration projects, regional organizations and residents of communities impacted by the oil spill. The project includes a pilot effort to integrate western science and Traditional Ecological Knowledge to further the restoration program.

Chief Scientist's Comments

Addresses needed restoration work by furthering interactions between EVOS scientists and community members.

Trustee Council Action

Fund. This project continues a program to facilitate communication and interaction among the Trustee Council, scientists, and residents of communities impacted by the oil spill.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96127	Tatitlek Coho Salmon Release	ADFG	Tatitlek IRA	2nd yr. 5 yr. project	$52.7	$26.6	$15.9	$15.9	$15.9	$74.3

Project Description

Project will create a coho salmon return to Boulder Bay near Tatitlek village. Enough coho eggs to produce 20,000 smolts will be collected from an ADF&G approved stream, incubated and reared to smolt at the Solomon Gulch Hatchery, transported and held for two weeks in net pens in Boulder Bay before release. Release will produce a 2,000 to 3,000 adult return to Boulder Bay for harvest in a subsistence fishery.

Chief Scientist's Comments

Excellent project, technically sound, highly feasible. However, Trustee Council funding should be limited to maximum of one life cycle of coho (approximately 4 years).

Trustee Council Action

Fund. Fund for four years (one coho life cycle). Project will create a coho salmon run near Tatitlek as a replacement resource for subsistence resources injured by the oil spill.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96131	Chugach Native Region Clam Restoration	ADFG	ChugachRRC	2nd yr. 5 yr. project	$405.6	$274.9	$413.6	$417.4	$417.4	$1,523.3

Project Description

Resident clam populations near the Native villages of Port Graham, Nanwalek, and Tatitlek will be re-established to restore diminished subsistence opportunities. The Qutekcak hatchery in Seward will annually provide about 800,000 juvenile littleneck clams, cockles and, if possible, butter clams for seeding. Historical information, local and agency expertise, and research will be used to identify areas to seed and methods used. Total seeded area will not exceed 5 hectares. In addition, beaches will be surveyed in Chenega and Ouzinkie for possible future seeding. Also, Eyak razor clams will be identified and work will be initiated to protect the existing clam populations from natural predators.

Chief Scientist's Comments

This project was successful in spawning little-neck clams and raising their spat, and it has the potential of making an important contribution to restoration of subsistence use of clams. However, there is need for continued development of hatchery techniques, which will require consultation with experts who have appropriate experience. I recommend continued support of this project, emphasizing development of hatchery techniques that eventually may be applied on a larger scale.

Trustee Council Action

Fund continuing pilot effort in Port Graham, Nanwalek, and Tatitlek. Fund initial beach surveys in Chenega and Ouzinkie, and analysis of clam predator problem in Cordova (Native Village of Eyak). Funding is contingent on approval of Detailed Project Description, which must address hatchery issues raised by peer reviewers. Project is intended to establish subsistence clam populations as replacement for subsistence resources injured by the oil spill.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96210	Prince William Sound Youth Area Watch	ADFG	Chugach RRC	1st yr. 3 yr. project	$233.4	$115.0	$100.0	$100.0	$0.0	$315.0

Project Description

Students from Chenega Bay, Tatitlek and some outlying areas will participate in research projects identified by the Prince William Sound Science Center and other EVOS researchers. The objective is to increase the awareness of youth regarding the effects of the oil spill and encourage their involvement in research/restoration. Students will be involved in oceanographic testing, fish monitoring, bird and mammal observations, pristane/mussel analysis and octopus studies.

Chief Scientist's Comments

A solid proposal for a pilot project to involve local youth in the scientific aspects of the restoration program. Well presented and integrated proposal.

Trustee Council Action

Fund as a pilot project. Project allows youth to participate in ongoing restoration projects.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96214	Documentary on Subsistence Harbor Seal Hunting in PWS	ADFG	Tatitlek Village	1st yr. 1 yr. project	$77.4	$77.4	$0.0	$0.0	$0.0	$77.4

Project Description

The purpose of this project is to make a documentary on subsistence hunting of harbor seals in PWS. This video will document all facets of harbor seal hunting including the ecological and biological knowledge hunters use to hunt harbor seals. By documenting this knowledge, the project will enhance the restoration of the seal population by providing an indigenous hunter's perspective on harbor seal ecology.

Chief Scientist's Comments

Project is an excellent idea. Will directly serve the interests of the communities, and will assist restoration of harbor seals by allowing subsistence users to make better decisions about the resource.

Trustee Council Action

Fund.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96220	Eastern PWS Wildstock Salmon Habitat Restoration	USFS	Eyak Nat Vill	1st yr. 3 yr. project	$92.0	$92.0	$115.0	$12.0	$0.0	$219.0

Project Description

This project will replace lost subsistence services resulting from the oil spill by increasing wild salmon production in eastern Prince William Sound. Instream fisheries habitat improvement techniques, primarily the installation of log structures, will be employed by local subsistence users to increase the capability of selected streams to produce additional salmon.

Chief Scientist's Comments

Good community involvement. Compatible with Trustee Council guidelines on fish supplementation. Excellent technically.

Trustee Council Action

Fund. This project will replace subsistence services lost due to the oil spill by increasing wild salmon production in Prince William Sound.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96222	Chenega Bay Salmon Restoration -- Anderson Creek	USFS	Chenega IRA	1st yr. 2 yr. project	$17.1	$16.1	$56.4	$0.0	$0.0	$72.5

Project Description

This project will investigate the potential for opening up additional spawning and rearing habitat for salmon by installing a fish pass on a six-foot barrier falls located near the upper tide zone on Anderson Creek. Anderson Creek is located in Crab Bay on Evans Island, near the village of Chenega Bay. Target species are pink, coho, and chum salmon. In 1996 the stream will be surveyed and evaluated for enhancement and an Environmental Assessment will be completed. In 1997 the fish pass will be installed.

Chief Scientist's Comments

This project will supplement a depleted wild stock of pink salmon at Chenega Bay. The revised proposal has addressed concerns about effects of other indigenous species and nearby wild stocks of pink salmon. I recommend funding to complete the preliminary work needed to implement this project.

Trustee Council Action

Fund. Project will replace subsistence services lost due to the oil spill by opening up additional spawning and rearing habitat for salmon on Anderson Creek near the village of Chenega.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96225	Port Graham Pink Salmon Subsistence Project	ADFG	Port Graham	1st yr. 5 yr. project	$95.3	$95.3	$83.1	$77.2	$161.5	$417.1

Project Description

This project will help supply pink salmon for subsistence use in the Port Graham area during the broodstock development phase of the Port Graham hatchery. Because local runs of coho and sockeye salmon, which are the more traditional salmon subsistence resources, are at low levels, pink salmon are now heavily relied on for subsistence This project will help ensure that pink salmon remain available for subsistence use until the more traditional species are rejuvenated.

Chief Scientist's Comments

Potentially worthwhile project that should supplement pink salmon production for the benefit of subsistence users.

Trustee Council Action

Fund. Project is intended to increase the availability of pink salmon for subsistence use, replacing runs of coho and sockeye salmon depleted since the oil spill.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96244	Community-Based Harbor Seal Management and Biological Sampling	ADFG	ANHSC	3rd yr. 5 yr. project	$128.5	$128.5	$100.0	$85.0	$0.0	$313.5

Project Description

The goal of the project is to facilitate the involvement of subsistence users of harbor seals in the restoration of this species through two workshops, conducting biological sampling, collection and application of traditional knowledge, and development of a traditional knowledge database. A subcontract with the Alaska Native Harbor Seal Commission will contribute to developing a meaningful role for subsistence hunters in research and restoration activities.

Chief Scientist's Comments

This is a well integrated and technically feasible project.

Trustee Council Action

Fund. This project will follow through on recommendations from workshops supported through previous Trustee Council projects. Subsistence users will be involved in harbor seal restoration through collecting biological samples from subsistence-taken animals, and a traditional knowledge database will be developed and distributed.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96256	Columbia and Solf Lakes Sockeye Salmon Stocking	USFS	USFS	1st yr. 1 yr. project	$60.8	$60.8				$60.8

Project Description

This project would assess the feasibility of establishing self-sustaining runs of sockeye salmon in Solf Lake and Columbia Lake. Solf Lake is located in Herring Bay on Knight Island. Data suggest it could annually produce returns of 19,000 to 22,000 sockeye. Columbia Lake is located in Heather Bay near the Columbia Glacier. Data indicate that the lake could annually produce returns of 10,000 to 29,000 sockeye.

Chief Scientist's Comments

There appear to be reasonable prospects for successful establishment of self-sufficient sockeye salmon runs at Solf and possibly Columbia lakes. This is of considerable interest to subsistence users in Prince William Sound, and this project would more fully explore its feasibility. I recommend funding of this feasibility study in FY 1996.

Trustee Council Action

Fund feasibility study. If feasible, this project could provide sockeye salmon to aid PWS subsistence, sport, and commercial fisheries.

96272	Chenega Chinook Release Program	ADFG	PWSAC	3rd yr. 4 yr. project	$52.3	$52.3	$51.1	$0.0	$0.0	$103.4

Project Description

Chinook salmon incubated and reared at the Wally Noerenberg Hatchery will be released in Crab Bay, adjacent to the native community of Chenega. Adult salmon returning to the site of release will provide replacement resources and associated services injured by the oil spill. Two releases have taken place (1994 & 1995) as part of this multi-year project. Adult salmon will begin returning in 1996 and 1997, with larger numbers projected at nearly 1,000 adult fish returning in 1998 and thereafter.

Chief Scientist's Comments

Excellent proposal. Good match with Trustee Council's fish supplementation criteria. Good local involvement. Suggest continued Trustee Council funding through at least FY 97, pending project review in Fall 1996 to assess effectiveness.

Trustee Council Action

Fund through one full chinook salmon life cycle (at least FY 97). Review effectiveness in fall of 1996. Project will provide replacement resources for subsistence salmon injured by the oil spill. However, the proposers should develop a plan for a transition to non-Trustee funding.

Archaeological Resources					$505.6	$504.2	$195.0	$195.0	$135.0	$1,029.2
96007A	Archaeological Index Site Monitoring	ADNR	ADNR	2nd yr. 5 yr. project	$146.5	$145.1	$135.0	$145.0	$135.0	$560.1

Project Description

Monitoring of archaeological sites on public land injured by vandalism and oiling will concentrate on a sample of index sites in the three regions of the spill. Oiled sites will be tested for re-introduced oil. The 10-year project will end at five years if monitoring shows no continued injury.

Chief Scientist's Comments

This is an excellent proposal that represents the minimum that can be done in archaeological site monitoring. There is a need to continue consultations with Native groups.

Trustee Council Action

Fund. The project provides continued monitoring of archaeological sites injured by vandalism and oiling. The ten-year project will end at five years if monitoring shows no continued injury. The proposer should continue and expand consultation with Native groups.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96007B	Site Specific Archaeological Restoration	USFS	USFS	3rd yr. 3 yr. project	$78.4	$78.4	$0.0	$0.0	$0.0	$78.4

Project Description

Funding is requested for the final phase of the Forest Service's archaeological restoration at sites SEW-440 and SEW-488. Project 96007B is a continuation of projects 94007 and 95007B. Analysis and interpretation of data gathered during previous field work will result in a peer-reviewed final report. This will complete the restoration process initially prescribed for these sites in 1991.

Chief Scientist's Comments

This is a close-out of a previously funded project. The budget appears reasonable. Continued consultations with Native groups are required by federal law.

Trustee Council Action

Fund. Proposer should continue consultation with Native groups. Project closes out previously funded work to restore archaeological sites in the spill area.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96149	Archaeological Site Stewardship	ADNR	ADNR	1st yr. 3 yr. project	$74.4	$74.4	$60.0	$50.0	$0.0	$184.4

Project Description

The archaeological site stewardship program will provide training and coordination for a cadre of volunteers to monitor vandalized archaeological sites in the oil spill area beyond the ability of agency monitoring. Volunteer site stewards will protect damaged sites in Kachemak Bay, Uganik Bay, Uyak Bay and the Chignik area of the Alaska Peninsula. Further protection will come from increased local awareness of harm from site vandalism.

Chief Scientist's Comments

The concept was favorably reviewed. This project could serve as a useful model for protection of sites by local residents.

Trustee Council Action

Fund. The project will provide training and coordination for volunteers to monitor vandalized archaeological sites in the oil spill area. This effort is currently beyond the ability of agency monitoring. After FY 98, expenses will be assumed either by volunteer stewards or agency budgets.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
96154	Comprehensive Community Plan for Restoration of Archaeological Resources in PWS and Lower Cook Inlet	USFS	Chugach HF	1st yr. 1 yr. project	$206.3	$206.3				$206.3

Project Description

The proposed project would develop a comprehensive community plan for restoring archaeological resources in Prince William Sound and Lower Cook Inlet, including strategies for storing and displaying artifacts at appropriate facilities within the spill area. This plan would contribute to restoration objectives by protecting archaeological artifacts, increasing awareness and appreciation of cultural heritage, and replacing resources and services lost as a result of irretrievable damage to some archaeological artifacts.

Chief Scientist's Comments

A well presented and complete proposal for local restoration of archaeological resources affected by the spill, concentrating on storage and display of artifacts in the spill area. I recommend this planning effort.

Trustee Council Action

Fund. Project description has been revised to reflect a comprehensive community planning effort.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Reducing Marine Pollution					$29.6	$28.3				$28.3
96115	Sound Waste Management Plan	ADEC	PWS Econ DC	2nd yr. 2 yr. project	$29.6	$28.3				$28.3

Project Description

The Sound Waste Management Plan is a comprehensive plan to identify and remove the major sources of marine pollution and solid waste in PWS that may be affecting recovery of resources and services injured by the *Exxon Valdez* Oil Spill. This request completes the first phase -- planning begun in FY 95. The following phases of the plan will be to implement these solutions using funds from a variety of sources, possibly including the Trustee Council.

Chief Scientist's Comments

Prior work won't come to fruition if these final funds are not supplied in 1996. In theory, this project could speed recovery of injured species but those linkages are not clear. Future funding requests need close scrutiny.

Trustee Council Action

Fund. Project completes comprehensive planning for PWS communities to determine appropriate strategies for minimizing marine pollution, some of which may be affecting recovery of injured resources and services.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Habitat Improvements					$674.4	$560.6	$800.0	$600.0	$0.0	$1,960.6
96180	Kenai Habitat Restoration & Recreation Enhancement Project	ADNR	ADNR	1st yr. 3 yr. project	$674.4	$560.6	$800.0	$600.0	$0.0	$1,960.6

Project Description

Adverse impacts to the banks of the Kenai River total approximately 19 miles of the river's 166 mile shoreline. Included in this total are 5.4 river miles of degraded shoreline on public land. Riparian habitats have been impacted by trampling, vegetation loss and structural development. This riparian zone provides important habitat for pink salmon, sockeye salmon and Dolly Varden, species injured by the *Exxon Valdez* oil spill. The project's objectives are to restore injured fish habitat, protect fish and wildlife habitat, enhance and direct recreation and preserve the values and biophysical functions that the riparian habitat contributes to the watershed.

Chief Scientist's Comments

This is a well presented proposal, and the supplementary information provided helps to clarify the relationship to work that is being carried out with funds provided from the *Exxon Valdez* criminal settlement and other sources. This is a strong project aimed at the direct restoration of habitats that are important to the recovery of sockeye and other fish species of commercial and recreational importance.

Trustee Council Action

Fund. This project will aid restoration of habitat for the benefit of sockeye salmon and other fish species of commercial and recreational importance.

Proj. No.	Title	Lead Agency	Proposer	Project Duration	FY 96 Request	FY 96 Approved	FY97 Estimate	FY 98 Estimate	FY 99 to end Estimate	Total FY 96 to end Estimate
Information Support					$42.0	$42.0	$0.0	$0.0	$0.0	$42.0
96507	EVOS Symposium Publication	NOAA	NOAA		$42.0	$42.0	$0.0	$0.0	$0.0	$42.0

Project Description

The *Exxon Valdez* Oil Spill Symposium was held in February 1993. The Trustee Council funded publication and distribution of the symposium proceedings in FY94 with a budget of $102,000. The length of the proceedings is now expected to be 51% longer than originally planned and the American Fisheries Society (AFS), the publisher, needs an additional $35,000 to complete the project.

Chief Scientist's Comments

Chief Scientist did not review this proposal.

Trustee Council Action

Fund. This project completes the funding necessary to publish and distribute the proceedings of the 1993 Oil Spill Symposium. Publication furthers the Trustee Council's public information goals.

See next page for summary of FY 96 Work Plan.

Summary of the FY 96 Work Plan

Resource/Service Cluster	Approved in FY 95	FY 96 and Estimated Future Costs				
		FY 96	FY 97	FY 98	FY 99 to End	FY 96 to End
Pink Salmon	$2,543.5	$2,017.5	$1,268.5	$775.2	$163.8	$4,225.0
Herring	$2,103.5	$1,323.0	$930.6	$708.7	$0.0	$2,962.3
Sound Ecosystem Assessment (SEA)	$4,612.8	$4,533.4	$3,600.0	$2,600.0		$10,733.4
SEA Program -- Related Projects	$0.0	$114.8	$85.0	$85.0	$0.0	$284.8
Sockeye Salmon Program	$1,569.7	$1,286.2	$391.0	$0.0	$0.0	$1,677.2
Cutthroat and Dolly Varden Trout	$134.8	$229.6	$200.0	$100.0	$0.0	$529.6
Marine Mammal Program	$913.2	$812.8	$687.3	$275.1	$25.0	$1,800.2
Nearshore Ecosystem	$3,112.4	$2,989.2	$1,869.3	$1,789.4	$920.0	$7,567.9
Seabird/Forage Fish Ecoystem Pjct	$1,262.9	$1,800.7	$1,750.7	$1,750.7		$5,302.1
Seabird/Forage Fish -- Related	$617.9	$610.3	$200.3	$83.9	$458.5	$1,353.0
Subsistence	$1,006.9	$1,352.2	$1,226.0	$957.5	$1,594.8	$5,130.5
Archaeological Resources	$457.7	$504.2	$195.0	$195.0	$135.0	$1,029.2
Reducing Marine Pollution	$516.7	$28.3				$28.3
Habitat Improvements	$286.6	$560.6	$800.0	$600.0	$0.0	$1,960.6
Information Support	$0.0	$42.0	$0.0	$0.0	$0.0	$42.0
Research Facilities	$0.0	$0.0				$0.0
Total: Monitoring, Research, and General Restoration	**$19,138.6**	**$18,204.8**	**$13,203.7**	**$9,920.5**	**$3,297.1**	**$44,626.1**
Public Information, Science Management, and Administration	$4,208.9	$3,439.6	$3,200.0	$2,800.0	$7,200.0	16.625.1
Habitat Protection/Acquisition Support	$1,111.8	$2,000.0	$170.0	$115.0	$115.0	$1,241.8
Restoration Reserve	$12,000.0	$12,000.0	$12,000.0	$12,000.0	$48,000.0	$84,000.0
Total, All Activities	**$36,459.3**	**$35,644.4**	**$28,573.7**	**$24,835.5**	**$58,612.1**	**$129,867.9**