19.08.01 (1 of 16)

19.08.01

FY 2000 DPDs and Budgets

19.8.1

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

MEMORAN

ROUTING & REQUEST

Please... To: Paula

- ☐ Read — Double check to see if this is already
- ☑ Handle — in the binder
- ☐ Approve — Please make 1 double sided copy.

And...

- ☐ Forward — From: Rebecca
- ☑ Return orig + copy to me
- ☐ Keep or Toss — low priority
- ☐ Review with Me — Date: 6-28-99

Post-it™ 7664 ©3M 1993

TO: Trustee Council Members

FROM: Molly McCammon
Executive Director

DATE: May 14, 1999

RE: FY00 Public Information, Scienc
(00100) Proposal

Enclosed with this memorandum are a draft Detailed Project Description (DPD) and draft budget for the Fiscal Year 2000 Public Information, Science Management and Administration (00100) project. The total proposed for FY00 is $2,047,900. This represents a decrease of $447,800 from the amount of funding approved for FY99 and is within the $2.1 million target for administration established by your March 1, 1999 resolution.

One component of the reduction regards the budgetary contribution that the Trustee Council will make to the Alaska Resources Library and Information Services Center (ARLIS) in FY00. Since the opening of ARLIS in FY98, the Trustee Council has supported two librarians and other associated costs. The amount of funding proposed to be allocated to ARLIS for FY00 is consistent with discussions that occurred when ARLIS was established. Specifically, the FY00 budget eliminates one librarian but holds all other contributions constant.

While no reduction is being proposed to the Chief Scientist and peer review contract in this draft, I am currently working with the Chief Scientist to determine if reductions in FY00 are appropriate. I am hopeful we can achieve some additional savings in that component.

A major portion of the proposed FY00 reduction is contained in the Restoration Office component of the budget. This draft deletes the Director of Operations, the Microcomputer Technician and one professional staff member.

The third component of the reduction is contained in the Public Advisory Group (PAG) budget. The Administrative Assistant has been transferred to the Operations component. This transfer more accurately reflects that for the last few years this

19.8.1

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

MEMORANDUM

TO: Trustee Council Members

FROM: Molly McCammon
Executive Director

DATE: May 14, 1999

RE: FY00 Public Information, Science Management and Administration (00100) Proposal

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The third component of the reduction is contained in the Public Advisory Group (PAG) budget. The Administrative Assistant has been transferred to the Operations component. This transfer more accurately reflects that for the last few years this

position has provided support for all the public information components of the restoration program, as well as the Public Advisory Group. The budget also reduces the travel category by eliminating a field trip in FY00 and reducing the number of in-person meetings.

The final component of the reduction is contained in the Liaison Support budget. As you are aware, this budget includes funding to support Agency Liaisons as well as travel funds for trustees and liaisons to attend Trustee Council meetings. Prior to FY97, the budget included funding to support a full-time Liaison in each agency. Beginning in FY97, that support was reduced to six months funding to reflect reduced liaison functions. The proposal for FY00 is to further reduce support for the Liaison to three months.

The reduction proposed in Liaison Support is consistent with a reduction in the overall Restoration Program. In FY97, the Work Plan approved by the Trustee Council was $16 million and a number of large and small habitat acquisitions were under active negotiation. In addition, a number of major policy decisions had not been made, the most important being a decision regarding use of the Restoration Reserve. By contrast, the Work Plan target for FY00 is $8-9 million, half that of FY97, and with the exception of Koniag Phase II and a few small parcels, the habitat program is largely complete. In addition, two major initiatives of the Trustee Council have been decided – use of the Restoration Reserve and a plan for archaeological restoration for Prince William Sound/Lower Cook Inlet. Further, the 10th anniversary of the spill and all the work associated with that milestone – updating the status of the Injured Resources and Services, sponsorship of a major scientific symposium, responding to numerous media inquiries – are completed.

The attached budget represents my best effort to reach the $2.1 million target for the Public Information, Science Management and Administration budget established in the March 1, 1999 resolution. In discussing it with each of you individually, I am aware there is some concern over the proposed reduction in the number of months of liaison funding. As noted, I am recommending three positions in the Restoration Office be deleted in FY00, the elimination of one librarian in ARLIS, significant reductions in PAG travel, and possible reductions in the Chief Scientist contract. The remaining component of the budget is liaison support and, quite frankly, I do not see how we can reach the $2.1 million target – and the even lower target of $1.5 million in FY01 and 02 – without this reduction.

For your information, I have attached a summary of the work that I foresee the liaisons doing in FY00. Most of the tasks are spelled out in the Trustee Council's Procedures. In reviewing the overall program needs for the next three years, I believe that the liaison tasks can be accomplished with three months funding per agency.

The attachment also contains a summary of the work performed by the project managers in each agency. In addition to liaison support, agency participation in the restoration process is supported through the project management budget (Project

00250) and the habitat support budget (Project 00126). Although both of these budgets also will be declining in FY00 and beyond (as the size of the work plan continues to decrease and the habitat program winds down), it is important to consider these additional funding sources as you consider the proposed FY00 Public Information/Science Management/Administration budget. In addition, each agency also receives general administration (GA) funds to cover additional indirect costs.

If you have any questions regarding this memorandum or the enclosures, please do not hesitate to give me a call. I look forward to working closely together as we move the restoration program through this transition phase.

Attachment and enclosures

cc: Agency Liaisons

mm/raw

TRUSTEE AGENCY PARTICIPATION IN THE RESTORATION PROGRAM

Each agency typically receives funding for both an "agency liaison" and one or more "project managers". This funding ensures Trustee agency participation in the restoration program and allows for project oversight and management. As the restoration program has declined in size and cost, the amount of funding for the agency functions has also declined and is projected to continue to decline through 2002 when the transition to the program funded by the Restoration Reserve will be complete. During this same period, the amount of funding for the administrative functions of the Restoration Office is also declining.

The following is a list of tasks assigned to the Liaison and Project Manager positions for FY 00. Most of the tasks are spelled out in the Trustee Council's Procedures. In practice, the functions of the two positions have tended to overlap, and in some agencies (e.g., ADEC), all of the functions are performed by a single individual.

	LIAISON	PROJECT MGR.
Brief Trustee on impacts on their agency of the major tasks and policy considerations before the Council	X	
Represent Trustee in matters related to the restoration program	X	
Obtain information from or facilitate the exchange of information among the Restoration Office, the public, cooperating agencies, and PIs	X	
Coordinate their agency's annual proposal submittal	X	
Participate in development of the Annual Work Plan (primarily reviewing drafts of Invitation, Draft Work Plan, Final Work Plan and attending two Restoration Work Force meetings to develop funding recommendations)	x	
Review the text of the Annual Status Report	x	
Attend the Annual Restoration Workshop	X	X
Attend Restoration Work Force meetings (roughly 4 a year) and, as appropriate, technical review sessions	X	X

	LIAISON	PROJECT MGR.
Review revisions to draft GEM (draft expected to be completed 9/30/99; possible revisions following public review)	X	
Ensure that projects are implemented consistent with the Trustee Council Procedures and/or State and Federal procedures, including NEPA compliance		x
Monitor projects to ensure they meet their stated goals, objectives, and schedules consistent with the funding authorized		x
Administer contracts that implement approved projects, including reviewing and approving invoices		X
Submit quarterly project reports to the Restoration Office, and ensure that annual and final reports and other contract deliverables are acceptable		x
Facilitate the printing/distribution of project reports to ARLIS		x
Track the inventory of equipment purchased with TC funds		x

Science Management, Public Involvement and Administration

Project Number:	00100
Restoration Category:	Science Management, Public Involvement and Administration
Proposer:	Restoration Office
Lead Trustee Agency:	All Trustee Agencies
Alaska SeaLife Center:	NA
Duration:	Ongoing
Cost FY 96:	$3,439,600
Cost FY 97:	$2,940,500
Cost FY 98:	$2,796,300
Cost FY 99:	$2,495,700
Cost FY 00:	$2,047,900
Cost FY 01:	TBD
Cost FY 02:	TBD
Geographic Area:	NA
Injured Resource/Service:	Multiple resources and services

T.C
E. A.L.
w/ memo from molly

ABSTRACT

Project 00100 provides overall support for science management, public involvement and administration of the restoration program through the Restoration Office. This includes funding support for the Trustee Council staff working at the direction of the Executive Director, management of the scientific peer review process, public involvement efforts including the active participation of the 17-member Public Advisory Group (PAG), and support for Trustee agency participation in the restoration program.

Revised: 5/10/99

INTRODUCTION

The Trustee Council, established under the terms of a court approved civil settlement in 1991, is comprised of six members: the Commissioner of the Department of Environmental Conservation, the Commissioner of the Department of Fish and Game; the Attorney General of the State of Alaska; the Secretary of the Department of the Interior; the Secretary of the Department of Agriculture; and the Director of the National Oceanic and Atmospheric Administration. In order to manage the settlement funds as directed by the Trustee Council, the Science Management, Public Involvement and Administration project (00100) provides for overall implementation of the restoration program.

This project makes extensive use of existing Trustee Council agency structures to keep administrative costs to a minimum. The proposed Project 00100 budget continues to make reductions in administrative and management costs as the overall work plan is reduced as directed by the Trustee Council. As proposed in FFY 00, the budget of $2,047,900 has been reduced $447,800 below the FFY 99 budget.

Components of the 00100 Science Management, Public Involvement and Administration project include:

Alaska Resources Library and Information Services - The Alaska Resources Library and Information Services (ARLIS) serves as a central access point for information generated through the Trustee Council restoration process. In addition, ARLIS also acts as the public repository for reports and other materials generated as a result of the cleanup, damage assessment and restoration efforts following the *Exxon Valdez* oil spill.

In FFY 00, the Trustee Council will continue to support one Librarian at ARLIS. In addition, the Trustee Council will also contribute funding to support the building lease and other expenses.

Chief Scientist and Peer Review Process - The Trustee Council and principal investigators need access to the best possible scientific knowledge and understanding concerning injured resources and services. This information has been provided continuously by the Chief Scientist and expert peer reviewers since the injury assessment process started in 1989. The Chief Scientist draws upon a variety of qualified individuals with expertise in specific fields who provide individual reviews of project proposals as well as peer review of final project reports.

Restoration Office - The Restoration Office component includes funding for the Executive Director and staff. The Restoration Office provides for basic restoration program planning and implementation; intergovernmental and interagency coordination; public information; and overall program management functions of the Trustee Council.

Restoration Office staff maintain the Trustee Council's financial records including preparation of the monthly, quarterly and annual financial reports; provide a quarterly report regarding the status of projects funded by the Trustee Council; and works closely with the Chief Scientist in facilitating the scientific review and evaluation process.

The budget also includes funding for public involvement and outreach. This includes funding associated with public meetings and the annual workshop; Public Notice and advertising expenses; all work plan documents (i.e., annual *Invitation*, Draft Work Plan, final Work Plan, Annual Report); the *Restoration Update* newsletters; the Restoration Notebook series; other publications; and postage for mailings. Funding is also included for the annual external audit. In addition, this budget also includes funding for lease and operating costs for offices in Anchorage (645 G Street) and a small Juneau office (in the Federal Office Building).

In FFY00, three positions have been deleted. This includes the deletion of the Director of Operation (.5 FTE), the deletion of the Microcomputer Technician (1.0 FTE) and deletion of the Natural Resources Manager (1.0 FTE). In addition, an Administrative Assistant has been transferred from the PAG component. Funding associated with the Gulf Ecosystem Monitoring Plan (GEM) has been included in the travel and contractual categories to ensure adequate public involvement and review.

Public Advisory Group - The Public Advisory Group (PAG) consists of 17 members, and two *ex-officio* members from the Alaska State Legislature. The PAG includes representatives of major interest groups (e.g., tourism/recreation, commercial fishing, Native landowners, forest products, subsistence, local government, science and academia) and five members representing the public-at-large. The PAG helps provide meaningful public involvement including guidance and input to the Trustee Council on such items as the annual work plans, budgets, and overall implementation of the *Restoration Plan.*

Major changes proposed for FFY 00 include the transfer of an Administrative Assistant to the Restoration Office component and a general reduction in travel.

Liaison Support - The FY 00 budget for Liaison Support includes funding for Trustee agency liaisons as well as travel costs for Trustees to attend Council meetings. Consistent with reductions to the overall work plan, liaison support for FFY 00 has been reduced from six months to three months.

NEED FOR THE PROJECT

The project provides the essential management and administration necessary to efficiently implement the restoration program.

A. Statement of the Problem

Implementation of the restoration program as directed by the Trustee Council and guided by the *Restoration Plan* requires overall scientific management, meaningful public involvement and program administration.

B. Rationale/Link to Restoration

Project 00100 provides essential support to implement the restoration program as directed by the Trustee Council and guided by the *Restoration Plan.*

C. Location

The Trustee Council maintains the Restoration Office in Anchorage (645 G Street, Anchorage, 99501) and a small office in Juneau (709 West 9th Street, Juneau, Alaska, 99801).

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

Project 00100 supports various aspects of community involvement. This includes public information efforts to assist the general public and spill community residents to learn about and more effectively participate in the restoration program process. The FFY 00 budget also reflects support for some costs (rent, phone-fax, copying) associated with the work of the Community Involvement Coordinator (see project /052) who works out of the Restoration Office.

PROJECT DESIGN

A. Objectives

The fundamental objective of the Science Management, Public Involvement and Administration and project is to implement a comprehensive, balanced restoration program consistent with the *Restoration Plan* and Trustee Council actions.

Specific objectives for FFY 00 include:

1. Implement the authorized FFY 00 Work Plan.

2. Provide access to local, state, national, and international users of restoration program information through the Alaska Resources Library and Information Service (ARLIS).

3. Compile, manage, synthesize, and disseminate information about the restoration program, including: (1) production of the Restoration Update newsletter four times per year; and (2) publication of the "Restoration Notebook" series that profiles restoration program knowledge regarding specific injured resources.

4. Oversight and management of the science program, including the peer review and project evaluation process, under the direction of the Chief Scientist and the Science Coordinator.

5. Refinement of the Gulf Ecosystem Monitoring Plan (GEM).

6. Sponsor the annual Restoration Workshop in January 2000, bringing together scientists, agency staff, Trustee Council staff, academia, and members of the general public to review the status of the restoration program through the adaptive management process.

7. Further refine recovery objectives for injured resources as warranted on the basis of restoration project results and findings.

8. Continue habitat evaluations, appraisals and negotiations with willing sellers under both the Large Parcel and Small Parcel Habitat Protection Programs as applicable.

9. Conduct regular meetings of the Public Advisory Group (PAG) as a means of obtaining public input into the Trustee Council process.

10. Work with the Community Involvement Coordinator and Community Facilitators to inform and involve spill area residents about restoration program activities and findings.

11. Develop the FFY 01 Work Plan, including publication of the initial *Invitation for Project Proposals* and preparation of a Draft Work Plan for public comment.

12. Oversight and management of current and prior years' projects funded by the Trustee Council, including the production of quarterly and annual reports.

13. Complete a sixth independent audit.

14. Oversight and management of equipment purchased with settlement funds.

B. Methods

All Trustee Council operations are governed by the state and federal laws and regulations that apply to the respective agencies that comprise the Trustee Council.

C. Cooperating Agencies, Contracts and Other Agency Assistance

Multiple agencies are involved in the implementation of Project 00100. The Alaska Department of Fish and Game is the administering agency for most of the Operations functions, although the National Oceanic and Atmospheric Administration receives funding to pay for lease costs for the Juneau office. In addition, the Alaska Department

of Natural Resources administers the contract for the Chief Scientist/peer review process. The U.S. Department of the Interior receives funding for support in the Federal Budget Office as a well as funding for participation of a federal officer associated with the Public Advisory Group and funding to support the operations at ARLIS. All Trustee agencies receive funding for liaison support.

A variety of contracts will be administered under Project 00100, including the Chief Scientist/peer review contract and the annual external audit. A number of small contracts will also be administered under Project 00100 for support services such as equipment maintenance and publication of documents.

SCHEDULE

The Trustee Council operates on the Federal Fiscal Year (October 1 - September 30).

A. Measurable Project Tasks for FY 00 (October 1, 1999 - September 30, 2000)

Measurable project tasks include holding the Annual Workshop and successful development of the FFY 01 Work Plan (including publication of the initial *Invitation*, followed by a *Draft Work Plan* for public comment and then a final Work Plan following Trustee Council action). Other measurable tasks include meetings of the Trustee Council and the Public Advisory Group, preparation of quarterly financial reports and quarterly project status reports, habitat program status reports, completion of a sixth independent audit, publication of the *Restoration Update* newsletter and the annual restoration program status report.

B. Milestones and Endpoints

Project Authorization Consistent with Trustee Council action:	October-September
Public Review of GEM:	October-December
Trustee Council action on the Final FFY 00 Work Plan:	December
Public FFY 00 Final Work Plan:	December
Annual Restoration Workshop:	January
Scientific Review of GEM:	January-September
Publish FFY 01 *Invitation*:	February
Receive FFY 01 Project Proposals:	April
Scientific/Technical/Policy/Legal Review of Proposals:	April-August
Publish FFY 01 *Draft Work Plan*:	June
Trustee Council action on FY 01 Work Plan:	August
Executive Director authorizations to proceed:	August-September

C. Completion Date

Project 00100 will be complete at the end of Federal Fiscal Year 2000.

PUBLICATIONS AND REPORTS

See above (Measurable Project Tasks).

PROFESSIONAL CONFERENCES

The Project 00100 budget reflects funding for Trustee Council staff to attend national conferences. This includes funding for the Science Coordinator to attend the annual meeting of the American Ornithological Union to confer with experts in seabird ecology and restoration, Restoration Office staff participation in the annual meeting of the Society for Environmental Journalists to provide information concerning the restoration program and travel funds to attend the International Oil Spill Conference.

NORMAL AGENCY MANAGEMENT

Funding in the Project 00100 budget supports the science management, public involvement and administrative functions that are required to implement the *Restoration Plan.* The Restoration Office and the functions included within the Project 00100 budget are budgeted for the sole purpose of supporting restoration program activities and may not be used for other agency purposes.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

At the direction of the Trustee Council, the Executive Director implements Project 00100 to provide overall coordination and integration of the restoration program. As part of the adaptive management process, the Trustee Council sponsors the annual restoration conference that brings together scientists, federal and state resource agency staff, and members of the public to review the status of injured resources and services and refine restoration strategies. In addition, all project proposals are peer reviewed with regard to their coordination and integration aspects. Other coordination efforts include working with the agency liaisons and/or project managers to implement the restoration program.

EXPLANATION OF CHANGES IN CONTINUING PROJECTS

The most significant changes between FFY 99-Project 99100 and FFY 00-Project 00100 is continued reduction in funding in parallel with the overall work plan. At the same time, increased attention is being provided to develop the Gulf Ecosystem Monitoring (GEM) plan.

PROPOSED PRINCIPAL INVESTIGATOR

Not applicable to this project.

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	PROPOSED FFY 2000 TRUSTEE AGENCIES TOTALS					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
			$34.3	$1,393.9	$433.1	$29.9	$103.3	$53.3
Personnel	$1,244.4	$883.2						
Travel	$139.7	$108.2						
Contractual	$842.4	$841.5						
Commodities	$27.0	$27.0						
Equipment	$10.0	$10.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$2,263.5	$1,870.0	Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
General Administration	$232.2	$177.9						
Project Total	$2,495.7	$2,047.9	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	16.9	11.8						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

This budget reflects further reduction of expenses associated with administration of the restoration program .

This budget:
* eliminates remaining funding for the Director of Operations position (-0.5 FTE)
* eliminates one librarian position at ARLIS (-1 FTE)
* eliminates the Network Administrator position (-1 FTE) and moves funds to the contractual line for network and web support
* eliminates the Natural Resources Manager II in the operations component (-1.0 FTE)
* reduces the Federal Budget Officer position from 4 mos. to 2 mos.
* reduces the agency liaison positions from half time to quarter time (-1.5 FTE)

2000

Project Number: 00100
Project Title: Public Information, Science Management and Administration
Agency: Multiple

FORM 2A
MULTI-TRUSTEE AGENCY SUMMARY

PREPARED: 5/10/99

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	PROPOSED FFY 2000 TRUSTEE AGENCIES TOTALS					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
			$0.0	$82.0	$0.0	$0.0	$48.2	$0.0
Personnel	$128.4	$71.3						
Travel	$0.0	$0.0						
Contractual	$44.8	$45.0						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$173.2	$116.3	Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
General Administration	$22.4	$13.8						
Project Total	$195.6	$130.1	$126.4	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	2.0	1.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

In FY 2000, one Librarian position will be stationed at ARLIS. The Restoration Office will also contribute funding toward lease/rent and also for subscriptions/acquisitions. Funding for the one Librarian position is anticipated to continue in FY 2001 with funding beyond that point to be assessed at that time in the context of all other restoration program needs.

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: Multiple

SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$128.4	$71.3						
Travel	$0.0	$0.0						
Contractual	$0.0	$0.0						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0						
Subtotal	$128.4	$71.3						
General Administration	$19.3	$10.7						
Project Total	$147.7	$82.0	$81.4	$81.4	TBD	TBD	TBD	
Full-time Equivalents (FTE)	2.0	1.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: AK Dept. of Fish and Game

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Holba	Librarian III	19F	12.0	5.9		71.3
	Subtotal		12.0	5.9	0.0	
					Personnel Total	$71.3

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
				Travel Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: AK Dept. of Fish and Game

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed FFY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FFY 2000
Description	
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: AK Dept. of Fish and Game

FORM 3B
Contractual & Commodities
DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: AK Dept. of Fish and Game

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$0.0	$0.0						
Travel	$0.0	$0.0						
Contractual	$44.8	$45.0						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0						
Subtotal	$44.8	$45.0						
General Administration	$3.1	$3.2						
Project Total	$47.9	$48.2	$45.0	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	0.0	0.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: Dept. of the Interior

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
	Subtotal		0.0	0.0	0.0	
					Personnel Total	$0.0

Travel Costs:		Ticket	Round	Total	Daily	Proposed
Description		Price	Trips	Days	Per Diem	FFY 2000
					Travel Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: Dept. of the Interior

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FFY 2000
Building Lease (contribution to ARLIS)	24.0
Subscriptions, acquisitions, other expenses (contribution to ARLIS)	21.0
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$45.0

Commodities Costs:	Proposed
Description	FFY 2000
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: Dept. of the Interior

FORM 3B
Contractual & Commodities
DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - ARLIS
Agency: Dept. of the Interior

FORM 3B
Equipment
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$0.0	$0.0						
Travel	$0.0	$0.0						
Contractual	$380.0	$380.0						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0						
Subtotal	$380.0	$380.0						
General Administration	$20.1	$20.1						
Project Total	$400.1	$400.1	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	0.0	0.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

In FFY 00, funding for the Chief Scientist peer review contract is continued at the same level as FFY 99.

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Chief Scientist and Peer Reviewers
Agency: AK Dept. of Natural Resources

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
	Subtotal		0.0	0.0	0.0	
					Personnel Total	$0.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
				Travel Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Chief Scientist and Peer Reviewers
Agency: AK Dept. of Natural Resources

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed FFY 2000
Description	
Contract to provide scientific support to the Trustee Council, including the services of the Chief Scientist and for Peer Reviews. A contract is currently in place with annual options for renewal. The contractor is paid monthly based upon services rendered monthly, throughout the entire fiscal year.	380.0
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$380.0

Commodities Costs:	Proposed FFY 2000
Description	
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Chief Scientist and Peer Reviewers
Agency: AK Dept. of Natural Resources

FORM 3B
Contractual & Commodities DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FFY 2000
Those purchases associated with replacement equipment should be indicated by placement of an R.	**New Equipment Total**		$0.0

Existing Equipment Usage:	Number	Inventory
Description	of Units	Agency

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Chief Scientist and Peer Reviewers
Agency: AK Dept. of Natural Resources

FORM 3B
Equipment
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	PROPOSED FFY 2000 TRUSTEE AGENCIES TOTALS					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
			$0.0	$1,258.6	$0.0		$20.0	$12.8
Personnel	$804.6	$679.4						
Travel	$46.3	$50.6						
Contractual	$410.5	$409.8						
Commodities	$18.0	$18.0						
Equipment	$10.0	$10.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$1,289.4	$1,167.8	Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
General Administration	$142.4	$123.6						
Project Total	$1,431.8	$1,291.4	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	10.8	9.2						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

In FFY 00, staffing for the Restoration Office is reduced by 1.5 FTE as result of the elimination of the Director of Operations position (-0.5 FTE), the Network Administrator (-1.0 FTE) and the Natural Resources Manager (-1.0 FTE). This is partially offset by the transfer of the Administrative Assistant (1.0 FTE) from the PAG component.

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: Multiple

SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Budget Category:	FFY 1999	FFY 2000						
Personnel	$683.4	$662.0						
Travel	$46.3	$50.6						
Contractual	$398.5	$397.8						
Commodities	$18.0	$18.0						
Equipment	$10.0	$10.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$1,156.2	$1,138.4	Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
General Administration	$123.4	$120.2						
Project Total	$1,279.6	$1,258.6	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	9.5	9.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

Staffing changes proposed for FFY 00 include elimination of the remaining funding associated with the Director of Operations (-0.5 FTE), elimination of the Network Administrator (-1.0 FTE), and transfer of the Administrative Assistant (+1.0) from PAG to Operations.

A portion of the Administrative Assistant II (T Yockey) position in the Anchorage Restoration Office to be funded through ADF&G General Administration funds in the amount of 44.4.

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK. Dept. of Fish and Game

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
McCammon	Executive Director		12.0	10.6		126.8
Cramer	Director of Administration		12.0	8.4		100.8
VACANT	Science Coordinator	TBD	12.0	7.7-8.7		92.0-104.0
ELIMINATED	Director of Operations					0.0
Schubert	Project Coordinator		12.0	7.7		92.0
Hunt	Communciations Coordinator		12.0	6.0		71.8
Williams	Executive Secretary		12.0	5.3		63.3
Yockey	Administrative Assistant II *		12.0	4.5		9.2
Womac	Administrative Assistant II		12.0	4.3		52.2
ELIMINATED/CONTRACT	Microcomputer Technician II					0.0
Banks	Receptionist		12.0	3.0		35.8
Overtime					6.0	6.0
* Note: A portion of this position supported with GA funds.	Subtotal		108.0	49.7	6.0	
					Personnel Total	$662.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
In-State Travel					
Anchorage to Juneau (3 staff/1 transcriber for 1 TC meeting)	0.4	4	8	0.2	3.2
Anchorage to Juneau (administrative travel)	0.4	14	30	0.2	11.6
Anchorage to spill area community (3 staff/1 transcriber for TC mtg)	0.2	4	8	0.2	2.4
Community Meetings/GEM Planning Meetings					15.0
PAG Field Trip (restoration office staff participation)					0.0
Other community involvement/public meetings	0.2	6	12	0.2	3.6
Car rental (daily rate of $40.00)			14		0.6
Out-of-State Travel					
Anchorage - Washington D.C.	1.4	6	15	0.2	11.4
Professional conferences (e.g., SEJ, Intern'l Oil Spill Conf, AOU)	0.6	2	6	0.2	2.4
Car Rental (daily rate of $40.00)			12		0.5
				Travel Total	$50.6

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK. Dept. of Fish and Game

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

Contractual Costs:	Proposed
Description	FFY 2000
1999 Audit Engagement	60.0
Phone and fax	33.0
Postage (metered mail 10.0, bulk mail 7.0)	16.0
Courier service	3.5
Building Lease/Parking - 645 G Street (lease $87.6, parking $7.3)	94.9
Annual Restoration Status Report	19.0
Newsletter (4 issues: printing at $1,400 each + bulkmail prep $250 each)	7.1
Annual Invitation	5.5
Final Work Plan	1.8
Draft Work Plan	8.4
Restoration Notebook Series (8 editions with 400 copies each)	2.5
Equipment Maintenance Agreements (copiers, fax machines, postage meter in Anchorage and Juneau)	16.0
Local Area Network/Web Server support contract (out source)	50.0
Public Notice (TC meetings 4.5, annual Invitation 2.0, other meetings 1.5)	8.0
ADA Compliance (special access to meetings)	1.0
Transcription Services	5.0
Teleconferencing	8.0
Staff training	5.5
Aircraft Charters within the Spill Area	4.0
Annual Restoration Workshop (note: base cost of annual science conference)	18.0
Other technical review sessions/workshops	4.0
Other printing and publications	4.0
Meeting space rental (out of building)	1.0
56KB Line /DIS-WAN Access (ATU connect charges/dail-up 0.9, WAN/e-mail 4.2)	5.1
Traveling restoration exhibit display and transportation	0.0
Archive Coordination	14.5
Gulf Ecosystem Monitoring (GEM) Report	2.0
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$397.8

2000

Project Number: 00100
Project Title: Public Information, Science Management and Administration - Restoriation Office
Agency: AK Dept. of Natural Resources

FORM 3B
Contractual & Commodities DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Commodities Costs:	Proposed
Description	FFY 2000
Office Supplies	11.0
Local Area Network Software and Upgrades	5.0
Data Processing Supplies	2.0
Commodities Total	$18.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK. Dept. of Fish and Game

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FFY 2000
Local Area Network and web server - maintenance and repair	5	2.0	10.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$10.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK. Dept. of Fish and Game

FORM 3B
Equipment
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$86.4	$0.0						
Travel	$0.0	$0.0						
Contractual	$0.0	$0.0						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0						
Subtotal	$86.4	$0.0						
General Administration	$13.0	$0.0						
Project Total	$99.4	$0.0						
Full-time Equivalents (FTE)	1.0	0.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK Dept. of Natural Resources

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Christman	Natural Resources Manager II		0.0	7.2		0.0
* remainder of position costs under Archeology Project	Subtotal		0.0	7.2	0.0	
					Personnel Total	$0.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
				Travel Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK Dept. of Natural Resources

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed FFY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FFY 2000
Description	
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK Dept. of Natural Resources

FORM 3B
Contractual & Commodities DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: AK Dept. of Natural Resources

FORM 3B
Equipment
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$34.8	$17.4						
Travel	$0.0	$0.0						
Contractual	$0.0	$0.0						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0						
Subtotal	$34.8	$17.4						
General Administration	$5.2	$2.6						
Project Total	$40.0	$20.0						
Full-time Equivalents (FTE)	0.3	0.2						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: Dept. of the Interior

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Baldauf	Federal Budget Officer		2.0	8.7		17.4
	Subtotal		2.0	8.7		
					Personnel Total	$17.4

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
				Travel Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: Dept. of the Interior

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed FFY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FFY 2000
Description	
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: Dept. of the Interior

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: Dept. of the Interior

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000
Personnel	$0.0	$0.0
Travel	$0.0	$0.0
Contractual	$12.0	$12.0
Commodities	$0.0	$0.0
Equipment	$0.0	$0.0
Subtotal	$12.0	$12.0
General Administration	$0.8	$0.8
Project Total	$12.8	$12.8
Full-time Equivalents (FTE)	0.0	0.0
Other Resources		

LONG RANGE FUNDING REQUIREMENTS

Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	

Dollar amounts are shown in thousands of dollars.

Comments:

For payment of lease expenses in the Federal Office Building in Juneau (Executive Director's Office). FFY 99 budget figures based on costs as projected by NOAA.

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: National Oceanic & Atmospheric Administration

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
	Subtotal		0.0	0.0	0.0	
					Personnel Total	$0.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
				Travel Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: National Oceanic & Atmospheric Administration

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FFY 2000
Juneau Federal Building	12.0
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$12.0

Commodities Costs:	Proposed
Description	FFY 2000
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: National Oceanic & Atmospheric Administration

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Restoration Office
Agency: National Oceanic & Atmospheric Administration

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	PROPOSED FFY 2000 TRUSTEE AGENCIES TOTALS					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
				$20.8			$6.9	
Personnel	$57.6	$6.0						
Travel	$44.4	$13.6						
Contractual	$7.1	$6.7						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$109.1	$26.3	Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
General Administration	$9.1	$1.4						
Project Total	$118.2	$27.7	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	1.1	0.1						
			Dollar amounts are shown in thousands of dollars.					
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: Multiple

SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000
Personnel	$51.6	$0.0
Travel	$44.4	$13.6
Contractual	$7.1	$6.7
Commodities	$0.0	$0.0
Equipment	$0.0	$0.0
Subtotal	$103.1	$20.3
General Administration	$8.2	$0.5
Project Total	$111.3	$20.8
Full-time Equivalents (FTE)	1.0	0.0
Other Resources		

LONG RANGE FUNDING REQUIREMENTS

Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
TBD	TBD	TBD	TBD	TBD	

Dollar amounts are shown in thousands of dollars.

Comments:

Budget based on 4 meetings of the Public Advisory Group (two meetings in person and two by teleconference). No field trip scheduled for FY 00. PAG phone costs, printing and copying are partly a shared expense in the Operations component.

The Administrative Assistant has been moved to the Operations budget.

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: AK Dept. of Fish and Game

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
						0.0
	Subtotal		0.0	0.0	0.0	
					Personnel Total	$0.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
Member travel from various locations					
Regular meetings (3 one day meetings/1 two day meeting)					12.6
Other meetings/reviews (e.g., Restoration Workshop)					1.0
Note: In person meeting cost is approximately $4,900 per meeting for travel and per diem expenses. For a 2 day meeting, add $1,000 in per diem costs. Teleconference meetings cost approximately $600 per meeting.					
				Travel Total		$13.6

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: AK Dept. of Fish and Game

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FFY 2000
Postage and courier	1.5
Printing and copy charges	0.8
Public Notice/Announcements for PAG meetings (approx $600 per meeting)	2.4
ADA Compliance	1.0
Other meeting costs	1.0
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$6.7

Commodities Costs:	Proposed
Description	FFY 2000
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: AK Dept. of Fish and Game

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: AK Dept. of Fish and Game

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$6.0	$6.0						
Travel	$0.0	$0.0						
Contractual	$0.0	$0.0						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0						
Subtotal	$6.0	$6.0						
General Administration	$0.9	$0.9						
Project Total	$6.9	$6.9	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	0.1	0.1						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: Dept. of the Interior

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Mutter	Regional Environmental Assistant		1.0	6.0		6.0
	Subtotal		1.0	6.0	0.0	
					Personnel Total	$6.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
				Travel Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: Dept. of the Interior

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed FFY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FFY 2000
Description	
Commodities Total	$0.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: Dept. of the Interior

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Public Advisory Group
Agency: Dept. of the Interior

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	PROPOSED FFY 2000 TRUSTEE AGENCIES TOTALS					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
			$34.3	$32.6	$33.0	$29.9	$28.2	$40.5
Personnel	$253.8	$126.6						
Travel	$49.0	$44.0						
Contractual	$0.0	$0.0						
Commodities	$9.0	$9.0						
Equipment	$0.0	$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$311.8	$179.6	Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
General Administration	$38.2	$19.0						
Project Total	$350.0	$198.6	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	3.0	1.5						
			Dollar amounts are shown in thousands of dollars.					
Other Resources								

Comments:

FFY 00 budget reflects 0.25 FTE (3 months) funding for each agency liaison.

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support

SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$43.2	$21.6						
Travel	$10.0	$8.0						
Contractual	$0.0	$0.0						
Commodities	$1.5	$1.5						
Equipment	$0.0	$0.0						
Subtotal	$54.7	$31.1						
General Administration	$6.5	$3.2						
Project Total	$61.2	$34.3	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	0.5	0.3						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Environmental Conservation

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
See	Agency Liaison		3.0	7.2		21.6
	Subtotal		3.0	7.2	0.0	
					Personnel Total	$21.6

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
Trustee Travel					5.0
Liaison travel					3.0
				Travel Total	$8.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Environmental Conservation

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed FFY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FFY 2000
Description	
Office supplies/other liaison costs	1.5
Commodities Total	$1.5

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Environmental Conservation

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Environmental Conservation

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000
Personnel	$40.2	$20.1
Travel	$8.0	$8.0
Contractual	$0.0	$0.0
Commodities	$1.5	$1.5
Equipment	$0.0	$0.0
Subtotal	$49.7	$29.6
General Administration	$6.0	$3.0
Project Total	$55.7	$32.6
Full-time Equivalents (FTE)	0.5	0.3

LONG RANGE FUNDING REQUIREMENTS					
Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
TBD	TBD	TBD	TBD	TBD	

Dollar amounts are shown in thousands of dollars.

Other Resources

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Fish and Game

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Slater	Agency Liaison		3.0	6.7		20.1
	Subtotal		3.0	6.7	0.0	
					Personnel Total	$20.1

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
Trustee Travel					5.0
Liaison travel					3.0
				Travel Total	$8.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Fish and Game

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

Printed: 5/13/99

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FFY 2000
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed
Description	FFY 2000
Office supplies/other liaison costs	1.5
Commodities Total	$1.5

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Fish and Game

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FFY 2000
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Fish and Game

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000
Personnel	$44.4	$22.2
Travel	$3.0	$6.0
Contractual	$0.0	$0.0
Commodities	$1.5	$1.5
Equipment	$0.0	$0.0
Subtotal	$48.9	$29.7
General Administration	$6.7	$3.3
Project Total	$55.6	$33.0
Full-time Equivalents (FTE)	0.5	0.3

LONG RANGE FUNDING REQUIREMENTS					
Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
TBD	TBD	TBD	TBD	TBD	

Dollar amounts are shown in thousands of dollars.

Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Natural Resources

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Fries	Agency Liaison		3.0	7.4		22.2
	Subtotal		3.0	7.4	0.0	
					Personnel Total	$22.2

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
Liaison travel					3.0
Trustee Travel					3.0
				Travel Total	$6.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Natural Resources

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FFY 2000
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed
Description	FFY 2000
Office supplies/other liaison costs	1.5
Commodities Total	$1.5

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Natural Resources

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: AK Dept. of Natural Resources

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$39.0	$19.5						
Travel	$8.0	$6.0						
Contractual	$0.0	$0.0						
Commodities	$1.5	$1.5						
Equipment	$0.0	$0.0						
Subtotal	$48.5	$27.0						
General Administration	$5.9	$2.9						
Project Total	$54.4	$29.9	TBD	TBD	TBD	TBD	TBD	
Full-time Equivalents (FTE)	0.5	0.3						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: Dept. of Agriculture, Forest Service

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Holbrook	Agency Liaison		3.0	6.5		19.5
	Subtotal		3.0	6.5	0.0	
					Personnel Total	$19.5

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
Trustee Travel					3.0
Liaison travel					3.0
				Travel Total	$6.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison
Agency: Dept. of Agriculture, Forest Service

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed FFY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FFY 2000
Description	
Office supplies/other liaison costs	1.5
Commodities Total	$1.5

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: Dept. of Agriculture, Forest Service

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.	**New Equipment Total**		$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: Dept. of Agriculture, Forest Service

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$36.6	$18.0						
Travel	$10.0	$6.0						
Contractual	$0.0	$0.0						
Commodities	$1.5	$1.5						
Equipment	$0.0	$0.0						
Subtotal	$48.1	$25.5						
General Administration	$5.5	$2.7						
Project Total	$53.6	$28.2						
Full-time Equivalents (FTE)	0.5	0.3						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: Dept. of the Interior

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
TBD	Liaison		3.0	6.0		18.0
	Subtotal		3.0	6.0	0.0	
					Personnel Total	$18.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
Trustee travel					3.0
Liaison travel					3.0
				Travel Total	$6.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: Dept. of the Interior

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FFY 2000
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed
Description	FFY 2000
Office supplies/other liaison costs	1.5
Commodities Total	$1.5

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: Dept. of the Interior

FORM 3B
Contractual & Commodities DETAIL

DRAFT

New Equipment Purchases:	Number of Units	Unit Price	Proposed FFY 2000
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: Dept. of the Interior

FORM 3B
Equipment
DETAIL

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FFY 1999	Proposed FFY 2000	LONG RANGE FUNDING REQUIREMENTS					
			Estimated FFY 2001	Estimated FFY 2002	Estimated FFY 2003	Estimated FFY 2004	Estimated FFY 2005	
Personnel	$50.4	$25.2						
Travel	$10.0	$10.0						
Contractual	$0.0	$0.0						
Commodities	$1.5	$1.5						
Equipment	$0.0	$0.0						
Subtotal	$61.9	$36.7						
General Administration	$7.6	$3.8						
Project Total	$69.5	$40.5						
Full-time Equivalents (FTE)	0.5	0.3						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: National Oceanic & Atmospheric Administration

FORM 3A
TRUSTEE
AGENCY
SUMMARY

DRAFT

DRAFT FFY 00 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FFY 2000
Wright	Agency Liaison		3.0	8.4		25.2
	Subtotal		3.0	8.4	0.0	
					Personnel Total	$25.2

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FFY 2000
Trustee Travel					5.0
Liaison travel					5.0
				Travel Total	$10.0

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: National Oceanic & Atmospheric Administration

FORM 3B
Personnel
& Travel
DETAIL

DRAFT

Contractual Costs:	Proposed FFY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FFY 2000
Description	
Office supplies/other liaison costs	1.5
Commodities Total	$1.5

2000

Project Number: 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: National Oceanic & Atmospheric Administration

FORM 3B
Contractual & Commodities DETAIL

New Equipment Purchases:		Number	Unit	Proposed
	Description	of Units	Price	FFY 2000
Those purchases associated with replacement equipment should be indicated by placement of an R.			**New Equipment Total**	$0.0

Existing Equipment Usage:	Number	Inventory
Description	of Units	Agency

2000

Project Number:· 00100
Project Title: Administration, Public Information and Scientific Management - Liaison Support
Agency: National Oceanic & Atmospheric Administration

FORM 3B
Equipment
DETAIL

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

MEMORANDUM

To: Core Reviewers: Chris Haney, Phil Mundy, Pete Peterson, and George Rose

From: Stan Senner, Science Coordinator

Subject: Technical Review of FY 00 DPDs

Date: April 20, 1999

Here is your set of Detailed Project Descriptions (DPDs) for the FY 2000 Work Plan. You will receive a separate memorandum from the Chief Scientist with your specific assignments for detailed reviews of the DPDs.

In all, 131 proposals requesting $16.7 million were received. The Executive Director and Trustee Council's funding target for the FY 00 work plan is $8-9 million. The front pocket of the first binder contains two draft spreadsheets: (1) a list of all proposals in numeric order, and (2) a list of all proposals (and their abstracts) by resource cluster.

We will follow much the same procedures as we have used in prior years. You will receive evaluation forms with the memo coming from the Chief Scientist. Please fill these out as you do your assigned reviews and bring them to the meeting of the core reviewers scheduled for May 16-19 in Anchorage (at the Restoration Office). Be prepared to lead the discussion for the projects for which you are the primary reviewer. For each proposal, the chief Scientist will then formulate a recommendation to the Executive Director, based on your written evaluations and the discussion at the core reviewer meeting. Your individual evaluations will be retained by the Chief Scientist (not the Restoration Office) for reference purposes. In the case of your reviews of the projects submitted under the Broad Agency Announcement (BAA), NOAA will be provided file copies, but these are confidential and will not be available to the public.

Although you are assigned a subset of proposals for which you are the lead or secondary reviewer, we also need you to be generally familiar with the full suite of DPDs. This is important because we will need your comments about individual DPDs *vis a vis* others within the same cluster (e.g., pink salmon, seabird & forage fish), as well as within the overall Restoration Program. In addition to the questions on the review form, consider the following questions in relation to the clusters and the overall program:

Are some projects worthwhile and technically appropriate but less important than others?

Are some projects most appropriately considered to be within the normal management responsibilities of Trustee agencies?

Are some new projects more important than some ongoing projects?

Are some projects especially important because they help achieve a balanced, integrated, ecologically-oriented whole?

Are there important gaps?

Given existing financial commitments (i.e., costs of on-going work), are the FY 00 and future costs of new projects sustainable?

For continuing projects, take special note of the "Explanation of Changes in Continuing Projects," which is to be included in each such proposal. This section should simplify your review of ongoing work.

It now appears that any reviewer who reviews a proposal submitted through the NOAA BAA process will be required to complete several disclosure/conflict of interest forms. These forms and instructions will be mailed separately by Applied Marine Sciences.

You have been through this before, but if you have questions, please call me (907-278-8012) or Andy Gunther (925-373-7142). We look forward to seeing you in Anchorage on May 16. Thank you.

SS/cgw

enclosures (notebooks and spread sheet)

cc: Robert Spies
Molly McCammon
Sandra Schubert
Veronica Christman

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

MEMORANDUM

TO: Restoration Work Force
PAG Representatives

FROM: Sandra Schubert, Project Coordinator

RE: FY 00 Restoration Proposals

DATE: April 21, 1999

This set of binders contains the Detailed Project Descriptions and detailed budgets submitted in response to the Trustee Council's FY 00 *Invitation to Submit Restoration Proposals*. In all, 131 research/monitoring/general restoration proposals totaling $16.7 million were received. Six additional proposals, which if funded would be outside of the annual work plan, will also be considered in FY 00 (projects 00100, 126, 424, 474, 514, and 616). The Council's funding target for the FY 00 work plan is $8 to $9 million.

The front pocket of the first binder contains two spreadsheets:

1. A list of all proposals in numeric order. This list contains the project's assigned number and title, the name of the individual who submitted the proposal, and the project's assigned research cluster.

2. A list of all proposals by resource cluster. In addition to project number, title, and proposer, this list contains an abstract of the project, the project's assigned lead agency, the amount of funding requested for FY 00, and the project's duration (the number of years for which funding is being requested from the Trustee Council). For continuing projects, the spreadsheet also contains the FY 99 projection of the amount of funding needed in FY 00 (this column is labeled "FY 00 Expected"). Funding requests from non-Trustee agencies have been adjusted by Restoration Office staff to include agency "GA" (general administration).

Both of the spreadsheets are marked DRAFT. Please give me a call if you find any errors or omissions. Lead agencies and research clusters were assigned by Restoration Office staff, and are open to discussion.

The meeting of the Executive Director, Restoration Work Force, and two PAG members to develop the Draft Work Plan will be held in the Restoration Office (4th floor conference room) from 9:00 am - 5:00 pm Wednesday, June 2, 1999.

FY 00 WORK PLAN - INDEX OF DETAILED PROJECT DESCRIPTIONS

Proj.No.	Project Title	Proposer	Resource Cluster
00007A-CLO	Archaeological Index Site Monitoring	D. Reger/ADNR	Archaeological Resources
00012A-BAA	Photographic and Acoustic Monitoring of Killer Whales in Prince William Sound and Kenai Fjords	C. Matkin/North Gulf Oceanic Society	Marine Mammals
00025-CLO	Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators (NVP)	L. Holland-Bartels, et al/USGS-BRD	Nearshore Ecosystem
00048-BAA	Publication: Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the Oil Spill and Large Spawning Escapements	G. Ruggerone/NRC, Inc., D. Rogers/Univ. Wash.	Sockeye Salmon
00052	Community Involvement/Traditional Ecological Knowledge	P. Brown- Schwalenberg/CRRC	Subsistence
00064-CLO	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	K. Frost/ADFG	Marine Mammals
00090-CLO	Monitoring of Oiled Mussel Beds in Prince William Sound	P. Harris, C. Brodersen/NOAA	Nearshore Ecosystem
00127	Tatitlek Coho Salmon Release	G. Kompkoff/Tatitlek IRA Council	Subsistence
00139A2	Port Dick Creek Tributary Restoration and Development	W. Bucher/ADFG	Pink Salmon
00[illegible]A-CLO	Common Murre Population Monitoring	D. Roseneau/USFWS	Seabird/Forage Fish and Related Projects
00159	Surveys to Monitor Marine Bird Abundance in Prince William Sound During Winter and Summer 2000	B. Lance, D. Irons/USFWS	Seabird/Forage Fish and Related Projects
00163-CLO	APEX: Alaska Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska	D. Duffy/Paumanok Solutions, et al	Seabird/Forage Fish and Related Projects
00169-CLO	A Genetic Study to Aid in Restoration of Murres, Guillemots, and Murrelets in the Gulf of Alaska	V. Friesen/Queen's Univ., J. Piatt/USGS-BRD	Seabird/Forage Fish and Related Projects
00180-CLO	Kenai Habitat Restoration and Recreation Enhancement	M. Rutherford/ADNR	Habitat Improvement
00190	Construction of a Linkage Map for the Pink Salmon Genome	F. Allendorf/Univ. Montana	Pink Salmon
00195	Pristane Monitoring in Mussels	J. Short, P. Harris/NOAA	SEA and Related Projects
00210	Youth Area Watch	R. Sampson/Chugach School District	Subsistence
00222	Chenega Bay Dump Rehabilitation and Salmon Habitat Enhancement (Stream 667 Fish Pass)	R. Spangler /USFS	Subsistence
00225	Port Graham Pink Salmon Subsistence Project	E. Anahonak/Port Graham IRA Council	Subsistence
00[illegible]	Community-Based Harbor Seal Management and Biological Sampling	V. Vanek/ADFG, M. Riedel/Alaska Harbor Seal Commission	Subsistence

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Proj.No.	Project Title	Proposer	Resource Cluster
00247	Kametolook River Coho Salmon Subsistence Project	J. McCullough, L. Scarbrough/ADFG	Subsistence
00256B	Sockeye Salmon Stocking at Solf Lake	D. Gillikin/USFS, P. Shields/ADFG	Subsistence
00263	Assessment, Protection and Enhancement of Salmon Streams in Lower Cook Inlet	W. Meganack, Jr./Port Graham Corporation	Subsistence
00273	Scoter Life History and Ecology: Linking Satellite Technology with Traditional Knowledge to Conserve the Resource	D. Rosenberg/ADFG	Subsistence
00278	Development of an Ecological Characterization and Site Profile for Kachemak Bay/ Lower Cook Inlet	G. Seaman/ADFG	Ecosystem Synthesis
00287-BAA	Seabird-Oceanographic Relationships in the Northern Gulf of Alaska: Integration with NSF/NOAA Study GLOBEC	R. Day/ABR, Inc.	Seabird/Forage Fish and Related Projects
00290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	J. Short, B. Nelson/NOAA	Nearshore Ecosystem
00306-CLO	Ecology and Demographics of Pacific Sand Lance in Lower Cook Inlet	J. Piatt/USGS-BRD	Seabird/Forage Fish and Related Projects
00320-BAA	Sound Ecosystem Assessment (SEA): Publishing the Integrated Final Report and a Program Synthesis	J. Allen/PWSSC	SEA and Related Projects
00327	Pigeon Guillemot Restoration Research at the Alaska SeaLife Center	D. Roby/Oregon State Univ.	Seabird/Forage Fish and Related Projects
00330	Mass-Balance Model of Trophic Fluxes in Prince William Sound	D. Pauly/UBC	Ecosystem Synthesis
00333	Sea Otter Monitoring	B. Henrichs/Native Village of Eyak	Subsistence
00338	Survival of Adult Murres and Kittiwakes in Relation to Forage Fish Abundance	J. Piatt/USGS-BRD	Seabird/Forage Fish and Related Projects
00339	Prince William Sound Human Use and Wildlife Disturbance Model	K. Murphy, L. Suring/USFS	Habitat Improvement
00340	Toward Long-Term Oceanographic Monitoring of the Gulf of Alaska Ecosystem	T. Weingartner/UAF	Ecosystem Synthesis
00341	Harbor Seal Recovery: Controlled Studies of Health and Diet	M. Castellini/UAF	Marine Mammals
00347-CLO	Fatty Acid Profile and Lipid Class Analysis for Estimating Diet Composition and Quality at Different Trophic Levels	R. Heintz/NOAA	Seabird/Forage Fish and Related Projects
00348-CLO	Responses of River Otters to Oil Contamination: A Controlled Study of Biological Stress Markers	M. Ben-David, T. Bowyer, L. Duffy/UAF	Nearshore Ecosystem
0 -BAA	The *Exxon Valdez* Oil Spill: Guidance for Future Research Activities	C. Elfring/Polar Research Board, NRC	Ecosystem Synthesis

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00368	Improved Salmon Escapement Enumeration Using Remote Video and Time-Lapse Recording Technology	E. Otis/ADFG	Pink Salmon
00371	Effects of Harbor Seal Metabolism on Stable Isotope Ratio Tracers	D. Schell/UAF	Marine Mammals
00372	Stellar Sea Lion Monitoring	B. Henrichs/Native Village of Eyak	Subsistence
00373	Effect of the Oil Spill on Herring Spawning Locations and Use of Nursery Areas	B. Norcross/UAF	Pacific Herring
00374	Regional Analysis of Juvenile Herring in Prince William Sound	B. Norcross/UAF	Pacific Herring
00375	Effect of Herring Egg Distribution and Ecology on Year-Class Strength and Adult Distribution	E. Brown, B. Norcross/UAF	Pacific Herring
00379	Assessment of Risk Caused by Residual Oil in Prince William Sound Using P450 Activity in Fishes	S. Jewett/UAF	Nearshore Ecosystem
00382	Information-Transfer Program for Managers	D. Gibbons/USFS	Ecosystem Synthesis
00383	Distribution of Cutthroat Trout and Dolly Varden in Western Prince William Sound	R. Spangler/USFS	Cutthroat Trout, Dolly Varden, and Other Fish
[illegible]	3-D Ocean State Simulations for Ecosystem Applications from 1995-98 in Prince William Sound	J. Wang/UAF	SEA and Related Projects
00391	Cook Inlet Information Management/Monitoring System	C. Fries/ADNR, J. Hock/ADEC	Ecosystem Synthesis
00392	Growth Rates of Cutthroat Trout and Dolly Varden in Prince William Sound: Comparison of Populations in Oiled and Unoiled Sites	G. Reeves/USFS, D. Markle/Oregon State Univ.	Cutthroat Trout, Dolly Varden, and Other Fish
00393-BAA	Prince William Sound Food Webs: Structure and Change	T. Kline/PWSSC	SEA and Related Projects
00396	Diet, Trophic Interactions, and Historical Trends in Occurrence of Salmon Sharks, Sleeper Sharks, and Spiny Dogfish in Prince William Sound and the Eastern Gulf of Alaska	L. Hulbert/NOAA	Cutthroat Trout, Dolly Varden, and Other Fish
00398	Archive and Enhanced World Wide Web Dissemination System	J. Braund-Allen, J. Michaelson/UAA	Ecosystem Synthesis
00399	Eastern Prince William Sound Human Use and Wildlife Disturbance Model	K. Murphy, L. Suring/USFS	Habitat Improvement
00400-BAA	Metadata For The *Exxon Valdez* Restoration Archive	G. Brooks	Ecosystem Synthesis
00401	Assessment of Spot Shrimp Abundance in Prince William Sound	C. Hughey/ Valdez Native Tribe, C. O'Clair/ NOAA	Subsistence
[illegible]	Harlequin Duck Population Dynamics and Satellite Telemetry	D. Rosenberg/ADFG	Nearshore Ecosystem

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00413	Assessment of Human Disturbance to Nesting Black Oystercatchers	M. Tetreau/NPS, K. Murphy/USFS	Nearshore Ecosystem
00414-BAA	Lessons from the *Exxon Valdez*: Using Interactive Information Displays to Engage the Public	J. Allen/PWSSC	Public Information/Science Mgt./Admin.
00416	O'Brien Creek Restoration	R. Spangler/USFS	Subsistence
00418	The 1899 Harriman Alaska Expedition Retraced: A Century of Change	L. Hott, T. Litwin/Smith College	Public Information/Science Mgt./Admin.
00423	Patterns and Processes of Population Change in Selected Nearshore Vertebrate Predators	J. Bodkin, D. Esler, B. Ballachey/USGS-BRD, T. Dean/CRA, Inc.	Nearshore Ecosystem
00433	Effects of Forage Fish School Density and Species Composition on Foraging Patterns of Sea Birds: A Synthesis Product	E. Brown, B. Norcross/UAF	Seabird/Forage Fish and Related Projects
00441	Harbor Seal Recovery: Effects of Diet on Lipid Metabolism and Health	R. Davis/Texas A&M Univ.	Marine Mammals
00444	Community-Based, Long-Term Population Monitoring of Harbor Seals	M. Riedel/Alaska Native Harbor Seal Commission, B. Kelly/UAS	Subsistence
(	Long-Lived Bioactive Microbial Biooxidation Products From Petroleum	D. Button/UAF	Nearshore Ecosystem
00447	Information Gateway to Prince William Sound and the Gulf of Alaska	M. Shasby, W. Seitz/USGS	Ecosystem Synthesis
00449	Documentary Film on Clams, Paralytic Shellfish Poisoning, and Subsistence	P. Panamarioff/Ouzinkie Tribal Council	Subsistence
00451	Influence of Exogenous Zooplankton Assemblages on Juvenile Herring	A. J. Paul/UAF	Pacific Herring
00453	Monitoring Recovery of Injured Species Following Removal of Introduced Foxes	V. Byrd/USFWS	Seabird/Forage Fish and Related Projects
00454	Evidence and Consequences of Persistent Oil Contamination in Pink Salmon Natal Habitats	S. Rice/NOAA	Pink Salmon
00455-BAA	An Evaluation of the Data System for the EVOS Long Term Monitoring Program	C. Falkenberg/Ecologic Corp.	Ecosystem Synthesis
00458	Comparison of Three Techniques For Estimating Fish Population Diversity, Abundance, and Size Structure	R. Spangler/USFS	Cutthroat Trout, Dolly Varden, and Other Fish
00459	Residual Oiling of Armored Beaches and Mussel Beds in the Gulf of Alaska	G. Irvine/USGS-BRD	Nearshore Ecosystem
00461	Contaminant Levels in North Pacific Killer Whales	M. Krahn/NOAA	Marine Mammals
00462	Effect of Disease on Pacific Herring Population Recovery in Prince William Sound	G. Marty/Univ. of California Davis	Pacific Herring

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Proj.No.	Project Title	Proposer	Resource Cluster
00468-CLO	Recovery Status of Barrow's Goldeneyes	D. Esler/USGS-BRD	Nearshore Ecosystem
00469	Sea Otter Baseline Population Surveys	A. Doroff/USFS, J. Bodkin/USGS-BRD	Nearshore Ecosystem
00473	Public Information Brochure on Lands Acquired by the Trustee Council from Chenega Corporation	C. Totemoff/Chenega Corp.	Habitat Improvement
00474	Endowment of the Environmental Restoration Center at the University of Alaska Anchorage	G. Baker, H. Schroeder, O. Smith/UAA	Research Facilities
00476	Effects of Oiled Incubation Substrate on Pink Salmon Reproduction	R. Heintz/NOAA	Pink Salmon
00478	Defining Critical Habitat for Marine Reserves: Spatial and Temporal Distribution of Anadromous and Pelagic Fishes in the Gulf of Alaska	J. Nielsen/USGS-BRD	Cutthroat Trout, Dolly Varden, and Other Fish
00479	Effects of Food Stress on Survival and Reproductive Performance of Seabirds	J. Piatt/USGS-BRD, A. Kitaysky/Univ. of Washington	Seabird/Forage Fish and Related Projects
00481	Documentary Film on The Subsistence Use of Intertidal Resources in Prince William Sound	G. Evanoff/Chenega Bay IRA Council	Subsistence
00482-BAA	Development and Field Testing Rapid Diagnostic Test Kits for Paralytic Shellfish Poisoning and Amnesic Shellfish Poisoning	J. Jellett/Jellett Biotek Limited	Subsistence
(	Straying of Hatchery-Released Pink Salmon in Prince William Sound	T. Joyce/ADFG	Pink Salmon
00493	IMMAGE: Integrated Monitoring of Mechanisms Affecting the Gulf of Alaska Ecosystem	P. Anderson/NOAA	SEA and Related Projects
00501	Protocols for Long-Term Monitoring of Seabird Ecology in the Gulf of Alaska	J. Piatt/USGS-BRD, G. Byrd, D. Roseneau/USFWS	Seabird/Forage Fish and Related Projects
00503	Orca Inlet Restoration Planning	B. Henrichs/Native Village of Eyak	Subsistence
00507	Nuchek Subsistence Camp	B. Henrichs/Native Village of Eyak	Subsistence
00508	Copper River Salmon Run Data Infrastructure	B. Henrichs/Native Village of Eyak	Subsistence
00509	Long-Term Monitoring of Harbor Seal Populations: Development of an Experimental Design	R. Small, K. Frost/ADFG	Marine Mammals
00510-BAA	Recovery of Intertidal Communities and Recommendations for Future Monitoring	T. Dean/CRA, Inc.	Nearshore Ecosystem
00511	Synthesis and Transfer of Conservation Biology Information to Resource Managers and University Students	K. Boggs/UAA	Ecosystem Synthesis
00512	Laying the Groundwork for a Successful Long-Term Monitoring and Research Program	K. Oakley/USGS	Ecosystem Synthesis
00514	Lower Cook Inlet Waste Management Plan	M. See/ADEC	Reduction of Marine Pollution

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Proj.No.	Project Title	Proposer	Resource Cluster
00518-BAA	Publication: Comparative Habitat Use by Kittlitz's and Marbled Murrelets	B. Day/ABR, Inc.	Seabird/Forage Fish and Related Projects
00518-BAA	Assessment of Recovery and Restoration Needs on Treated Mixed-Soft Beaches	D. Lees/Littoral Ecological Services	Nearshore Ecosystem
00521-BAA	Ecological Risk of Long-Term Oil Exposure to Pink Salmon Spawning Habitat	C. Behr-Andres/AGRA	Pink Salmon
00525	General-Interest Publications on the Findings of the Nearshore Vertebrate Predator Ecosystem Project	B. Ballachey, D. Bohn/USGS-BRD	Nearshore Ecosystem
00527-BAA	Status of Black Oystercatchers in Prince William Sound	S. Murphy/ABR, Inc.	Nearshore Ecosystem
00529	Comparison of PAH Toxicity and Immune Function in Oil-Exposed Birds: Development of a Non-Lethal Biomarker	M. Wolfe/Univ. of California Davis	Seabird/Forage Fish and Related Projects
00530	Lessons Learned: Evaluating Scientific Sampling of Oil Spill Effects	M. See/ADEC	Ecosystem Synthesis
00533-BAA	Effects of Increasing Boat Traffic on Use of Haulouts by Harbor Seals in Western Prince William Sound	C. Johnson/ABR, Inc.	Marine Mammals
00537	Effects of Crude Oil and Dispersant Mixtures On Marine Phytoplankton Primary Production	N. Webb/UAA	Nearshore Ecosystem
[illegible]-BAA	Port Dick Spawning Channel Information Transfer To Resource Managers and Manuscript Preparation	G. Coble/Coble Geophysical	Pink Salmon
00540-BAA	Port Dick Spawning Channel Long Term Sediment Transport Monitoring	G. Coble/Coble Geophysical	Pink Salmon
00541-BAA	Publication: Prince William Sound Isotope Ecology	T. Kline/PWSSC	SEA and Related Projects
00542-BAA	Stable Isotope Biogeochemical Markers as Linkages Between Fishes and Their Food Sources in Northern Gulf of Alaska Production Zones	T. Kline/PWSSC	SEA and Related Projects
00544	Lower Cook Inlet Salmon Ecology Study	P. McCollum/Port Graham Village Council	Pink Salmon
00547-BAA	Monitoring System Design for the Prince William Sound Nowcast/Forecast System	C. Mooers/Univ. Miami	SEA and Related Projects
00548	Internet-Based Digital Index of Research Publications Funded by the Trustee Council	D. Bohn/USGS-BRD	Ecosystem Synthesis
00552-BAA	Exchange Between Prince William Sound and the Gulf of Alaska	S. Vaughn/PWSSC	SEA and Related Projects
00553	Comparison of Cytochrome P4501A Induction in Blood and Liver Cells of Sea Otters	B. Ballachey/USGS-BRD, P. Snyder/Purdue Univ.	Nearshore Ecosystem
[illegible]-BAA	Over-Winter Foraging Ecology of Injured Marine Piscivores in Prince William Sound: The Effects of Winter-Food Limitation on Recovery	D. Scheel and G. Thomas/PWSSC	Seabird/Forage Fish and Related Projects

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00559	Long-Term Monitoring and Research: Evaluation of Study Methodology for Surveys to Monitor Marine Bird Abundance in Prince William Sound	B. Lance, D. Irons/USFWS, L. McDonald/West, Inc.	Seabird/Forage Fish and Related Projects
00562	Effect of Viral Hemorrhagic Septicemia Virus on Overwinter Survival of Juvenile Herring in Resurrection Bay: Implications for Year-Class Strength	R. Kocan/Univ. of Washington	Pacific Herring
00563	Kenai River Streambank Habitat Utilization Study	B. Hauser/ADFG	Habitat Improvement
00564	Harbor Seals on Glacial Ice in Prince William Sound: Habitat Use, Trophic Interactions and Abundance	K. Frost/ADFG	Marine Mammals
00567	Monitoring Environmental Contaminants in the Northern Gulf of Alaska	M. See/ADEC	Ecosystem Synthesis
00568-BAA	Historic, Contemporary, and Near-Real-Time Meteorological Data: Open Access to the EVOS and OSRI Acquisitions	S. Bodnar/OSRI, V. Patrick/Univ. Maryland	Ecosystem Synthesis
00571	Toxicity Syndrome of Environmentally Persistent Petroleum	J. Hameedi/NOAA	Nearshore Ecosystem
00576	Relationship Between Oil Exposure and Reproductive Function in Dolly Varden	T. Collier/NOAA	Cutthroat Trout, Dolly Varden, and Other Fish
00590	Publication: Cytochrome P4501A Induction, Hydrocarbon Bioaccumulation and Composition, and Growth of Pink Salmon Fry	M. Carls/NOAA	Pink Salmon
00591	Publication: Population Structure, Growth, Mortality and Production of Mussels in Prince William Sound	C. O'Clair, M. Lindeberg/NOAA	Nearshore Ecosystem
00592	A Taxonomic Synthesis of Intertidal Algae for Prince William Sound	M. Lindeberg/NOAA	Nearshore Ecosystem
00598	Publication: Resolution of Mixtures Containing *Exxon Valdez* Oil and Regional Background Hydrocarbons in Subtidal Sediments	J. Short/NOAA	Nearshore Ecosystem
00599	Evaluation of Yakataga Oil Seeps as Regional Background Hydrocarbon Sources in Benthic Sediments of the Spill Area	J. Short/NOAA	Nearshore Ecosystem
00610	Kodiak Island Youth Area Watch	P. Brown-Schwalenberg/CRRC	Subsistence
00615	Prince William Sound/Kodiak/Lower Cook Inlet Waste Management Community Awareness Video and Community Waste Management Resource Guide	K. Merrell/PWSEDC, K. Hartwell/Wild North Productions	Reduction of Marine Pollution
00616	Sound Waste Management Plan: Boat Harbor Sewage System Phase	S. Cogswell/PWSEDC	Reduction of Marine Pollution

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
Pink Salmon							
00139A2	Port Dick Creek Tributary Restoration and Development	W. Bucher/ADFG	ADFG	Cont'd 5th yr. 5 yr. project	$47.0	$47.0	$67.0
	Because Port Dick Creek experienced declines in total returns since 1987, the Alaska Department of Fish and Game conducted a five-year feasibility analysis and initiated Trustee Council funded efforts to restore spawning habitat in two former tributaries taken out of production by the 1964 Alaska earthquake. Approximately 3,000 cubic meters of material was excavated from both tributaries, and since 1996 over 3,300 pink and chum salmon have colonized and spawned in the new habitat. To date, spawning adults of both species potentially deposited over 5,000,000 eggs with over 458,000 fry estimated emerging from the tributaries. In FY 00 additional sedimentologic parameters (bedload transport, accumulated sediments and gravel/cobble transport rates) will be further evaluated to support the stability analyses of the project.						
00190	Construction of a Linkage Map for the Pink Salmon Genome	F. Allendorf/Univ. Montana	ADFG	Cont'd 5th yr. 5 yr. project	$187.3	$226.5	$708.1
	This project will continue experiments at the Alaska SeaLife Center that use the linkage map constructed in previous years to test for organismal effects of regions of the genome on phenotypes that affect traits that are important to recovery of pink salmon (e.g., growth and survival). Progeny produced from wild pink salmon collected from Likes Creek in August 1998 will be released from the SeaLife Center in May 1999. Sexually mature adults from the 1998 cohort will return to the SeaLife Center in August 2000. Genotypes in released fry and returning adults will be compared to test for genetic differences in marine survival and other life history traits (e.g., body size, egg number, and egg size).						
00366	Improved Salmon Escapement Enumeration Using Remote Video and Time-Lapse Recording Technology	E. Otis/ADFG	ADFG	Cont'd 2nd yr. 3 yr. project	$46.5	$49.5	$62.8
	Salmon resources and services within the spill area, and particularly within Prince William Sound, were injured by the oil spill and have not fully recovered. To monitor the recovery of salmon stocks in the spill area and improve escapement information used to set spawning escapement goals, this project will develop remote video and time-lapse recording technology for enumerating salmon escapement. Remote video has the potential to provide accurate, archivable documentation of salmon escapements well beyond the capacity of aerial survey indices, and well below the cost of weir and sonar projects. Videotapes can be retrieved and reviewed weekly to facilitate in-season management of commercial fisheries.						

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00454	Evidence and Consequences of Persistent Oil Contamination in Pink Salmon Natal Habitats	S. Rice/NOAA	NOAA	New 1st yr. 2 yr. project		$308.6	$412.7

This project will (1) examine the natal habitat of pink salmon in Prince William Sound for evidence of oil contamination in eggs and spawning redds, (2) measure cytochrome P4501A in field and laboratory exposed alevins to relate induction with biological consequences on growth and survival following PAH exposure, and (3) synthesize these results with past research and a reexamination of the recovery status of pink salmon and their spawning habitat. A combination of field and laboratory studies will be conducted for one year to complete the pink salmon toxicity story. Persistent oil reservoirs adjacent to natal streams will be reexamined for evidence of habitat recovery, and the hypothetical mechanism of hydrocarbon introduction into the streams (transfer of dissolved oil in pore water) will be quantified by use of collectors (SPMDs) buried in spawning habitat. The biomarker cytochrome P4501A will be measured in eggs and alevins from field and controlled laboratory exposures. The significance of the biomarker will be determined in measurements of marine growth and survival, using fish from brood year 98 tests underway.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00476	Effects of Oiled Incubation Substrate on Pink Salmon Reproduction	R. Heintz/NOAA	NOAA	Cont'd 2nd yr. 3 yr. project	$75.0	$81.7	$117.7

This project will examine the effects of oil exposure during embryonic development on the gamete viability of pink salmon that survive to spawn. The objective is to determine if exposure to oil during incubation could explain the reduced gamete viability reported for pink salmon in Prince William Sound under Project /191A. In that project, gametes taken from pink salmon returning to oiled streams had higher mortality rates than gametes taken from salmon in unoiled streams. These data suggest a dramatic effect of oil on vertebrate reproduction that has not previously been described. The plausibility of reduced gamete viability is indicated by the effects demonstrated by Project /191B, which include reduced marine survival and growth of returning adults. However, this effect still requires unequivocal demonstration. During FY 99, fry were exposed, marked and released. During FY 00, adults will be recovered and their gametes crossed to demonstrate their viability. In FY 01, estimates of viability will be obtained and used to complete a model of life cycles effects resulting from incubation of eggs in oiled gravel.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00487	Straying of Hatchery-Released Pink Salmon in Prince William Sound	T. Joyce/ADFG	ADFG	New 1st yr. 3 yr. project		$215.9	$493.8

This project will estimate the degree of straying of hatchery-released pink salmon in Prince William Sound. Specific strata encompassing streams used in studies funded by the Trustee Council will also be formed. Otoiths will be sampled from pink salmon carcasses in streams located within each defined stratum. Otoliths of hatchery origin will be identified by specific thermal marks applied to fry at the four Prince William Sound hatcheries in the Fall of 1998 and 1999. The proportion of Prince William Sound escapements comprised of spawning hatchery pink salmon will be estimated by stratum (geographic area and stream zone) and for the sound as a whole. Specific attention will be paid to hatchery contributions to spawning escapements studied in previous restoration projects. The study will be repeated in FY 01 to evaluate straying for the odd-year class.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00521-BAA	Ecological Risk of Long-Term Oil Exposure to Pink Salmon Spawning Habitat	C. Behr-Andres/AGRA	NOAA	New 1st yr. 1 yr. project		$98.0	$98.0

This project will conduct a preliminary probabilistic risk assessment of the effects to the early life stages of pink salmon in spawning habitats exposed to oil as a result of the spill. The project will (1) identify scientific (field and laboratory) data and indigenous knowledge that can be used to develop exposure and effects assessments, (2) use this data to develop a preliminary estimate of the risk to salmon populations in the former path of the oil spill, and (3) develop a sampling and analysis plan to collect additional field data in FY 01 that will improve the risk estimate developed during this preliminary assessment.

00539-BAA	Port Dick Spawning Channel Information Transfer to Resource Managers and Manuscript Preparation	G. Coble/Coble Geophysical	NOAA	New 1st yr. 1 yr. project		$43.1	$43.1

The Port Dick Creek spawning channel data set (Project /139A2) is generalized to refine design criteria for future gravel-bedded spawning channel restoration projects. This includes groundwater-surface water interaction modeling to define channel designs that maximize spawning area at times of minimum discharge. Numerical analyses also address infrequent maximum discharge events and their effects on gravel bedload transport rates, scour and deposition patterns in the spawning channels, as well as the effects of stream morphology on overall spawning channel area. The minimum and type of field data to support new rehabilitation projects is defined. Transition to long term monitoring of the Port Dick Creek restoration project is the subject of Project 00540.

00540-BAA	Port Dick Spawning Channel Long Term Sediment Transport Monitoring	G. Coble/Coble Geophysical	NOAA	New 1st yr. 3 yr. project		$21.7	$58.7

This project will define spawning channel rehabilitation design criteria of the Port Dick Creek salmon restoration (Project /139A2) through aerial photogrammetry. This project continues the long-term stream stability monitoring program through a reduced program of long term sediment transport and streambed stability monitoring. Stream discharge attains infrequent threshold values due to the large size of the spawning gravel. The continued long term data collection program is necessary in order to evaluate long term effectiveness of spawning channel restoration and to refine the minimum and type of field data necessary to support new rehabilitation projects. The continued monitoring will produce manuscripts for publication and information transfer documents.

00544	Lower Cook Inlet Salmon Ecology Study	P. McCollum/Port Graham Village Council	ADFG	New 1st yr. 1 yr. project		$234.5	$234.5

This project will improve existing knowledge of the survival mechanisms of pink and sockeye salmon in lower Cook Inlet. The project will sample outmigrating salmon smolts for growth, marks (thermal marks or coded wire tags), stomach contents (for prey species identification) and timing (days since release or outmigration).

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00590	Publication: Cytochrome P4501A Induction, Hydrocarbon Bioaccumulation and Composition, and Growth of Pink Salmon Fry	M. Carls/NOAA	NOAA	New 1st yr. 1 yr. project		$10.0	$10.0

This project will complete a manuscript that combines previously unpublished data with a synthesis of earlier papers concerning juvenile pink salmon and the oil spill. Evidence of growth inhibition in Prince William Sound fry exposed to oil is disputed by industry, who suggest exposure concentrations were well below levels known to cause acute or chronic growth effects. This paper will extend the results with previously unreported P4501A induction and PAH accumulation in laboratory fish, and compare these parameters plus growth to the same measures in Prince William Sound in 1989.

Pacific Herring

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00373	Effect of the Oil Spill on Herring Spawning Locations and Use of Nursery Areas	B. Norcross/UAF	ADFG	New 1st yr. 1 yr. project		$47.8	$47.8

This project will study the importance of the two factors that were identified by the Sound Ecosystem Assessment (SEA, Project /320) herring component as critical steps to successful recruitment, i.e., the effect of herring spawning location and the effect of how the larvae are distributed. Using physical circulation modeling of Prince William Sound developed under SEA, climate scenarios that result in herring larvae being transported from spawning locations to nursery areas will reveal which areas are most likely to retain herring larvae in the sound in locations conducive to successful development as juveniles. This technique also will show the potential effect on herring spawned or distributed within the spill area.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00374	Regional Analysis of Juvenile Herring in Prince William Sound	B. Norcross/UAF	ADFG	New 1st yr. 1 yr. project		$40.1	$40.1

This project will further analyze larval and herring distribution data collected within bays in Prince William Sound during the Sound Ecosystem Assessment project (SEA, /320). Specifically, the small-scale distribution of herring in relation to physical characteristics within bays used as nursery areas will be examined. This should result in an explanation of differences in factors that affect survival of juvenile herring among bays discovered during SEA. Broader implications will be examined by comparing the results to those of Atlantic herring.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00375	Effect of Herring Egg Distribution and Ecology on Year-Class Strength and Adult Distribution	E. Brown, B. Norcross/UAF	ADFG	Cont'd 2nd yr. 2 yr. project	$48.2	$48.0	$48.0

This project will examine the effect of Pacific herring egg distribution and abundance as well as oceanographic processes on year-class strength and adult distribution. Existing data will be used in the analysis. The findings will aid understanding of stock structure and population dynamics of herring in Prince William Sound. This information will facilitate area-specific targeting of catches and provide maximum conservation of the overall population. The methodology is applicable to other species and areas. This project will provide scientific documentation of unpublished fishery data.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00451	Influence of Exogenous Zooplankton Assemblages on Juvenile Herring	A. J. Paul/UAF	ADFG	New 1st yr. 1 yr. project		$51.3	$51.3

Previous Trustee Council projects noted the importance of the nearshore environment for juvenile Pacific herring nurseries. Studies have found that Gulf of Alaska derived carbon may be transported into Prince William Sound neritic environments. The zooplankton community in central Prince William Sound and in herring nursery bays has been described. Stable isotope analyses showed that Gulf of Alaska carbon influences Prince William Sound food webs. The importance of central Prince William Sound and Gulf of Alaska zooplankton to the neritic nursery areas and diets of juvenile herring has not been studied. This project will analyze zooplankton composition with respect to physical measurements from archived samples collected in neritic and central Prince William Sound from the spring of 1996 and 1997.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00462	Effect of Disease on Pacific Herring Population Recovery in Prince William Sound	G. Marty/Univ. of California Davis	ADFG	Cont'd 2nd yr. 3 yr. project	$78.5	$74.6	$156.3

The Pacific herring population of Prince William Sound has not recovered from severe population decline in 1993. Viral hemorrhagic septicemia virus and the fungus *Ichthyophonus hoferi* were identified as the two main diseases in these fish. Prevalence of *Ichthyophonus* decreased after 1995, but increased prevalence of viral hemorrhagic septicemia virus in 1997 and 1998 has been associated with delayed recovery. To determine if disease continues to impair recovery, and to document recovery when it occurs, this project will continue to monitor the prevalence of the two major diseases in Pacific herring in Prince William Sound in November 2000 and April 2001.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00562	Effect of Viral Hemorrhagic Septicemia Virus on Overwinter Survival of Juvenile Herring in Resurrection Bay: Implications for Year-Class Strength	R. Kocan/Univ. of Washington	ADFG	New 1st yr. 3 yr. project		$82.1	$290.0

Viral hemorrhagic septicemia virus (VHSV) has been identified in age-0 Pacific herring soon after metamorphosis (~3 months), and has been shown to be highly pathogenic, causing mortality in excess of 50 percent in captive fish. Herring that survive initial exposure have been shown to develop a solid immunity to reinfection, even when challenged with high concentrations of virus. The hypothesis to be tested in this project is that in most years some portion of each age-0 herring cohort is infected and recovers from VHSV, and that they are capable of surviving subsequent exposures to the virus as they age. To test the hypothesis, the project will capture age-0 herring in Resurrection Bay from July through September 2000 and again in April 2001 and evaluate their condition (K factor) as well as susceptibility (immunity) to VHSV.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
SEA and Related Projects							
00195	Pristane Monitoring in Mussels	J. Short, P. Harris/NOAA	NOAA	Cont'd 5th yr. 5 yr. project		$30.2	$90.2
	For the last four years, this project has focused on elucidating the transport mechanism of pristane from *Neocalanus spp.* copepods into mussels during spring in Prince William Sound, and on monitoring the seasonal variation of pristane in these mussels. Results from these prior years indicate that the current network of stations sampled twice during May is sufficient to provide a one-year advance indication of significant failure in the production of these copepods within the sound. Because these copepods are the key species linking primary productivity with higher trophic levels, a population failure would have serious ecosystem effects, including reduced catches of salmonids. Beginning in FY 00, the research component of this project will be dropped and the sampling effort reduced considerably as guided by previous research. The objective of this monitoring effort is to provide advance warning of a "reverse regime shift" in Prince William Sound.						
00320-BAA	Sound Ecosystem Assessment (SEA): Publishing the Integrated Final Report and a Program Synthesis	J. Allen/PWSSC	NOAA	Cont'd 7th yr. 7 yr. project		$125.1	$125.1
	This project will provide coordination to print, copy and distribute the final report for Project /320 and to review, publish and distribute a SEA synthesis written for a dedicated volume of Fisheries Oceanography. The final report is expected to exceed 1,000 pages (some with color). The Fisheries Oceanography volume will be an externally peer-reviewed scientific treatise designed to address ecosystem-level aspects of Project /320 not covered adequately by the final report. These products represent the close-out documentation for SEA.						
00389	3-D Ocean State Simulations for Ecosystem Applications from 1995-98 in Prince William Sound	J. Wang/UAF	ADFG	New 1st yr. 2 yr. project		$142.8	$228.1
	Using the observed data collected from 1995-98 in Prince William Sound and the forcing of tide, coastal current inflow/outflow, freshwater discharge, and wind stress, a 3-D Prince William Sound model developed from the SEA project (/320) will be used to produce a continuous four year, 3-D fields of velocity, temperature, salinity and mixing coefficients for the resource managers, fishing industry and biological applications (in SEA, only 1996 physical forcing has been provided). In addition, the interannual variability of Prince William Sound ocean circulation, temperature, and salinity due to interannually variable atmospheric forcing will be studied. This will allow identification of the key environmental parameters to be included in a long-term monitoring program to assist resource managers.						

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00393-BAA	Prince William Sound Food Webs: Structure and Change	T. Kline/PWSSC	NOAA	Cont'd 2nd yr. 3 yr. project	$143.6	$154.6	$277.2

Recent research has shown that the oceanographic conditions connecting the northern Gulf of Alaska with Prince William Sound may affect recruitment and nutritional processes in fishes. Accordingly, food webs are subject to changes in carbon flow occurring between the Gulf of Alaska and Prince William Sound. This project seeks to (1) conduct retrospective analysis of Gulf of Alaska production shifts since the oil spill and (2) address Ecopath model validation data gaps. These analyses will enable a better understanding of the ecological role of regime shift processes conjectured to be impeding the natural restoration of populations in Prince William Sound affected by the oil spill.

00493	IMMAGE: Integrated Monitoring of Mechanisms Affecting the Gulf of Alaska Ecosystem	P. Anderson/NOAA	NOAA	New 1st yr. 3 yr. project		$178.3	$346.3

This project is an integrated study of mechanisms controlling changes in community structure in the Gulf of Alaska ecosystem. Three major components include (1) small-mesh trawl sampling of benthic and epi-benthic megafauna in representative areas of the Gulf of Alaska, (2) deployment of a moored buoy array to provide "real-time" oceanographic data in the coastal region, and (3) associated plankton sampling to quantify phyto- and zooplankton dynamics in the water column during critical periods of life history. These components should lead to a more comprehensive understanding of biological-physical coupling and dynamics of the Gulf of Alaska ecosystem.

00541-BAA	Publication: Prince William Sound Isotope Ecology	T. Kline/PWSSC	NOAA	New 1st yr. 2 yr. project		$34.6	$71.3

A crucial part of the scientific research process is dissemination of the results to the scientific community. This project will prepare and submit a paper on salmon and one on zooplankton for publication in FY 00.

00542-BAA	Stable Isotope Biogeochemical Markers as Linkages Between Fishes and Their Food Sources in Northern Gulf of Alaska Production Zones	T. Kline/PWSSC	NOAA	New 1st yr. 3 yr. project		$96.9	$279.3

This project will use carbon and nitrogen natural stable isotope abundance measured in northern Gulf of Alaska biota as a tool to track biophysical coupling between zooplankton and juvenile fishes. The Sound Ecosystem Assessment (SEA, Project /320) demonstrated biophysical coupling between zooplankton and juvenile fishes using natural stable isotope tracers. Isotopic signatures of zooplankton reflected the spatial processes occurring at the isotope-discriminating primary production level while isotopic patterns of juvenile pelagic fish reflected spatial and temporal coupling of secondary and tertiary production. This project will extend observations made in SEA into the northern Gulf of Alaska continental shelf by augmenting the existing GLOBEC project. Incorporation of potential coastal and oceanic carbon sources will be assessed at consumer production levels. Shifts in the dependency of oceanic versus coastal carbon sources deduced from isotopic data when paired with ongoing oceanographic studies will provide direct evidence, linking effects of oceanic forcing upon biological processes, and given a long observational base, eventually linking climatic shifts with observed changes in marine populations.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00547-BAA	Monitoring System Design for the Prince William Sound Nowcast/Forecast System	C. Mooers/Univ. Miami	NOAA	New 1st yr. 1 yr. project		$91.9	$91.9

A high-resolution, time-variable numerical circulation model for Prince William Sound was developed and partially validated under the Sound Ecosystem Assessment (SEA, Project /320) and applied to ecosystem topics. With partial support from the Oil Spill Recovery Institute the model is being extended to form a real-time nowcast/forecast system that can be used for projecting the dispersal of oil spills, but which can also be used for projecting the dispersal of fish eggs, larvae, and juveniles. A critical element in any nowcast/forecast system is a real-time observing system to help force the model. This project will analyze various existing observed time series and examine their impact in constructively constraining the model and analyze model output to help guide the selection of which variables need to be observed at which locations for assimilation of data into the model.

00552-BAA	Exchange Between Prince William Sound and the Gulf of Alaska	S. Vaughn/PWSSC	NOAA	New 1st yr. 3 yr. project		$164.1	$421.9

One of the least understood physical processes that influence the biological components of Prince William Sound is the exchange between the northern Gulf of Alaska and Prince William Sound. This project will document the interannual variability in water mass exchange between Prince William Sound and the adjacent northern Gulf of Alaska at Hinchinbrook Entrance, and identify mechanisms governing this exchange. The project will deploy an upward looking ADCP mooring in Hinchinbrook Entrance, and collect and analyze temperature and salinity data from key stations in the sound. The mooring velocities will also provide boundary conditions for the Prince William Sound numerical circulation model.

Sockeye Salmon

00048-BAA	Publication: Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the Oil Spill and Large Spawning Escapements	G. Ruggerone/NRC, Inc., D. Rogers/Univ. Wash.	NOAA	Cont'd 2nd yr. 1 yr. project	$0.0	$10.3	$10.3

Trustee Council funded research by Ruggerone and Rogers (Project 96048) demonstrated that large spawning escapements can have long-term impacts on sockeye growth and adult returns. The findings have new and important consequences for stock-recruitment modeling, which is the basis for determining escapement levels that allow for maximum sustained harvest. The research also demonstrated that marine growth of sockeye salmon increased after the mid-1970s, corresponding to the increase in salmon production throughout Alaska and the ocean regime shift that has impacted numerous species. This project will fund preparation of two manuscripts for publication in peer-reviewed journals.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
Cutthroat Trout, Dolly Varden, and Other Fish							
00383	Distribution of Cutthroat Trout and Dolly Varden in Western Prince William Sound	R. Spangler/USFS	USFS	New 1st yr. 3 yr. project		$28.1	$59.1
	Significant gaps in knowledge exist regarding the distribution and relative abundance of cutthroat trout and Dolly Varden, particularly in western Prince William Sound. This project will investigate watersheds that have a high likelihood of containing these species to further describe the population distributions. The project is designed to integrate with past and current research on cutthroat and Dolly Varden in Prince William Sound. The results of this project, when combined with these other findings, will provide a more complete picture of these species in Prince William Sound and will greatly assist managers in future restoration and conservation efforts.						
00392	Growth Rates of Cutthroat Trout and Dolly Varden in Prince William Sound: Comparison of Populations in Oiled and Unoiled Sites	G. Reeves/USFS, D. Markle/Oregon State Univ.	USFS	New 1st yr. 3 yr. project		$159.4	$453.4
	Dolly Varden and cutthroat trout are listed as injured resources whose recovery is unknown. They were originally listed as injured because studies following the oil spill found that growth rates of populations in oiled areas were less than those of populations in unoiled areas. This project will examine growth rates of populations in oiled and unoiled areas by comparing sites with similar geographic features. Results from this study will determine the status of these species.						
00396	Diet, Trophic Interactions, and Historical Trends in Occurrence of Salmon Sharks, Sleeper Sharks, and Spiny Dogfish in Prince William Sound and the Eastern Gulf of Alaska	L. Hulbert/NOAA	NOAA	New 1st yr. 2 yr. project		$41.9	$84.0
	An increasing trend in the abundance of sharks in Prince William Sound and the eastern Gulf of Alaska have been reported in recent years. In regions of high abundance, sharks have the potential to significantly impact a number of commercially and ecologically important species. This project encompasses a unique approach to understanding trends in abundance and trophic dynamics of these apex predators. A number of short and long term time-series of shark by-catch data are available for a retrospective analysis of spatial and temporal patterns of distribution and abundance. Refining the shark diet parameters in the Prince William Sound Ecopath model (Project /330), through analysis of shark stomach samples, will elucidate important ecosystem linkages representing species interactions.						
00458	Comparison of Three Techniques For Estimating Fish Population Diversity, Abundance, and Size Structure	R. Spangler/USFS	USFS	New 1st yr. 1 yr. project		$15.8	$15.8
	Significant gaps in knowledge exist regarding the distribution and abundance of cutthroat trout and Dolly Varden, particularly in western Prince William Sound. Populations tend to be small and relatively isolated from each other. Although commonly used methods work well for determining presence and absence of species, little is known regarding the bias associated with each method for determining size structure and abundance for cutthroat trout and Dolly Varden in Prince William Sound. This project will evaluate minnow trapping, snorkeling and electrofishing techniques for determining species richness (number of species), abundance (number of individuals) and size structure (age class).						

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00478	Defining Critical Habitat for Marine Reserves: Spatial and Temporal Distribution of Anadromous and Pelagic Fishes in the Gulf of Alaska	J. Nielsen/USGS-BRD	DOI	New 1st yr. 3 yr. project		$188.8	$577.8

The definition of "critical habitat" in the marine environment is essential to the development of reserves or protected areas. This project will investigate the temporal and spatial distribution of four key fish species (Pacific halibut, king salmon, coastal cutthroat trout, and ling cod) in the Gulf of Alaska that fall under the jurisdiction of the Trustee Council in their efforts to restore the resources and services injured by the spill. Individual fish will be monitored using satellite pop-up and archival satellite tags on live fish, monitoring their seasonal movements and critical habitats in nearshore and marine environments in the Gulf of Alaska.

00576	Relationship Between Oil Exposure and Reproductive Function in Dolly Varden	T. Collier/NOAA	NOAA	New 1st yr. 1 yr. project		$82.0	$82.0

This project will conduct a controlled laboratory experiment to obtain detailed information on dose response relationships between exposure to crude oil and reproductive endpoints in Dolly Varden. Additionally, Dolly Varden will be collected from previously sampled impacted and non-impacted areas in Alaska to determine their recovery from oil-spill exposure, both in terms of actual exposure as well as current reproductive function. The data derived from this project may be especially relevant in view of recent research suggesting that low-level exposure to oil-derived PAHs may be associated with reduced return rates in other salmonid species in Prince William Sound.

Marine Mammals

00012A-BAA	Photographic and Acoustic Monitoring of Killer Whales in Prince William Sound and Kenai Fjords	C. Matkin/North Gulf Oceanic Society	NOAA	Cont'd 8th yr. 9 yr. project		$93.6	$179.2

This project will continue the monitoring of the damaged AB pod and other Prince William Sound/Kenai Fjords killer whales that has occurred on a yearly basis since 1984. Methods include the photo-identification of individual whales and acoustic monitoring with remote and vessel-based hydrophone systems. The project continues interpretation of previous data and data collected with matching funds. It provides for publication of the results ffom this multi-year examination of killer whale population biology, genetics, acoustics, trophic interactions, spatial and temporal distribution patterns, and contaminant accumulation.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00064-CLO	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	K. Frost/ADFG	ADFG	Cont'd 6th yr. 6 yr. project	$130.0	$130.9	$130.9

This project is the final year of a project to monitor the status of harbor seals in Prince William Sound and investigate the hypothesis that food limitation to pups and juveniles has caused the ongoing decline. Aerial surveys will be conducted during molting to determine whether the population continues to decline, stabilizes, or increases. Trend analysis using Bayesian statistics will be completed and a manuscript submitted for publication. No additional field work other than the aerial surveys will be conducted. Fatty acids analysis will be conducted on blubber samples collected during Summer 1999, and development of mathematical models continued to estimate seal diets and whether they have changed both within the 1990s and since the 1970s.

00341	Harbor Seal Recovery: Controlled Studies of Health and Diet	M. Castellini/UAF	ADFG	Cont'd 3rd yr. 4 yr. project	$124.1	$123.7	$220.0

This project will continue a long-term study currently underway at the Alaska SeaLife Center to quantify the impact of specific fish diets on the health and body condition of harbor seals. Even though health status biomarkers for marine mammals in Prince William Sound were established during field trials (Project /001), the critical test of how markers vary in an individual as a result of eating specific prey has not been conducted. The project will also establish whether specific diets are nutritionally adequate to maintain seal health by monitoring health parameters and measuring assimilation efficiency during feeding trials. While this project will focus on harbor seal health, the approach is applicable to other injured top predators.

00371	Effects of Harbor Seal Metabolism on Stable Isotope Ratio Tracers	D. Schell/UAF	ADFG	Cont'd 2nd yr. 3 yr. project	$101.7	$104.9	$201.2

A major concern with the use of stable isotope tracers in ecosystem studies is the fidelity with which ratios are transferred up food chains. Use of specific habitats or prey cannot be assessed if geographic gradients in isotope ratios are laid on top of trophic effects and/or prey switching. To remove these problems, this project will seek specific conservative biomarkers such as essential amino acids or fatty acids that carry isotope ratios unmodified by metabolism. Amino acids labeled with 15N and 13C will be used to follow transamination and carbon relocation during metabolic processes in the seals at the Alaska SeaLife Center. Specific fatty acid isolation and determination of suitability as habitat biomarkers will follow in year three of the project.

00441	Harbor Seal Recovery: Effects of Diet on Lipid Metabolism and Health	R. Davis/Texas A&M Univ.	ADFG	Cont'd 2nd yr. 2 yr. project	$131.6	$131.6	$209.7

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

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00461	Contaminant Levels in North Pacific Killer Whales	M. Krahn/NOAA	NOAA	New 1st yr. 2 yr. project		$73.8	$77.7

Organochlorines are widespread and persistent contaminants in the marine environment. Many compounds can bioaccumulate in top-level, marine predators (e.g., killer whales). Archived blubber samples, obtained from killer whales ranging from California to Alaska, will be analyzed to determine levels of selected organochlorines. Resultant data will be compared to those obtained for Prince William Sound killer whales. A broadscale, geographic index, depicting North Pacific killer whale contaminant levels, will be completed. Linkage of high contaminant levels to killer whale pods with low reproduction (AT1 pod) and population decline (AB pod) will be investigated.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00509	Long-Term Monitoring of Harbor Seal Populations: Development of an Experimental Design	R. Small, K. Frost/ADFG	ADFG	New 1st yr. 1 yr. project		$55.3	$55.3

This project will develop an experimental design for a long-term monitoring program of harbor seal populations in the spill area. Current monitoring programs include aerial population trend and abundance surveys, and land-based counts at a key index site (Tugidak Island). These current monitoring programs will be evaluated based on sampling design, accuracy and precision, and their application to the management and conservation needs of harbor seals. Revisions to the methodology of current programs will be made based on new research results concerning stock structure, population trends, and life history characteristics, and advances in marine mammal survey and abundance assessment.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00533-BAA	Effects of Increasing Boat Traffic on Use of Haulouts by Harbor Seals in Western Prince William Sound	C. Johnson/ABR, Inc.	NOAA	New 1st yr. 3 yr. project		$185.6	$576.1

This project will study disturbance of harbor seals at ice and terrestrial haulouts in portions of Prince William Sound near the port of Whittier, where recreational boat traffic is currently growing and expected to increase at a higher rate with the completion of the road to Whittier. The project will monitor use of haulouts during two periods (pupping and molting) in the annual cycle of harbor seals when haulout use is most concentrated and disturbance may be most disruptive. The level of disturbance and the reactions of seals at two types of haulouts (ice and terrestrial) will be quantified, reactions to different types of boats will be measured, and annual changes in boat traffic and disturbance reactions will be monitored over a three-year period.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00564	Harbor Seals on Glacial Ice in Prince William Sound: Habitat Use, Trophic Interactions and Abundance	K. Frost/ADFG	ADFG	New 1st yr. 3 yr. project		$122.4	$522.4

This project will study harbor seals on glacial ice haulouts in Prince William Sound. During 1989-99, harbor seals on rocky intertidal haulouts in central and southern Prince William Sound were studied under Project /064. This project will conduct similar studies in glacial ice areas of Prince William Sound by (1) conducting aerial surveys of glacial ice haulouts during molting to determine abundance, (2) comparing diet of these and other Prince William Sound seals using fatty acids analysis of blubber, (3) studying body condition using D_2O equilibration, and (4) studying movements, habitat use and site fidelity by instrumenting seals with satellite tags. Emphasis will be on pups and juveniles, the age groups most likely to be affected by changes in food availability.

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Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
Nearshore Ecosystem							
00025-CLO	Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators (NVP)	L. Holland-Bartels/USGS-BRD, et al	DOI	Cont'd 6th yr. 6 yr. project		$217.2	$217.2
	FY 00 will be dedicated to revising portions of the FY 99 final report for publication in peer reviewed journals. Ten manuscripts will be published collectively and 13 additional manuscripts will be submitted to separate journals in FY 00. Funds will also be used for responding to review comments, final analysis, and final report writing, as well as individual presentation by 12 principal investigators of their project results at one professional meeting. This five-year project is making an integrated assessment of trophic, health, and demographic factors across a suite of apex predators injured by the spill to determine mechanisms constraining recovery and to improve knowledge of the status of recovery.						
00090-CLO	Monitoring of Oiled Mussel Beds in Prince William Sound	P. Harris, C. Brodersen/NOAA	NOAA	Cont'd 2nd yr. 2 yr. project		$64.0	$64.0
	This project is assessing the recovery of 28 mussel beds in Prince William Sound that still had significant concentrations of oil when last sampled in 1995 or 1996. In FY 99, hydrocarbon concentrations are being measured in mussels, other invertebrates, and sediments and densities of mussels and other selected invertebrates are being monitored in these beds. Oiled sediments were replaced with clean sediments in 12 of the beds in 1994. Sampling in 16 beds that were not restored will document rates of natural recovery. In FY 00, the chemical analysis of samples collected in FY 99 will be completed and a final report prepared.						
00290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	J. Short, B. Nelson/NOAA	NOAA	Cont'd 9th yr. 11 yr. project		$59.3	$129.3
	This project is a continuation of the Natural Resource Damage Assessment and restoration database management, sample storage, and interpretive service. New data will continue to be incorporated into the Trustee Council hydrocarbon database. Updated summary reports for investigators and managers will be produced along with an electronic copy of the data for all data queries. A database for pristane sample collection and analysis information will be maintained and a database will be initialed for fatty acid/lipid class composition sample collection and analysis for Auke Bay Lab projects funded by the Council.						

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00348-CLO	Responses of River Otters to Oil Contamination: A Controlled Study of Biological Stress Markers	M. Ben-David, T. Bowyer, L. Duffy/UAF	ADFG	Cont'd 3rd yr. 2 yr. project	$0.0	$70.7	$70.7

This project will complete data analyses and manuscript preparation for Project /348, which was designed to explore the effects of oil contamination on physiological responses in river otters. Fifteen captive otters were exposed to two levels of oil contamination under controlled conditions at the Alaska SeaLife Center. Samples of blood, tissues and feces were collected for analysis of biomarkers and for immunological examinations. A wealth of data was collected during the experiment phase. Completion of data analyses and publication of results are especially important in light of the recent listing by the Trustee Council of river otters as a recovered species.

00379	Assessment of Risk Caused by Residual Oil in Prince William Sound Using P450 Activity in Fishes	S. Jewett/UAF	ADFG	Cont'd 2nd yr. 2 yr. project	$28.3	$103.1	$139.9

This project will determine the spatial extent of potential exposure to hydrocarbons in western Prince William Sound by examining P450 activity in two coastal fishes, masked greenling and crescent gunnel taken mainly adjacent to oiled mussel beds in 1998, 1999, and 2000. These fishes live and feed in the nearshore zone, and provide an index of exposure for fishes and other vertebrates. In addition, the project will examine the relationship between P450 levels in these fishes, hydrocarbon concentrations in sediments, and hydrocarbon metabolites in these fishes to help determine if exposure is from residual oil from the *Exxon Valdez* spill.

00407	Harlequin Duck Population Dynamics and Satellite Telemetry	D. Rosenberg/ADFG	ADFG	New 1st yr. 3 yr. project		$110.1	$330.3

Harlequin duck populations have not recovered from the effects of the oil spill. Populations are declining in oiled areas of Prince William Sound while increasing in unoiled areas. This project will conduct late-winter boat surveys to assess the recovery of ducks inhabiting oiled areas. Population structure, abundance and recruitment will be compared between oiled and unoiled areas in Prince William Sound to assess trends, population dynamics, and the progress of recovery. Ten males in oiled areas will be captured and implanted with satellite transmitters. This will provide information on pre- and post breeding movements, dispersal, migration routes, and location of breeding areas. This information will aid in understanding causes of population declines and assessing recovery.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00413	Assessment of Human Disturbance to Nesting Black Oystercatchers	M. Tetreau/NPS, K. Murphy/USFS	DOI	New 1st yr. 1 yr. project		$46.2	$46.2

This project will follow-up on work begun by (and funded by) the National Park Service in Kenai Fjords National Park in FY 99. A controlled field study will be conducted to determine the impacts, if any, of recreational campers on the behavior of nesting black oystercatchers. Each selected nest will be observed in undisturbed, disturbed, and post-disturbed states and quantified behavioral observations will be compared. The pilot study being conducted at Kenai Fjords National Park may dictate changes in the methods proposed here. The results of this research will directly effect how backcountry use in Kenai Fjords National Park and the Glacier Ranger District of the Chugach National Forest will be managed, and will be applicable to other coastal areas as well.

00423	Patterns and Processes of Population Change in Selected Nearshore Vertebrate Predators	J. Bodkin, D. Esler, B. Ballachey/USGS-BRD, T. Dean/CRA, Inc.	DOI	Cont'd 2nd yr. 4 yr. project		$284.9	$1022.6

Sea otters and harlequin ducks have not fully recovered from the oil spill. This project will explore links between oil exposure and the lack of population recovery, with the intent of understanding constraints to recovery of these species and the nearshore environment. Sea otter work will include aerial surveys of distribution and abundance, estimation of abundance and size of green sea urchins, measurement of P4501A (CYP1A), and evaluation of survival and movements. Harlequin duck work will include field and captive bird components. Field studies will examine the relationship between survival and CYP1A. Captive experiments will examine the relationships between oil exposure and CYP1A induction, and metabolic and behavioral consequences of exposure.

00446	Long-Lived Bioactive Microbial Biooxidation Products From Petroleum	D. Button/UAF	ADFG	New 1st yr. 3 yr. project		$82.8	$158.7

Toxicity is generated from biochemically inert hydrocarbons by oxidization to long-lived reactive derivatives. Bacteria carry out the oxidation, utilizing small concentrations of dissolved and oil-phase components. Most are excreted following the first oxidation step because of insufficient cytoplasmic enzymes and low amounts of the necessary permeases for active transport. These products, therefore, accumulate in the environment. Unlike hydrocarbons, the products are difficult to extract from seawater, but novel technology allows measurements. This project will attempt to determine the identity and dynamics of these accumulating components prior to toxicity experiments using defined conditions and compounds.

00459	Residual Oiling of Armored Beaches and Mussel Beds in the Gulf of Alaska	G. Irvine/USGS-BRD	DOI	Cont'd 2nd yr. 2 yr. project	$40.0	$40.8	$60.8

During FY 00, this project will focus on data and hydrocarbon analyses, preparation of the final report, and preparation and submittal of two manuscripts. Funding is requested for presentation of study results at a professional meeting. In FY 99, boulder-armored beach sites and several oiled mussel beds in the Gulf of Alaska are being resampled to determine whether oil persists.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00466-CLO	Recovery Status of Barrow's Goldeneyes	D. Esler/USGS-BRD	DOI	Cont'd 2nd yr. 2 yr. project	$14.2	$15.8	$15.8

Data available at the onset of this project (population trends and indices of contaminent exposure) raised concern that Barrow's goldeneye populations may have been injured by the oil spill, may not be fully recovered, and may continue to suffer deleterious effects of the spill. This project is designed to critically assess the recovery status of Barrow's goldeneye populations through assemblage and analysis of all existent, relevant data. This work will lead to definition of recovery status, identification of any data gaps limiting understanding of recovery status or impediments to recovery, and, if warranted, proposal of directed research to fill those gaps in subsequent years. Most data analyses were conducted during FY 99; FY 00 funds are requested for final data analyses and compilation of analysis results and other information into the final report and manuscripts.

00469	Sea Otter Baseline Population Surveys	A. Doroff/USFS, J. Bodkin/USGS-BRD	DOI	New 1st yr. 2 yr. project		$55.8	$98.8

This project will conduct aerial surveys of sea otters along the Kenai Peninsula and Kodiak Archipelago, using methods developed through previous Trustee Council funded projects. The current status of sea otter populations affected by the oil spill outside of Prince William Sound is unknown. Only one sea otter survey has been conducted in this area since 1990. In addition, large-scale declines in sea otter populations across the western and central Aleutians have been observed in recent years. The declines in sea otters may be a result of predation by killer whales in response to declines in other pinniped species in the Bering Sea and Gulf of Alaska. If the decline in sea otters is related to pinniped declines through prey switching, the phenomenon may extend into the spill area.

00510-BAA	Recovery of Intertidal Communities and Recommendations for Future Monitoring	T. Dean/CRA, Inc.	NOAA	New 1st yr. 3 yr. project		$140.4	$222.4

This project will examine the state of recovery of key habitats and representative injured species within the intertidal zone in Prince William Sound. Sampling will be conducted at intertidal sites within the sheltered rocky habitat that were previously sampled as part of the Coastal Habitat Injury Assessment Project (CH1A). In addition, sampling will be conducted at representative sites sampled by the National Oceanographic and Atmospheric Administration (NOAA) Hazmat team. These data, along with those previously collected during Project CH1A and the NOAA Hazmat program, will be evaluated to assess the status of recovery. In addition, in a collaborative effort with NOAA Hazmat, the project will provide an overview of methods for assessing recovery and make recommendations for future monitoring.

00518-BAA	Assessment of Recovery and Restoration Needs on Treated Mixed-Soft Beaches	D. Lees/Littoral Ecological Services	NOAA	New 1st yr. 3 yr. project		$412.5	$683.7

Previous studies suggest that infaunal assemblages on beaches in Prince William Sound exposed to high-pressure hot-water washing during the 1989-90 shoreline treatment program remain severely damaged in terms of species composition and function. This project will assess the generality of this apparent injury to these assemblages to determine whether the beaches are functionally impaired in terms of their ability to support foraging by subsistence users and nearshore vertebrate predators. The project will also provide insight into potential remediation alternatives for restoring the biodiversity and functional aspects of these assemblages.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00525	General-Interest Publications on the Findings of the Nearshore Vertebrate Predator Ecosystem Project	B. Ballachey, D. Bohn/USGS-BRD	DOI	New 1st yr. 1 yr. project		$26.9	$26.9
	This project will highlight and summarize the final research findings of the Nearshore Vertebrate Predator project (/025) in a popular writing style targeted for one or more non-technical products. The Nearshore Vertebrate Predator project is one of the three large-scale ecosystem projects sponsored by the Trustee Council, and an easy-to-read summary of the final synthesis of its scientific findings will provide the public with an appreciation for the value and complexity of ecosystem-scale research and an understanding of the longer-term impacts of the oil spill on the nearshore ecosystem. Potential strategies for restoration and implications for future management of the nearshore environment also will be addressed.						
00527-BAA	Status of Black Oystercatchers in Prince William Sound	S. Murphy/ABR, Inc.	NOAA	New 1st yr. 1 yr. project		$116.8	$116.8
	The status of black oystercatchers recently was upgraded by the Trustee Council from "injured with recovery unknown" to "recovering." Because low productivity of the breeding population in Prince William Sound is the main outstanding issue for this species, this project will provide a thorough evaluation of breeding oystercatchers in the spill area of western Prince William Sound. The project also will examine factors that potentially are influencing productivity, including habitat, predators, oiling, and interactions that may occur among those factors. The same population of breeding oystecatchers that was studied in previous years will be studied to facilitate among-year comparisons and reevaluations of previously identified impacts.						
00537	Effects of Crude Oil and Dispersant Mixtures On Marine Phytoplankton Primary Production	N. Webb/UAA	ADEC	New 1st yr. 1 yr. project		$5.5	$5.5
	This project will determine the potential impact of oil and the oil dispersant Corexit 9527 on the primary production of sub-arctic marine phytoplankton. This information will be valuable in assessing the potential effect oil and dispersant mixtures have upon the trophic base of the marine environment.						
00553	Comparison of Cytochrome P4501A Induction in Blood and Liver Cells of Sea Otters	B. Ballachey/USGS-BRD, P. Snyder/Purdue Univ.	DOI	New 1st yr. 1 yr. project		$22.3	$22.3
	This project will sample liver from captured sea otters for assays of P4501A (CYP1A) and examination of histopathological changes. Liver CYP1A levels will be compared to those measured in blood from the same individuals. Archived frozen liver samples from sea otters that were oiled and died in 1989 will also be assayed for CYP1A to enable comparison of current levels of CYP1A induction with levels in sea otters that had a know, high degree of oil exposure. The results of this study will provide a basis for comparison of cytochrome P4501A induction in sea otters in 1989, in 1996-98, and in 2000, and will help determine if there is a decline over time in CYP1A levels. This project will complement Project 00423, which proposes to resample CYP1A in blood from sea otters.						

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00571	Toxicity Syndrome of Environmentally Persistent Petroleum	J. Hameedi/NOAA	NOAA	New 1st yr. 2 yr. project		$137.4	$237.4

This project will determine direct chemical toxicity as well as genotoxicity on test organisms following exposure to fresh and weathered North Slope crude oil and to sediment from subtidal shorelines in Prince William Sound that still retain oil from the *Exxon Valdez* oil spill. The project is predicated on increasing scientific evidence that links cytological damage, heritable mutations in the gene pool, and other genotoxic effects to adverse impacts on Darwinian fitness parameters. Impairment of these parameters, in turn, has individual or population level consequences. The project, utilizing a suite of newly developed toxicity bioassays and chemical measurements, offers a novel approach to examining acute as well as long-term injuries to natural resources from environmental contamination.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00591	Publication: Population Structure, Growth, Mortality and Production of Mussels in Prince William Sound	C. O'Clair, M. Lindeberg/NOAA	NOAA	New 1st yr. 1 yr. project		$22.7	$22.7

This project will publish three papers on population structure, growth, mortality and production in the mussel, *Mytilus trossulus*, in western Prince William Sound. These papers will summarize some of the results of the Nearshore Vertebrate Predator Project (/025) in which data collection, processing and the bulk of data analysis was completed. Three additional papers have been proposed in Project /025 as appendices to the final report.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00592	A Taxonomic Synthesis of Intertidal Algae for Prince William Sound	M. Lindeberg/NOAA	NOAA	New 1st yr. 2 yr. project		$35.4	$70.4

Intertidal communities are among the resources that have not fully recovered from the oil spill . Intertidal algae is an important component of the coastal habitat and a resource for subsistence and commercial harvests. The spill offered a unique opportunity for researchers to collect algal specimens over a large and remote coastal area previously unexplored by scientists. This project will synthesize the taxonomic and technical information gained by these researchers into an intertidal algae of Prince William Sound field guide. An interactive CD-ROM with world wide web capabilities will supplement the field guide. This project will also produce a Restoration Notebook Series publication on algae.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00598	Publication: Resolution of Mixtures Containing *Exxon Valdez* Oil and Regional Background Hydrocarbons in Subtidal Sediments	J. Short/NOAA	NOAA	New 1st yr. 1 yr. project		$13.5	$13.5

Using existing hydrocarbon data, this project will report application of multivariate statistical methods to the problem of resolving a hydrocarbon mixture from two different sources in subtidal sediments of Prince William Sound, *viz., Exxon Valdez* oil and the regional background hydrocarbon pattern. Multivariate logistic and Dirichlet error distributions will be compared as bases for maximum likelihood mixture compositions, under the assumption that *Exxon Valdez* oil is time-varying in composition, and the regional background from coal is not. The hydrocarbon database produced under Project /290 will be used to evaluate the performance of these approaches. Results will be used to evaluate biases inherent in a previous bivariate approach to resolution of these mixtures, which had erroneously assumed that both hydrocarbon sources were time-varying, and had concluded that *Exxon Valdez* oil contributed a small increment on a large background in shallow subtidal sediments.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00599	Evaluation of Yakataga Oil Seeps as Regional Background Hydrocarbon Sources in Benthic Sediments of the Spill Area	J. Short/NOAA	NOAA	New 1st yr. 2 yr. project		$94.1	$104.1

This project will evaluate fluxes of crude oil from terrestrial oil seeps and of particulate coal near Yakataga into the northern Gulf of Alaska to delineate the extent of "natural oil pollution" in the area affected by the oil spill.

Seabird/Forage Fish and Related Projects

00144A-CLO	Common Murre Population Monitoring	D. Roseneau/USFWS	DOI	Cont'd 5th yr. 5 yr. project	$23.0	$15.4	$15.4

This project will analyze Barren Islands murre census data collected in FY 99 and prepare a final report comparing FY 99 results with counts made during the 1993-97 Barren Islands murre population monitoring studies (projects 93049, 94039, 96144, 97144), the 1989-92 damage assessment and restoration studies (projects B3, R11), and 1990-92 Exxon-sponsored studies. The final report will contain data on murre productivity at the Barren Islands 1989-99, discuss these data in relation to trends in population size during the same interval of time, and discuss changes in numbers of birds that may have occurred at the nesting colonies because of recent El Nino and La Nina events.

00159	Surveys to Monitor Marine Bird Abundance in Prince William Sound During Winter and Summer 2000	B. Lance, D. Irons/USFWS	DOI	Cont'd 7th yr. 9 yr. project		$299.6	$581.9

This project will conduct small boat surveys to monitor abundance of marine birds and sea otters in Prince William Sound during March and July 2000. Six previous surveys have monitored population trends for more than 65 bird and eight marine mammal species in Prince William Sound. Data collected in 2000 will be used to continue to examine trends from summer 1989-00 and from winter 1990-00 by determining whether populations in the oiled zone changed at the same rate as those in the unoiled zone. Overall population trends for Prince William Sound from 1989-00 will be examined. Data collected in 1998 indicated that none of the designated injured species showed evidence of recovery in either winter or summer populations from 1989-1998.

00163-CLO	APEX: Alaska Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska	D. Duffy/Paumanok Solutions, et al	NOAA	Cont'd 7th yr. 7 yr. project	$900.1	$1763.2	$3141.7

This project will close out (data analysis, final report writing, and some manuscript preparation) Project /163, which is using seabirds as probes of the trophic (foraging) environment of Prince William Sound and comparing their reproductive and foraging biologies, including diet, with similar measurements from Cook Inlet, an area with apparently a more suitable food environment. These measurements are being compared with hydroacoustic, aerial, and net sampling of fish to calibrate seabird performance with fish distribution and abundance. This will allow a determination of the extent to which food limits the recovery of seabirds from the oil spill. Historical data from a variety of sources is being used to detect shifts in forage fish abundance and to test hypotheses explaining such shifts.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00169-CLO	A Genetic Study to Aid in Restoration of Murres, Guillemots, and Murrelets in the Gulf of Alaska	V. Friesen/Queen's Univ., J. Piatt/USGS-BRD	DOI	Cont'd 4th yr. 4 yr. project	$13.8	$19.2	$19.2

Populations of common murres, pigeon guillemots, and marbled and Kittlitz's murrelets suffered high mortalities following the oil spill. In FY 00, this project will finish molecular analyses to measure genetic differentiation and gene flow among colonies of these species. The project will aid restoration by (1) determining the geographic limits of populations affected by the spill, (2) identifying sources and sinks, and (3) identifying appropriate reference or control sites for monitoring. As incidental results, it will also reveal cryptic species and subspecies, indicate the importance of inbreeding and small effective population sizes in restricting recovery, and suggest suitable source colonies for translocations.

00287-BAA	Seabird-Oceanographic Relationships in the Northern Gulf of Alaska: Integration with NSF/NOAA Study GLOBEC	R. Day/ABR, Inc.	NOAA	New 1st yr. 1 yr. project		$164.9	$164.9

This project will conduct a study of seabirds in the Northern Gulf of Alaska (Aialik Bay to Montague Island) by using a ship-of-opportunity sampling platform that is being used by the National Science Foundation/National Oceanographic and Atmospheric Administration project GLOBEC (Global Ocean Ecosystem Dynamics), which also will provide access to an extensive series of oceanographic data. This project is designed to identify ecological processes affecting temporal (seasonal and interannual) and geographic variability in the distribution and abundance of seabirds, including several species that were injured by the oil spill. It also will be useful to the restoration program by providing data on the year-round status of seabird populations and the processes that influence variability in their numbers.

00306-CLO	Ecology and Demographics of Pacific Sand Lance in Lower Cook Inlet	J. Piatt/USGS-BRD	DOI	Cont'd 4th yr. 4 yr. project	$20.0	$20.0	$20.0

This project will characterize the basic ecology, distribution, and demographics of sand lance in the Gulf of Alaska. Recent declines of upper trophic level species in the Northern Gulf of Alaska have been linked to decreasing availability of forage fishes. Sand lance is the most important forage fish in most nearshore areas of the northern gulf. Despite its importance to commercial fish, seabirds, and marine mammals, little is known or published on the basic biology of this key prey species. In FY 00, the project will focus on finishing reports and submitting publications to peer-reviewed journals.

00327	Pigeon Guillemot Restoration Research at the Alaska SeaLife Center	D. Roby/Oregon State Univ.	DOI	Cont'd 3rd yr. 4 yr. project	$167.7	$179.0	$272.6

This project tests the feasibility of restoration techniques for pigeon guillemots (e.g., installation of artificial nest sites, use of social attractants, captive propagation and release). It also includes controlled experiments crucial to two other restoration objectives (1) development of nondestructive biomarkers of petroleum hydrocarbon contamination in seabirds, and (2) understanding how dietary factors (prey species composition, prey size, lipid content, feeding frequency) constrain growth, development, and condition at fledging in guillemots and other fish-eating seabirds.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00338	Survival of Adult Murres and Kittiwakes in Relation to Forage Fish Abundance	J. Piatt/USGS-BRD	DOI	Cont'd 3rd yr. 3 yr. project	$45.0	$59.7	$106.1

Some seabird populations damaged by the oil spill continue to decline or are not recovering. In order to understand the ultimate cause of seabird population fluctuations, productivity, recruitment, and adult survival must be measured. Current studies in Project /163 (APEX) are focused on measuring productivity only. Recruitment measurement demands an unrealistic study duration. This project will augment current studies in lower Cook Inlet that relate breeding success and foraging effort to fluctuations in forage fish density by using banding and resighting to quantify the survival of adult common murres and black-legged kittiwakes.

00347-CLO	Fatty Acid Profile and Lipid Class Analysis for Estimating Diet Composition and Quality at Different Trophic Levels	R. Heintz/NOAA	NOAA	Cont'd 3rd yr. 3 yr. project	$35.8	$44.7	$44.7

This is the close-out for the project which began the systematic development of fatty acid profiles and lipid class analysis to identify diet differences and quality in forage fish and their prey. Specifically, the spatial and temporal variability of fatty acid profiles in herring, sand lance, and zooplankton was examined and related to the nutritional condition of these forage fish. In FY 98, the spatial comparisons, which provided insight into the energetic differences in forage fish in disparate parts of Prince William Sound, were conducted. In FY 99, temporal comparisons which will provide information on the energetic changes that inevitably occur with seasonal, ontogenetic, and reproductive changes will be conducted. All these comparisons are based on samples collected by APEX (Project /163) investigators. In FY 00, closeout will entail a statistical analysis and report on the spatial, temporal, and ontogenetic variation of data.

00433	Effects of Forage Fish School Density and Species Composition on Foraging Patterns of Sea Birds: A Synthesis Product	E. Brown, B. Norcross/UAF	ADFG	New 1st yr. 2 yr. project		$59.7	$86.0

This project will improve understanding of finer scale foraging processes. Using existing digital imagery and underwater photography, the project will examine how school spacing, density, and species composition of forage fish in shallow regions and surface waters affect the foraging pattern of seabirds (mainly kittiwakes). Multivariate statistics will be used to detect significant differences. A determination will be made as to whether there is a species preference and thresholds of fish abundance for commencement of observed foraging will be estimated. Area specific trends will be compared to bird diet data for coherence in observations by other APEX (Project /163) researchers.

00453	Monitoring Recovery of Injured Species Following Removal of Introduced Foxes	V. Byrd/USFWS	DOI	New 1st yr. 2 yr. project		$47.4	$57.4

Introduced arctic foxes were removed from Simeonof and Chernabura islands in the outer Shumagin Island group in 1994 and 1995 (projects 94041, 95041, 96101) to restore populations of black oystercatchers and pigeon guillemots, two species of birds injured by the oil spill. Oystercatcher and guillemot populations were much lower on Simeonof and Chernabura than on nearby fox-free islands in 1995, but they are expected to recover to historic levels following fox removal. This project will resurvey populations of oystercatchers and guillemots at Simeonof and Chernabura and at nearby reference sites in FY 00, five years after fox removal, to determine whether restoration is underway.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00479	Effects of Food Stress on Survival and Reproductive Performance of Seabirds	J. Piatt/USGS-BRD, A. Kitaysky/Univ. of Washington	DOI	Cont'd 2nd yr. 4 yr. project	$125.2	$125.2	$329.8
	Traditional field methods of assessing effects of fluctuations in food supply on the survival and reproductive performance of seabirds may give equivocal results. This project will apply an additional tool: The measure of stress hormones in free-ranging seabirds. Food stress can be quantified by measuring base levels of stress hormones such as corticosterone in the blood of seabirds, or the rise in blood levels of corticosterone in response to a standardized stressor: capture, handling and restraint. These techniques will be applied to seabirds breeding in lower Cook Inlet and captive birds will be used for controlled experiments. This project provides a unique opportunity for a concurrent field and captive study of stress in seabirds.						
00501	Protocols for Long-Term Monitoring of Seabird Ecology in the Gulf of Alaska	J. Piatt/USGS-BRD, G. Byrd, D. Roseneau/USFWS	DOI	New 1st yr. 2 yr. project		$69.4	$91.4
	Seabird populations will need to be monitored for many years to assess both recovery and ecological conditions affecting recovery. Detailed studies of individual seabird colonies and marine ecosystems in the Gulf of Alaska have been conducted by the U.S. Geological Survey and U.S. Fish and Wildlife Service under the auspices of damage assessment and restoration programs of the Trustee Council. Much has been learned about factors influencing seabird populations and their capacity to recover from the spill in the Gulf of Alaska. As the restoration program moves toward long-term monitoring of populations, however, protocols and long-term monitoring strategies that focus on key parameters of interest and that are inexpensive, practical and applicable over a large geographic area, need to be developed.						
00516-BAA	Publication: Comparative Habitat Use by Kittlitz's and Marbled Murrelets	B. Day/ABR, Inc.	NOAA	New 1st yr. 1 yr. project		$21.0	$21.0
	This project will analyze an existing data set and publish a paper on the comparative at-sea habitat use by Kittlitz's and marbled murrelets. Both species were classified as injured by the oil spill. At this time, nothing is known about at-sea ecological segregation and overlap in habitat use. An existing data set for both species will be ideal for examining these issues.						
00529	Comparison of PAH Toxicity and Immune Function in Oil-Exposed Birds: Development of a Non-Lethal Biomarker	M. Wolfe/Univ. of California Davis	DOI	New 1st yr. 3 yr. project		$101.7	$205.8
	This project will continue the development of non-lethal markers of petroleum exposure and toxicity, in order to improve the survival of rehabilitated oiled birds, to aid in risk assessment, and to increase the understanding of oil toxicity in birds. Immune function in birds exposed to weathered oil will be measured. Both investigations will first be conducted in captive birds in facilities at the University of California Davis. Findings will then be applied to wild-caught birds from affected and unaffected sites in Prince William Sound.						

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00557-BAA	Over-Winter Foraging Ecology of Injured Marine Piscivores in Prince William Sound: The Effects of Winter-Food Limitation on Recovery	D. Scheel and G. Thomas/PWSSC	NOAA	New 1st yr. 2 yr. project		$212.6	$422.1

This project will collect data during the winter in Prince William Sound, where fish surveys over the past six years have found harbor seals, killer whales, common murres and several other injured piscivores feeding on aggregations of forage fishes. The forage fishes, Pacific herring and walleye pollock, have been found in just a few locations as large, discrete and segregated schools so the injured piscivores have a choice of forage. The project will make synoptic observations of walleye pollock, Pacific herring, harbor seals, killer whales and common murres along with other injured species to evaluate overwinter feeding preference and success. These data will be used to address hypotheses about food limitation on the recovery of injured species during the season most critical period to survival, the winter.

00559	Long-Term Monitoring and Research: Evaluation of Study Methodology for Surveys to Monitor Marine Bird Abundance in Prince William Sound	B. Lance, D. Irons/USFWS, L. McDonald/West, Inc.	DOI	New 1st yr. 2 yr. project		$54.6	$99.6

This project will evaluate the current study design and analytical methods for Project 00159, with the objective of transition into a long-term monitoring program. Six previous surveys have monitored population trends for more than 65 bird and eight marine mammal species in Prince William Sound. This project will use computer simulations of different sampling strategies using data collected from previous surveys (1989-98) to determine the optimal study design in regard to number of transects, transect length, habitat type, and stratification. Additional data collected in 2000 will be used to continue to examine trends from 1989 through 2000 with the goal of increasing the efficiency and precision of population estimates.

Archaeological Resources

00007A-CLO	Archaeological Index Site Monitoring	D. Reger/ADNR	ADNR	Cont'd 6th yr. 6 yr. project		$90.2	$90.2

Monitoring of archaeological sites on public land injured by vandalism and oiling concentrated on a sample of index sites in the three regions of the spill area. Oiled sites were tested for re-introduced oil. This closeout of the archaeological index site monitoring project will provide a final report of findings and conclusions for the life of the project. It will also see placement of artifact collections and documentation in appropriate repositories.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
Subsistence							
00052	Community Involvement/Traditional Ecological Knowledge	P. Brown- Schwalenberg/CRRC	ADFG	Cont'd 6th yr. 8 yr. project	$180.0	$219.4	$658.2

In FY 00, the Spill Area-Wide Coordinator will continue to actively involve residents of Tatitlek, Chenega Bay, Port Graham, Nanwalek, Cordova/Eyak, Seward, Seldovia, Valdez, Ouzinkie, and Chignik Lake in the restoration program through direct communication with a network of local facilitators. In addition, the project will initiate the process of integrating the duties of the local facilitators into the Tribal Natural Resource Management Program. The Chugach Regional Resources Commission will work with five pilot communities (Eyak, Tatitlek, Ouzinkie, Port Graham, and Nanwalek) to initiate a stewardship program that will assist in the recovery of injured resources and services. This will be accomplished through (1) a workshop with presenters from around the state and nation regarding similar programs, (2) initiation of a Science Committee to work with local Natural Resource Specialists to create monitoring programs, and (3) a plan to institute a Natural Resource Program in each pilot community to complement the Trustee Council's mission and foster stewardship of injured resources, services, and land.

00127	Tatitlek Coho Salmon Release	G. Kompkoff/Tatitlek IRA Council	ADFG	Cont'd 6th yr. 5 yr. project	$0.0	$11.4	$11.4

This project will create a coho salmon return to Boulder Bay near Tatitlek village. Enough coho eggs to produce 50,000 smolt will be collected from an Alaska Department of Fish and Game 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. FY 00 funding will extend the project for an additional year beyond the originally scheduled termination date.

00210	Youth Area Watch	R. Sampson/Chugach School District	ADFG	Cont'd 5th yr. 7 yr. project	$123.1	$122.0	$325.3

This project links students in the oil spill impacted area with research and monitoring projects funded by the Trustee Council. The project involves students in the restoration process and provides these individuals the skills to participate in restoration now and in the future. Youth conduct research identified and delegated by principal investigators who have indicated interest in working with students. Youth Area Watch fosters long-term commitment to the goals set out in the restoration plan and is a positive community investment in that process. Participating communities in FY 00 will be Tatitlek, Chenega Bay, Cordova, Nanwalek, Port Graham, Seldovia, Seward, Valdez, Whittier and a remote site within the Chugach School District.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00222	Chenega Bay Dump Rehabilitation and Salmon Habitat Enhancement (Stream 667 Fish Pass)	R. Spangler /USFS	USFS	New 1st yr. 3 yr. project		$78.4	$78.4

This project seeks to help the recovery of subsistence in Chenega Bay by rehabilitating the village solid waste dump and installing a fish pass in Stream 667. This creek flows through the community dump of Chenega Bay causing water quality problems. The stream is inaccessible to salmon because of a waterfall just above the upper intertidal zone. By diverting the stream away from the dump and installing a fish pass at the waterfall, chum and coho salmon will have access to spawning and rearing habitats in the creek and the number of salmon available for subsistence use will increase.

00225	Port Graham Pink Salmon Subsistence Project	E. Anahonak/Port Graham IRA Council	ADFG	Cont'd 5th yr. 5 yr. project	$75.0	$75.0	$75.0

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, the more traditional salmon subsistence resources, are at low levels, pink salmon are being 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. Two strategies are being employed: increasing fisheries management surveillance to maximize use of the adult pink salmon return and increasing marine survival of hatchery produced pink salmon.

00245	Community-Based Harbor Seal Management and Biological Sampling	V. Vanek/ADFG, M. Riedel/Alaska Harbor Seal Commission	ADFG	Cont'd 2nd yr. 4 yr. project	$55.0	$56.5	$121.5

This project continues, at a reduced level, work supported through previous harbor seal restoration projects (/244 and /245). A biological sample collection program in Prince William Sound, lower Cook Inlet, and Kodiak Island will continue. A training initiative will take place in a Chignik area community (Alaska Peninsula). Village-based technicians are selected by the Alaska Native Harbor Seal Commission and trained by the Alaska Department of Fish and Game to collect samples. The samples are transported to Anchorage or Kodiak for further sampling and distribution to participating scientists for analysis. The Alaska Native Harbor Seal Commission will produce and distribute a newsletter with summaries of the biological sampling program.

00247	Kametolook River Coho Salmon Subsistence Project	J. McCullough, L. Scarbrough/ADFG	ADFG	Cont'd 4th yr. 6 yr. project	$20.0	$23.2	$76.7

Subsistence users from the Alaska Peninsula Native Village of Perryville have noted significant declines in the coho salmon run in the nearby Kametolook River since the oil spill. Criminal settlement funds were used in FY 96 to determine what method would best restore the river's coho salmon stock to historic levels. This project will provide funding through FY 02 for the Alaska Department of Fish and Game to try conservative and safe restoration methods. Instream incubation boxes have been evaluated and selected as the primary restoration tool, in conjunction with self-imposed harvest limits by subsistence users, to rebuild the depressed coho salmon stock needed for subsistence in the Kametolook River.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00256B	Sockeye Salmon Stocking at Solf Lake	D. Gillikin/USFS, P. Shields/ADFG	USFS	Cont'd 5th yr. 7 yr. project		$54.5	$152.5

This project will benefit subsistence users of western Prince William Sound. There are two phases to the project: Phase 1, which began in FY 96, verified the ability of Solf Lake to support a sustainable population of sockeye salmon. Phase 2 included stocking the lake with approximately 100,000 sockeye salmon fry, then ensuring access to the lake for returning adult salmon. In addition to the ongoing stocking and monitoring efforts, in FY 00 the project will remove the barriers to fish passage on the eastern channel. Although final methodologies will not be determined until August 1999, three minor barriers are expected to be removed through the creation of plunge pools, steep passes, or further modification to control water flow through the outlet channel. These modifications will ensure that adult fish can return to the lake to spawn.

00263	Assessment, Protection and Enhancement of Salmon Streams in Lower Cook Inlet	W. Meganack, Jr./Port Graham Corporation	ADFG	Cont'd 4th yr. 4 yr. project	$23.5	$23.4	$23.4

This project will replace lost subsistence services by constructing enhancement projects on two of the major salmon streams in the lower Cook Inlet spill area. In FY 98, two projects were constructed: a fish pass on the Port Graham River and rearing ponds for coho salmon on Windy Creek Left. In FY 99, vegetation is being planted around the rearing ponds. In FY 99 and FY 00, the success of the two projects will be monitored by surveying use by anadromous fish. Local subsistence users are being employed as technical assistants during construction and monitoring.

00273	Scoter Life History and Ecology: Linking Satellite Technology with Traditional Knowledge to Conserve the Resource	D. Rosenberg/ADFG	ADFG	Cont'd 3rd yr. 3 yr. project		$206.1	$206.1

This project will study the life history and ecology of surf scoters that over-winter in or migrate through Prince William Sound and lower Cook Inlet. This information will be integrated with traditional ecological knowledge. Scoter populations in Alaska are declining. Communities in Prince William Sound and lower Cook Inlet harvest scoters for subsistence purposes. Scoters are among the least studied of North American waterfowl and little is known of their life history, ecology, and distribution. Scoters will be marked with surgically implanted satellite transmitters to define the breeding areas, molting areas, and wintering areas. Local participation will be solicited and information will be conveyed to local residents. Participation of local students will be encouraged through the Chugach School District and Youth Area Watch programs.

00333	Sea Otter Monitoring	B. Henrichs/Native Village of Eyak	DOI	New 1st yr. 3 yr. project		$269.4	$869.4

The sea otters in Orca Inlet have been dying and washing up on the beaches in the past few years. This is something new. This project will conduct monitoring to find out what is causing this. [NOTE: This proposal was submitted as an idea; if recommended for funding, a Detailed Project Description and detailed budget will need to be prepared.]

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00372	Stellar Sea Lion Monitoring	B. Henrichs/Native Village of Eyak	DOI	New 1st yr. 3 yr. project		$281.0	$883.9

Stellar sea lions are on the decline and have been placed on the endangered list by the National Marine Fisheries Service. If this trend continues, subsistence fishing for salmon, herring and other marine life will be curtailed. Some traditional areas may be closed to all fishing and hunting. This project will monitor the interaction between the Stellar sea lions and the fishing fleets. [NOTE: This proposal was submitted as an idea; if recommended for funding, a Detailed Project Description and detailed budget will need to be prepared.]

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00401	Assessment of Spot Shrimp Abundance in Prince William Sound	C. Hughey/ Valdez Native Tribe, C. O'Clair/ NOAA	NOAA	Cont'd 2nd yr. 4 yr. project	$89.8	$90.8	$218.8

This project will estimate the abundance of spot shrimp and determine the structure of the spot shrimp population in western Prince William Sound. The project will augment current Alaska Department of Fish and Game surveys to determine whether the spot shrimp population is recovering from depletion. To maintain consistency with the timing of Alaska Department of Fish and Game surveys, the first full sampling cruise will take place in October 1999. In year one, western Prince William Sound will be surveyed for study sites. In years two and three, spot shrimp relative abundance, population structure and reproductive potential will be estimated at the study sites. An added objective in year three will be an estimate of recruitment potential achieved by expanding the depth range of the sampling into shallow water to assess the relative abundance of juveniles. Year four will be closeout, production of manuscripts, and providing input into the development of a shrimp management plan with the Alaska Department of Fish and Game.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00416	O'Brien Creek Restoration	R. Spangler/USFS	USFS	New 1st yr. 3 yr. project		$27.2	$27.2

This project will help the recovery of subsistence in Chenega Bay by restoring the water flow to O'Brien Creek. The 1964 earthquake resulted in out-wash deposits that caused the stream to become subterranean at low flow levels. This project will examine the feasibility of restoring the channel so that salmon have access to the stream and will also identify opportunities to improve rearing habitat.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00444	Community-Based, Long-Term Population Monitoring of Harbor Seals	M. Riedel/Alaska Native Harbor Seal Commission, B. Kelly/UAS	ADFG	New 1st yr. 2 yr. project		$106.4	$206.2

This project will combine the expertise of Alaska Native hunters, University researchers, and Alaska Department of Fish and Game researchers in developing a long-term population monitoring protocol for a harbor seal colony that once was the largest in the spill area. A new method of monitoring population size and vital parameters of harbor seals in the spill area will be developed. Photographic identification of individuals, based on unique coat patterns, will be used to generate mark-recapture population estimates for harbor seals at Tugidak Island. Productivity and juvenile survival rates also will be estimated based on re-sightings of a large sample of known individuals.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00449	Documentary Film on Clams, Paralytic Shellfish Poisoning, and Subsistence	P. Panamarioff/Ouzinkie Tribal Council	ADEC	New 1st yr. 1 yr. project		$85.0	$85.0

This project will produce a 20 to 30 minute film on clams, paralytic shellfish poisoning, and subsistence concerns, including round table discussions with elders. Subsistence resources that have been a staple to Alaska Natives for many generations were injured by the oil spill. These resources need to be recorded, documented and monitored by Alaska Natives in the future and for the future. The safety concerns about the resources contaminated by the spill are still a reality. This project will provide Alaska Natives with the opportunity to be a part of the recovery and healing process.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00481	Documentary Film on the Subsistence Use of Intertidal Resources in Prince William Sound	G. Evanoff/Chenega Bay IRA Council	ADFG	New 1st yr. 1 yr. project		$93.1	$93.1

This project will produce a 28 minute documentary film on the subsistence use of intertidal resources in Prince William Sound, including mussels, clams, chitons, and octopus. In the harbor seal documentary (Project 96214) Tatitlek residents discussed their view of the relationship between the oil spill, Pacific herring populations, harbor seal populations and their ability to continue subsistence activities. In the nearshore documentary (Project 98274), Tatitlek residents expanded on the discussion by documenting their use of herring and nearshore resources, including the ecological and biological knowledge people use to harvest those resources. This project will build on the previous documentaries, focusing on the use of resources in the intertidal, the area hardest hit by oil, and broaden the discussion by bringing in the perspective of the residents of Chenega Bay, the first community directly in the path of the spilled oil.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00482-BAA	Development and Field Testing Rapid Diagnostic Test Kits for Paralytic Shellfish Poisoning and Amnesic Shellfish Poisoning	J. Jellett/Jellett Biotek Limited	NOAA	New 1st yr. 3 yr. project		$193.3	$278.9

This project will develop and test rapid screening tests to detect two marine biotoxins that affect the Alaskan shellfishery, amnesic shellfish poisoning (ASP) and paralytic shellfish poisoning (PSP). These toxins can cause sickness and even death in individuals who consume contaminated shellfish. With a reliable field testing method, coastal communities and shellfisheries will be able to ensure shellfish is safe to eat before harvesting. This will lead to safer subsistence harvesting of shellfish, which can replace the lost or decreased availability of injured resources such as harbor seals, sea lions, herring and ducks. The project will also assess the feasibility of establishing ongoing beach monitoring.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00503	Orca Inlet Restoration Planning	B. Henrichs/Native Village of Eyak	DOI	New 1st yr. 3 yr. project		$230.7	$727.2

Orca Inlet has become barren over the years. While it used to supply many of the subsistence resources to the residents of Eyak/Cordova, in recent years it has supplied very little. As a result of the processors dumping their fish waste and the earthquake, the Inlet is dying. This project will develop a plan to restore Orca Inlet to what it was when we were children. [NOTE: This proposal was submitted as an idea; if recommended for funding, a Detailed Project Description and detailed budget will need to be prepared.]

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00507	Nuchek Subsistence Camp	B. Henrichs/Native Village of Eyak	DOI	New 1st yr. 1 yr. project		$89.6	$89.6

As a result of the oil spill, the availability of subsistence foods has changed. The residents of the oil spill area are spending more time gathering traditional subsistence foods. A subsistence camp at Nuchek would allow the youth and elders to address these changes. Many of the people in the region trace their ancestry back to Nuchek. As Chugach Alaska Corporation has built a facility at Nuchek and holds annual spirit camps, this would be an appropriate location for the subsistence camp. [NOTE: This proposal was submitted as an idea; if recommended for funding, a Detailed Project Description and detailed budget will need to be prepared.]

00508	Copper River Salmon Run Data Infrastructure	B. Henrichs/Native Village of Eyak	ADFG	New 1st yr. 3 yr. project		$548.3	$3867.1

This project will protect and enhance the salmon runs on the Copper River to replace the lost subsistence resources in Prince William Sound. The project will install modern automated run monitoring and data collection equipment on all significant Copper River tributaries and will develop a baseline data index to existing data systems over a five year period (a test year with a three-year full data set over a full run cycle). The Copper River fishery is at risk because of a shift in resource use patterns. Harvest of salmon on or near spawning tributaries is increasing rapidly. This project will provide salmon count data systems on the Copper River that can distinguish between species, provide genetic separation, monitor tributaries and transmit data in real time.

00610	Kodiak Island Youth Area Watch	P. Brown-Schwalenberg/CRRC	ADFG	New 1st yr. 3 yr. project		$101.5	$304.5

In FY 99, Chugach Regional Resources Commission collaborated with the Kodiak Island Borough School District to institute an internship program within the Community Involvement Project (/052A), involving one student from each of the following communities: Akhiok, Larsen Bay, Old Harbor, Port Lions, Kodiak and Karluk. This project will expand the involvement and objectives of the internship program by collaborating with four research projects on Kodiak Island: ongoing Project 00245, Harbor Seal Biosampling; proposed Project 00482, PSP Field Testing Kit; a yet-to-be identified project with the Fisheries Industrial Technical Center; and an algae testing project with Dr. Gerry Plumley, University of Alaska Fairbnaks, to find the origin of PSP funded by the Alaska Science and Technology Foundation.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
Reduction of Marine Pollution							
00514	Lower Cook Inlet Waste Management Plan	M. See/ADEC	ADEC	Cont'd 2nd yr. 3 yr. project		$600.0	$800.0
This project will address pollutants reaching the marine environment in proximity to the communities of Seldovia, Nanwalek, and Port Graham through implementation of recommendations developed in the Lower Cook Inlet Waste Management Plan, currently in preparation. Following the model of the Sound Waste Management Plan and the Kodiak Waste Management Plan, this project is designed to address marine pollution from land-based sources and identify methods to help restore vital injured resources in these coastal communities. [NOTE: Funding for this project would come from outside of the regular FY 00 work plan of research, monitoring, and general restoration projects.]							
00615	Prince William Sound/Kodiak/Lower Cook Inlet Waste Management Community Awareness Video and Community Waste Management Resource Guide	K. Merrell/PWSEDC, K. Hartwell/Wild North Productions	ADEC	New 1st yr. 1 yr. project		$55.9	$55.9
This project will develop a community awareness video and printed waste handling guide to facilitate implementation of the Prince William Sound (Project /115), Kodiak Island Borough (Project /304), and Lower Cook Inlet (Project /514) waste management plans. The need for a community pollution program that educates villagers on proper handling of waste materials and promotes use of new EnVironmental Operations Stations is a logical extension of the Prince William Sound/Kodiak/Lower Cook Inlet waste management plans funded, in part, by the Trustee Council.							
00616	Sound Waste Management Plan: Boat Harbor Sewage System Phase	S. Cogswell/PWSEDC	ADEC	New 1st yr. 1 yr. project		$438.0	$438.0
Providing communities the capacity to manage and control pollutants will protect Prince William Sound species and will aid the recovering species affected by the oil spill. Boat harbor pump-out systems will provide seasonal safe sewage management for marine vessels. The systems can be easily activated in winter in case of a natural or man-made emergency. This system will protect the commercial shellfish operations around the sound, as well as the other fish and marine mammal populations recovering from the oil spill. [NOTE: Funding for this project would come from outside of the regular FY 00 work plan of research, monitoring, and general restoration projects.]							

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
Habitat Improvement							
00180-CLO	Kenai Habitat Restoration and Recreation Enhancement	M. Rutherford/ADNR	ADNR	Cont'd 5th yr. 5 yr. project		$19.1	$19.1

This project will fund final report writing for Project /180. 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 oil spill. The project's objectives were 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. Restoration/enhancement techniques included revegetation, streambank restoration, elevated boardwalks, floating docks, access stairs, fencing, signs, and educational interpretive displays.

00339	Publication: Western Prince William Sound Human Use and Wildlife Disturbance Model	K. Murphy, L. Suring/USFS	USFS	Cont'd 3rd yr. 2 yr. project	$0.0	$22.4	$22.4

This project will support preparation of manuscripts for publication in professional journals. One manuscript will describe the use of geographic information system (GIS) techniques to describe current human-use patterns in western Prince William Sound and to model potential changes in those use patterrns as a result of additional development. A second manuscript will document use of the GIS generated maps of present and projected human-use patterns and their incorporation with GIS maps of the distribution of resources injured as a result of the oil spill. The manuscripts and the resulting process to develop management recommendations should be useful to land managers in their land management planning efforts.

00399	Eastern Prince William Sound Human Use and Wildlife Disturbance Model	K. Murphy, L. Suring/USFS	USFS	New 1st yr. 3 yr. project		$179.1	$319.1

This project is an expansion of the human use and wildlife disturbance model developed for western Prince William Sound (Project /339). The project will use geographic information system (GIS) techniques to describe current human-use patterns in eastern Prince William Sound and to model potential changes in those use patterns as a result of additional development. Maps of present and projected human-use patterns will be incorporated with maps of the distribution of injured resources. This will provide a basis to identify areas where there may be conflicts between human use and wildlife concentrations resulting in disturbance. Disturbance of injured wildlife may result in decreased productivity, exacerbating the effects of the oil spill and prolonging the time to recovery. Identification of potential areas of disturbance will allow development of recommended management practices that may eliminate or minimize the negative effects of increasing human use. All injured resources and subsistence species will be addressed in a general approach but specific management recommendations will be developed for harbor seal, pigeon guillemot and cutthroat trout.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00473	Public Information Brochure on Lands Acquired by the Trustee Council from Chenega Corporation	C. Totemoff/Chenega Corp.	USFS	New 1st yr. 1 yr. project			

This project will assist the Chenega Corporation in providing the public with maps and information on the rights and restrictions that have resulted from the acquisition of Chenega Corporation lands by the Trustee Council. Lands and easements acquired by the Council and now managed by the state and federal governments are available to the public for use for recreation, hunting and fishing. With this access comes the need for the public to know where and what they can do on these lands. The information will be in the form of a brochure that is available from the corporation and management agencies, primarily the Alaska Department of Natural Resources and the U.S. Forest Service. [NOTE: This proposal was submitted as an idea; if recommended for funding, a detailed project description and detailed budget will need to be prepared.]

00563	Kenai River Streambank Habitat Utilization Study	B. Hauser/ADFG	ADFG	New 1st yr. 2 yr. project		$74.7	$109.7

The Alaska Department of Fish and Game has received state and federal funding, EVOS criminal settlement funds, and Trustee Council funds to implement streambank restoration activities and acquire key habitats on the Kenai River. Streambank rehabilitation has been accomplished with a new approach called soil bioengineering which uses coir (coconut) fabrics and rolls, live and dead vegetation, seedlings, and other measures to stabilize streambanks and provide cover for fish. This project will compare how bioengineered streambank projects function compared to natural and disturbed sites in terms of providing habitat for fish. The results will document and evaluate habitat variables and fish use of restoration projects with the intent of evaluating and improving installation methodologies.

Ecosystem Synthesis

00278	Development of an Ecological Characterization and Site Profile for Kachemak Bay/Lower Cook Inlet	G. Seaman/ADFG	ADFG	Cont'd 2nd yr. 2 yr. project	$35.0	$52.4	$52.4

This project will develop an ecological characterization and site profile to collect, synthesize, analyze, and document available physical, biological, and human or socioeconomic information on the Kachemak Bay/lower Cook Inlet area. The project will result in the development of a database management system with products produced in electronic format and on paper. Project components include (1) an ecosystem narrative description, (2) a spatial data component using a Geographic Information System (GIS), and (3) an annotated bibliography and research summary/tracking system. Trustee Council funds will focus on the spatial data component and annotated bibliography. The products will be used to (1) improve accessibility of ecological information to the public, researchers, and managers, (2) assist in the use and protection of land, (3) plan for a possible long-term ecological monitoring and research program in the Northern Gulf of Alaska, and (4) assist in agency management and planning for the lower Cook Inlet area.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00330	Mass-Balance Model of Trophic Fluxes in Prince William Sound	D. Pauly/UBC	NOAA	Cont'd 3rd yr. 2 yr. project	$0.0	$29.7	$29.7

This project will provide an additional year of funding for Project /330, under which a food-web model of Prince William Sound was constructed and initially disseminated. The food web model forms the core of a prototype CD ROM, which also includes food web models from three other aquatic ecosystems of Alaska, user-friendly databases on the biology and local/traditional knowledge of the marine organisms of Prince William Sound, and links to related information and resource agencies. In FY 00, this project will (1) produce a final version of the CD ROM and distribute it to resource managers, schools, communities, and the general public, (2) provide hands-on guidance and education on food web based management approaches to resource managers and other potential users, and (3) publish several articles in peer-reviewed scientific journals.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00340	Toward Long-Term Oceanographic Monitoring of the Gulf of Alaska Ecosystem	T. Weingartner/UAF	ADFG	Cont'd 3rd yr. 4 yr. project	$57.5	$69.4	$141.4

Interannual variations in the temperature and salinity of Gulf of Alaska shelf waters could significantly influence this ecosystem and, therefore, the recovery and restoration of organisms and services affected by the oil spill. This variability is best quantified from long time series such as that gathered over 28 years at a hydrographic station (GAK1) near Seward. This project will continue this time series to quantify variability on this shelf. First year results suggest that sea level might be an effective monitor of upper ocean summer salinity. The temperature-salinity correlation structure suggests causative mechanisms that will be explored as part of this project. The data and the analyses will aid in designing a cost-effective monitoring program.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00360-BAA	The *Exxon Valdez* Oil Spill: Guidance for Future Research Activities	C. Elfring/Polar Research Board, NRC	NOAA	New 1st yr. 2 yr. project		$370.7	$502.2

The National Research Council's Polar Research Board and Board on Environmental Science and Toxicology will appoint a special committee to review the scope, content, and structure of the draft science plan the Trustee Council is preparing to guide long-term research and monitoring in the northern Gulf of Alaska. To provide context for reviewing the draft plan, the committee will become familiar with the overall program of damage assessment and restoration research and monitoring activities that has been sponsored by the Council. The Committee will prepare a final report with the conclusions and recommendations intended to give guidance on the nature and scope of future research and monitoring activities in the northern Gulf of Alaska

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00382	Information-Transfer Program for Managers	D. Gibbons/USFS	USFS	New 1st yr. 2 yr. project			

One audience that has not been the focus of the Trustee Council's communication efforts are the mid-level managers who make daily decisions in the management of injured resources and services. These individuals may be informed about restoration activities conducted by their own agencies, but unaware of information gathered by other agencies. This project will facilitate communication of the restoration program to managers through a number of different media tailored to particular audiences, including a workshop and through the internet. An interagency coordination group will evaluate the effectiveness of the workshop and home page to assure information is provided in a timely manner.

00391	Cook Inlet Information Management/Monitoring System	C. Fries/ADNR, J. Hock/ADEC	ADNR	Cont'd 2nd yr. 2 yr. project		$794.1	$794.1

The Cook Inlet Information Management/Monitoring System (CIIMMS) will provide a wide range of users the opportunity to share and access valuable information and data about the Cook Inlet watershed and Cook Inlet-related activitites. CIIMMS potential users include educators, scientists, students, researchers, resource managers, private organizations and individual citizens. CIIMMS will provide an interactive website for the Cook Inlet community to efficiently and effectively contribute, identify and access relevant information from a distributed network of providers.

00398	Archive and Enhanced World Wide Web Dissemination System	J. Braund-Allen, J. Michaelson/UAA	ADNR	New 1st yr. 2 yr. project		$170.0	$173.0

This project will develop the prototype of a comprehensive data and information management system to archive and disseminate all past, ongoing, and future data developed through the restoration program. Sample data will be selected, including research final reports, GIS spatial datasets, databases, maps and videos. These representative data types will be physically archived; integrated using ENRI's GIS, database mapping, graphic design, and library capabilities; and formatted as internet-ready products. Documentation will be written for each dataset. A graphic user interface will be designed to allow easy user access. These products will be assembled and posted on the worldwide web to show an example of how restoration data could be integrated and efficiently distributed.

00400-BAA	Metadata For The *Exxon Valdez* Restoration Archive	G. Brooks	NOAA	New 1st yr. 1 yr. project		$52.3	$52.3

This project will develop metadata for all existing Trustee Council sponsored research and restoration activity. Metadata content standards will also be established to ensure future compatibility with mandated federal metadata requirements enacted in response to Executive Order Number 12906, dated June 1994, and implemented through the Alaska Geospatial Data Clearinghouse in 1996. Metadata training and orientation sessions will be offered to the public. Project results will include a spatially referenced framework in which oil spill data will be more easily identified, queried, and used by the public.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00447	Information Gateway to Prince William Sound and the Gulf of Alaska	M. Shasby, W. Seitz/USGS	DOI	New 1st yr. 3 yr. project		$50.4	$450.4

This project will provide for the inclusion of all relevant environmental and spatial databases developed from the restoration program into a technologically advanced "Information Gateway to Prince William Sound and Gulf of Alaska". This activity will occur as one of the national prototype areas for a new Gateway to the Earth initiative within the U.S. Geological Survey. The Gateway targets the worldwide web for presentation of the proposed information system. The U.S. Geological Survey is combining the National Spatial Data Infrastructure and the National Biological Information Infrastructure under a new initiative known as Gateway to the Earth, which embodies data management, archiving, access, and decision support analysis tools for use by the entire information community. This project will ensure a long term commitment to the inclusion of the EVOS databases into the Gateway framework and the next generation of information superhighway technologies that will be evolving.

00455-BAA	An Evaluation of the Data System for the EVOS Long Term Monitoring Program	C. Falkenberg/Ecologic Corp.	NOAA	New 1st yr. 1 yr. project		$69.1	$69.1

This project will investigate the issues relating to the creation of the data delivery system needed by the Trustee Council's long-term monitoring and research program. In addition to the data collection effort, data delivery will prove to be a critical component of the success of the long-term program. Therefore, as the long term program is planned the data delivery issues need to be integrated into that process. This project will outline some of the key data and user issues and provide background research into existing systems that deliver similar data. In addition, a strawman proposal will be developed for a data system that could meet the needs of the long term monitoring effort.

00511	Synthesis and Transfer of Conservation Biology Information to Resource Managers and University Students	K. Boggs/UAA	ADFG	New 1st yr. 3 yr. project		$238.5	$602.9

This project will develop a state of the art data-system to track the health of species and ecosystems damaged by the oil spill, evaluate the recovery of each, and transfer the information to resource managers and university students. Only information specific to conservation biology--population numbers, processes, etc.--will be synthesized. This will entail integrating disparate data from multiple studies that often reached conflicting results. The health of each damaged resource will be evaluated using the data-system results. Thorough presentations that translate the concepts of conservation biology in relationship to the damaged resources will be developed.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00512	Laying the Groundwork for a Successful Long-Term Monitoring and Research Program	K. Oakley/USGS	DOI	New 1st yr. 3 yr. project		$196.9	$696.9

This project will apply the latest understanding of long-term program design to plan for the Trustee Council's long-term monitoring and research program. The characteristics and unique considerations that attend long-term programs will be presented via briefings, public meetings, and the Annual Restoration Workshop in January 2000. Existing and planned monitoring and research efforts in the spill area will be cataloged. A planning process, leading to a conceptual design document to guide the FY 03 Invitation, will be proposed. This relatively small investment in planning will help ensure a successful long-term program that avoids common planning problems and the specific problems that can be foreseen in the *Exxon Valdez* oil spill context.

00530	Lessons Learned: Evaluating Scientific Sampling of Oil Spill Effects	M. See/ADEC	ADEC	New 1st yr. 1 yr. project		$109.4	$109.4

In the ten years following the oil spill, a substantial amount of scientific research has been conducted on the impacts of the spill. Despite this wealth of information, there has been no comprehensive evaluation and compilation to determine which sampling methods and studies were or were not effective. This project will review scientific findings to assess which ones provided effective means of documenting environmental impacts. To ensure that the proposed approach will be effective, this project will be structured as a pilot.

00548	Internet-Based Digital Index of Research Publications Funded by the Trustee Council	D. Bohn/USGS-BRD	DOI	New 1st yr. 1 yr. project		$26.7	$26.7

This project will increase the usability of research literature that has been created for the restoration program by creating a digital, interactive bibliography. The final product will be posted on the Trustee Council's internet site. Users will be able to select a geographic region from an image map of the spill area to view a list of corresponding publications. Users will also be able to select topics, such as species, and view a list of pertinent publications. This effort could be considered one of the initial steps in packaging the volume of research findings and literature for easier accessibility by land managers, policy makers, interested scientists, resource users, and the private sector.

00567	Monitoring Environmental Contaminants in the Northern Gulf of Alaska	M. See/ADEC	ADEC	New 1st yr. 1 yr. project		$76.2	$76.2

This project will assess needs and priorities for monitoring environmental contaminants in the northern Gulf of Alaska, including the area directly affected by the oil spill. It will evaluate information on water quality, marine species' sensitivities to pollutants, and contaminants that pose potentially adverse effects to the ecosystem and to human health. Recommendations will specify priorities for monitoring of contaminants in order to track lingering oil spill injury, trends and potential effects of pollutants.

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
00568-BAA	Historic, Contemporary, and Near-Real-Time Meteorological Data: Open Access to the EVOS and OSRI Acquisitions	S. Bodnar/OSRI, V. Patrick/Univ. Maryland	NOAA	New 1st yr. 1 yr. project		$42.2	$42.2

This project will provide improved cost-efficiency for all Trustee Council restoration projects and contribute to the repository and distribution mission objectives of three major state and federal programs. The project is proposed in concert with three regional oversight and industry-support organizations. The primary objective is to make the existing and expanding meteorological data resources readily available to all stakeholders, including researchers.

Public Information/Science Mgt./Admin.

00414-BAA	Lessons from the *Exxon Valdez*: Using Interactive Information Displays to Engage the Public	J. Allen/PWSSC	NOAA	New 1st yr. 1 yr. project		$164.8	$164.8

This project will establish interactive multimedia displays for the general public at three locations in the spill area, including the Alaska SeaLife Center in Seward and the Prince William Sound Science Center in Cordova. The displays will present highlights from the restoration research program with emphasis on ecosystem synthesis, using an appealing, understandable and entertaining format. Content will be developed in collaboration with EVOS principal investigators and the overall product will be subject to review and approval by the Trustee Council's Restoration Office. In addition, this project will collaborate with the NOAA Auke Bay Lab to produce a 30-minute, graphically oriented computer presentation to be used for disseminating the lab's toxicity work to a wide audience.

00418	The 1899 Harriman Alaska Expedition Retraced: A Century of Change	L. Hott, T. Litwin/Smith College	ADFG	New 1st yr. 1 yr. project		$135.5	$135.5

This project will bring scientists, naturalists, and artists to the Alaskan coast to observe anew the sites visited by the Harriman Alaska Expedition of 1899. Florentine Films/Hott Productions is producing two one-hour films for broadcast, and an educational and outreach program that will bring together the dynamic elements of both the 1899 and modern expeditions. The viewer will be introduced to the coast affected by the spill, to the conflict between resource management and preservation, and to the restoration efforts of the Trustee Council.

INDEX OF PROPOSALS BY I OURCE CLUSTER -- FY 00

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY00 Expected	FY00 Request	Total Request FY00-02
Research Facilities							
00474	Endowment of the Environmental Restoration Center at the University of Alaska Anchorage	G. Baker, H. Schroeder, O. Smith/UAA	ADFG	New 1st yr. 1 yr. project		$2256.5	$2256.5

This project will create an endowed environmental restoration center for research and community education at the School of Engineering at the University of Alaska Anchorage. An endowed research chair will be created within the center. Establishing the center will provide a mechanism for continuing research, restoration, and community education long after 2002 when settlement funds are no longer received from Exxon. Such activities will help Alaska develop local expertise and permanent solutions for the protection and restoration of areas affected by the oil spill. Creation of the proposed endowed research chair will also serve as a prototype for creating other endowed chairs. [NOTE: Funding for this project would come from outside of the regular FY 00 work plan of research, monitoring, and general restoration projects.]

	All Proposals	Work Plan Only
Total Continuing Projects FY 00 Expected:	$20,365.3	$6,065.3
Total Continuing Projects FY 00 Request:	$22,573.6	$7,673.6
Total All Projects FY 00 Request:	$34,252.9	$16,658.4
Total All Projects FY 00-02:	$79,155.2	$34,160.7

NOTE: 137 projects were received (55 continuing and 82 new). The Work Plan Only column does not include projects 00100/Public Information/ Science Management/Administration, 00126/Habitat Protection Support, 00474/University Endowed Chair, 00514/Lower Cook Inlet Waste Management Plan, 00616/Sound Waste Management Plan Harbor Phase, and 00424/Restoration Reserve. The costs included for the following projects are estimates, as budgets have not yet been prepared: 00250/Project Management ($400.0), 00350/ASLC Bench Fees, ($500.0), 00126/Habitat Protection Support ($300.0), 00100/Administration/ Science Management/Public Information ($2,000.0), and 00424/Restoration Reserve ($12,000.0).

00007A

Archaeological Index Site Monitoring

Project Number:	00007A
Restoration Category:	Monitoring
Proposer:	ADNR- Office of History and Archaeology
Lead Trustee Agency:	ADNR
Cooperating Agencies:	DOI-FWS, DOI-NPS, USFS
Alaska SeaLife Center:	No
Duration:	Closeout, 6th year,10-year project
Cost FY 00:	$90.2
Cost FY 01:	$0
Geographic Area:	Prince Willam Sound, Kenai Peninsula, Kodiak Island
Injured Resource:	Archaeological Resources

ABSTRACT

Monitoring of archaeological sites on public land injured by vandalism and oiling concentrated on a sample of index sites in the three regions of the spill. Oiled sites were tested for re-introduced oil. This closeout of the archaeological index site monitoring program will provide a final report of findings and conclusions for the life of the project. It will also see placement of artifact collections and documentation in appropriate repositories.

INTRODUCTION

Damage to archaeological sites as a result of cleanup activities after the Exxon Valdez Oil Spill was amply documented in damage assessment studies performed since the spill. Damage from vandals continued to be documented at several sites on public lands during the past several seasons. Although damage from vandals at other sites has not been documented, vandals remained active in the region and their level of depredations needed to be monitored. Monitoring of damaged sites as a gauge of vandal activities in the spill area was identified as a primary strategy for site restoration during 1995 and was continued to provide a long term assessment of the problem. A consensus was reached among agency archaeologists and concurred with by the peer reviewer that the most efficient way to monitor vandalized sites was to select "index" damaged sites to provide an indication of the level of vandal activity in the spill area.

The archaeological peer reviewer for the Trustee Council recommended during the 1995 science workshop that monitoring continue at oiled sites to check for new movement of buried oil into site deposits. His concern was that subsurface oil would move into archaeological deposits and compromise possible data recovery. That recommendation continued to guide field work at several sites through the duration of the program.

Monitoring of archaeological sites injured by the spill or spill related activities targeted a small number of sites on public lands which were determined to represent those most vulnerable to looting or oiling. Those index sites served as a gauge for levels of vandalism in the spill area. Index sites oiled during the early time immediately after the spill in March 1989 were monitored during 1995, 1997, and were returned to during 1999. The current proposal aims at compiling the findings of the past damage assessments and seven years of site monitoring into a single coherent report. It includes write-up of findings from the prior fiscal year field season as has been the practice in past seasons.

NEED FOR THE PROJECT

A. Statement of Problem

Sites monitored under the project are index archaeological sites thought to be representative of archaeological sites on the public lands in the spill area which have been oiled or are being vandalized. Some sites were oiled during the spill and have been monitored to check for post-spill movement of subsurface oil into site deposits.

Vandalism during cleanup appeared to be associated with people placed near sites while living on chartered boats. Circumstantial evidence indicates that some crew members, many of whom are residents of coastal communities, were involved in looting of sites. Agency resource managers feared that looting associated with cleanup continued on and spread to

other sites of the area.

Oil was found in beach sediments at several of the sites selected as index localities although none was initially documented in site deposits. A goal of this project was to monitor those sites to detect movement of the persistent oil into cultural deposits from the surrounding sediments.

B. Rationale

Loss of sites to vandals and pollution of sites from remaining oil removes the ability of archaeologists to recover data about the prehistory from those sites. The number of sites in the area is finite and will not increase. Reasonable efforts must be made to protect the cultural heritage data base from degradation. Loss of sites in the area to erosion continues, making loss from vandal degradation more critical.

C. Location

The project has occurred in Prince William Sound, on the outer coast of the Kenai Peninsula, and in the Kodiak Island archipelago. Most sites are located in very remote areas.

COMMUNITY INVOLVEMENT

The sites monitored under this project are remote. Because of the remoteness, no direct community involvement has occurred. The closeout of the project will not involve significant local community involvement.

PROJECT DESIGN

A. Objectives

The overall intent of the archaeological site monitoring program has been to maintain a current assessment of the status of vandalized sites in the oil spill area and sites oiled during the spill. Knowledge of continuing and current site status is required to protect the sites from degradation. The objectives of the project have been:

1. Monitor vandalized sites to identify continuing vandal activity in order to protect the sites. Information about index sites will be projected for management planning to the larger inventory of sites in the spill area.
2. Monitor sites contaminated by oil during the Exxon Valdez Oil Spill to identify any encroachment of subsurface oil into the cultural deposits from surrounding sediments.

The intent of the project has been to maintain a presence at the vandalized sites for a long enough period of time to gauge levels of vandalism and discourage that activity by our

presence. The long range intent by FY2004 was to reduce that activity to zero. Because the incidence of vandalism has diminished at index sites, the need for further monitoring has also diminished.

B. Methods

A strategy was identified during the 1994 restoration workshop of designating index sites, vulnerable to looting, which were to be monitored bi-annually as a check over a broader area. A second group of sites were identified which were also to be monitored, but less frequently. The second group of sites provides a cross-check to monitoring data collected at the index sites. Focusing annual monitoring on 4 index sites and using a 2-year monitoring schedule on the additional 4 sites, expenditures could be significantly reduced while maintaining continuity of tracking vandalism over the years. Vulnerability to looting was the primary criteria of selection with managerial jurisdiction a secondary concern. Sites which were oiled were monitored for oil so that effect of oiling could be observed over the long term in archaeological deposits.

Documentation of site status at the localities monitored for vandalism included re-locating previously established reference points and referring all observations to those points. Field maps were drawn or surveyed as appropriate. Photo and video documentation was referenced to datum points and duplicated earlier perspectives as closely as possible. Test localities were mapped relative to site datum points.

Closeout of the index site monitoring project will include preparation of a final monitoring report which will compile findings, trends, site status, and conclusions about vandal activities into a single document. The final report will include compiling the findings from the various annual reports in a coherent, standard format, bound as a single unit. Status of each index site will be reviewed and summarized from the time the program first began until closeout. The closeout report will contain observations about the program, and recommendations for possible future spills. Also included in closeout will be transfer of support documentation to the appropriate archive for long term storage. Collections and supporting documentation will transferred to the appropriate repository or interim storage until the Prince William Sound repository is ready to receive materials. Working files and collections under study remain in the possession of various investigators and agencies pending wrap-up of the program.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

Cooperating agencies under this project are the DOI-U.S. Fish and Wildlife Service, DOI-National Park Service, and the USDA- Forest Service. Each of the federal agencies has management responsibilities for resources on lands assigned to them, including cultural resources. Each of those agencies has on staff qualified archaeologists who conducted archaeological activities on agency lands. The Alaska Department of Natural Resources is designated the lead agency only to coordinate all agency activities and compile the final

results. The National Park Service opted to not request funding for closeout. Each agency will oversee its own budget and submit its contribution to the final product..

No major contracts are anticipated by any agency for this project. Normal agency contracting procedures will be followed when contracting for radiocarbon dating or sediment analysis services. Radiocarbon dating will be done in commercial facilities, none of which exist within Alaska. Printing and binding of the final report will be done on a job basis in Anchorage at a commercial business.

SCHEDULE

A. Measurable Project Tasks for FY 00 (October 1, 1999 - June 1, 2000)

October 1, 1999 - December 31, 1999:	Complete requirements for NEPA requirements and prepare the report for FY 99 field activities.
February 1, 2000:	Complete draft of final report.
March 15, 2000:	Submit final report for peer and Chief Scientist review.
May 1, 2000 - June 1, 2000:	Finalize changes in final report for submission to OSPIC. Move documents and collections to appropriate repositories.

B. Project Milestones and Endpoints

This is the closeout for the archaeological index site monitoring program. The schedule listed for FY00 is applicable as the schedule for the project until complete. The endpoint will be a final report by June 1, 2000.

C. Completion Date

The archaeological index site monitoring was scheduled for completion in FY 2004. Apparent lessening of vandal activities and lack of movement of oil into index site sediments indicates stabilization of archaeological resource losses. Conclusion of the archaeological site index monitoring program will be accomplished by June 1, 2000.

PUBLICATIONS AND REPORTS

No formal publications are anticipated for this monitoring project. A final closeout report will be prepared.

PROFESSIONAL CONFERENCES

No professional conferences will be attended nor papers presented in respect to this monitoring project.

NORMAL AGENCY MANAGEMENT

Federal and state laws assign general responsibility for dealing with cultural resource matters to the various land managing agencies. None of the agencies cooperating in this monitoring project has ever funded a program of site monitoring or data collection at the sites identified in the project proposal. The data collected and conclusions reached have all been part of the archaeological site restoration process and will be reported by the investigators in the final report.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

This proposal is for closeout of the archaeological index site montoring and the final report will be part of the reporting procedure established for all restoration project reports.

EXPLANATION OF CHANGES IN CONTINUING PROJECTS

This proposal is for closeout of this project.

PROPOSED PRINCIPAL INVESTIGATOR

Douglas R. Reger
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Alaska Department of Natural Resources
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Douglas R. Reger
Archaeologist II
Office of History and Archaeology
Alaska Division of Parks and Outdoor Recreation
3601 C Street, Suite 1278
Anchorage, AK 99510-7001

1981 PhD.- Anthropology, Washington State University

PROFESSIONAL EXPERIENCE:

1964 -1967	Field/research/museum assistant, Univ. of Alaska, Fairbanks and Alaska Methodist University
1969	Short field surveys, Cordova and Katmai, AK
1970	Field School instructor, Alaska Methodist U., Tangle Lakes
1971	Salvage archaeologist, Alyeska Pipeline Project
1971-74	Teaching assistant, Washington State Univ.
1972	Assistant Highways archaeologist, Washington State Univ.
1973	Project Archaeologist, Homer Society for Natural History
1974-75	Regional Archaeologist, USDA Forest Service, Alaska Region
1975-82	Alaska State archaeologist, Alaska Division of Parks
1978-82	Deputy State Historic Preservation Officer, Alaska
1982-86	Archaeologist, Alaska Division of Geological and Geophysical Surveys
1986-	Archaeologist, Alaska Division of Parks and Outdoor Recreation

PUBLICATIONS/REPORTS:

1972	*An archaeological survey in the Utopia area, Alaska,* **Anthropological Papers of the University of Alaska**, 15(2), with R.D. Reger
1974	*Prehistory of the northern Kenai Peninsula,* In **Prehistory of the North American Subarctic: the Athapaskan Question**, edited by J.W. Helmer, S. VanDyke, and F.J. Kense, Univ. of Calgary, p. 16-21
1977	*An Eskimo Site near Kenai, Alaska,* **Anthropological Papers of the University of Alaska**, 18(2): 37-52
1983	*Norton: a changing southeastern boundary,* **Arctic Anthropology** 19(2): 93-99, with Joan B. Townsend
1987	*Archaeology of a late prehistoric subsistence locality, the Clam Gulch Site (49KEN-045),* **Anthropological Papers of the University of Alaska** 21:89-103
1992	Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations. Office of History and Archaeology Report No. 30. Alaska Division of Parks and Outdoor Recreation, with J. David McMahan and C. E. Holmes
1998	Archaeology of the northern Kenai Peninsula and upper Cook Inlet, **Arctic Anthropology** 35(1): 160-171

Terje (Ted) G. Birkedal
Chief, Division of Cultural Resources
Alaska Region, National Park Service
2525 Gambell Street
Anchorage, AK 99503

1968	B.A. - Anthropology, University of Colorado
1970	M.A. - University of Colorado
1976	PhD. - Anthropology, University of Colorado

Field Experience

1965--1992: Survey and excavation experience includes Western Slope of Rockies, Colorado; High Grass Plains, Colorado; Colorado Plateau Area of American Southwest; Delta Area of Louisiana; Southwestern Norway; Bella Bella Region of Canadian Northwest Coast; Guam(Micronesia); and various locations in national parks of Alaska. Includes both prehistoric and historical archaeological experience.

Professional Experience

1971-75	Instructor, Department of Anthropology, University of Guam
1976-82	Archaeologist and later Branch Chief, Branch of Indian Archaeological Assistance, Southwest Region, National Park Service, Santa Fe
1982-85	Chief, Branch of Archaeological Resource Management, Southwest Region, National Park Service, Santa Fe
1986-92	Regional Archaeologist, Alaska Region, National Park Service, Anchorage
1992-Present	Chief, Division of Cultural Resources, Alaska Region, National Park Service, Anchorage

(Majority of Federal career has been spent on the conduct, management, and administration of large archaeological projects.)

Professional Affiliations

Society for American Archaeology
Alaska Anthropological Association
National Trust for Historic Places
Sigma xi: Scientific Honorary Society

Debra G. Corbett
Archaeologist
U.S. Fish and Wildlife Service
1011 E. Tudor Road
Anchorage, AK 99503

1980 BA- Anthropology, University of Arizona
1992 MA- Anthropology, University of Alaska, Fairbanks

PROFESSIONAL EXPERIENCE

1980	Survey and project clearance, Bureau of Land Management, Idaho Falls District, Idaho
1981	Survey and project clearance, Bureau of Land Management, Salmon District, Idaho
1982	Survey and project clearance, Bureau of Land Management, Phoenix District, Arizona
1983	Excavation, La Ciudad village, Papago Freeway Project, Phoenix, Arizona
1983-89	ANCSA 14(1) investigations, Bureau of Indian Affairs, Anchorage, Alaska. Projects in the Aleutians, Yukon Delta and Kobuk River areas.
1991-Present	Survey and Project clearances, U.S. Fish and Wildlife Service, wildlife refuges throughout Alaska. Lead role in EVOS site monitoring and site stewardship programs.

Professional Affiliations: Alaska Anthropological Association

Linda Finn Yarborough
Archaeologist
Chugach National Forest
U.S.D.A. Forest Service
3301 C Street, Suite 300
Anchorage, AK 99503-3998

1973	B.A., Anthropology, State University of New York
1974	M.A., Anthropology, University of Toronto
Present	PhD. Program, Anthropology, University of Wisconsin, Madison

Field Experience

Archaeological survey, testing, and excavations throughout many regions of Alaska

Specialty interest areas: Pacific Rim prehistory, prehistory of Prince William Sound and southcentral Alaska, faunal analysis

Current Position

1992-Present Assistant Forest Archaeologist and Cooperative Education Student, Chugach National Forest, Anchorage, Alaska

Publications / Reports

Numerous papers, reports, and articles. List available

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1999	Proposed FY 2000	PROPOSED FY 2000 TRUSTEE AGENCIES TOTALS					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
Personnel	$0.0	$70.6						
Travel	$0.0	$1.8						
Contractual	$0.0	$4.9						
Commodities	$0.0	$2.0						
Equipment	$0.0	$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$0.0	$79.3			Estimated FY 2001	Estimated FY 2002		
General Administration	$0.0	$10.9						
Project Total	$0.0	$90.2			$0.0	$0.0		
Full-time Equivalents (FTE)	0.0	1.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources	$0.0	$0.0			$0.0	$0.0		

Comments: Project is Closeout for 95007A, 96007A, 97007A, 98007a, 99007A.

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Lead Agency: AK Department of Natural Resources

FORM 2A
MULTI-TRUSTEE
AGENCY
SUMMARY

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1999	Proposed FY 2000
Personnel		$52.8
Travel		$1.8
Contractual		$4.7
Commodities		$1.0
Equipment		$0.0
Subtotal	$0.0	$60.3
General Administration		$8.2
Project Total	$0.0	$68.5
Full-time Equivalents (FTE)		0.7
Other Resources		

LONG RANGE FUNDING REQUIREMENTS	
Estimated FY 2001	Estimated FY 2002
$0.0	$0.0

Dollar amounts are shown in thousands of dollars.

Comments:Project is Closeout for 95007A, 96007A, 97007A, 98007a, 99007A.

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Index Site Montioring
Agency: AK Department of Natural Resources

FORM 3A
TRUSTEE
AGENCY
SUMMARY

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FY 2000
Douglas R. Reger	Archaeologist II	18M	8.0	6.6		52.8
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		8.0	6.6	0.0	
					Personnel Total	$52.8

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FY 2000
Travel to Fairbanks to deposits archival data and access collections	0.3	2	4	0.125	1.1
Travel to Kodiak to deposit collections in the Alutiq Museum	0.4	1	2	0.125	0.7
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$1.8

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: AK Department of Natural Resources

FORM 3B
Personnel
& Travel
DETAIL

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FY 2000
Report printing and binding	2.0
Film processing	1.5
Radiocarbon dating, 4 samples @ $300 each	1.2
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$4.7

Commodities Costs:	Proposed
Description	FY 2000
Office supplies	1.0
Commodities Total	$1.0

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: AK Department of Natural Resources

FORM 3B
Contractual & Commodities DETAIL

New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FY 2000
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage:	Number	Inventory
Description	of Units	Agency

FY00

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: AK Department of Natural Resources

FORM 3B
Equipment
DETAIL

Prepared:

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1999	Proposed FY 2000
Personnel		$9.5
Travel		$0.0
Contractual		$0.0
Commodities		$1.0
Equipment		$0.0
Subtotal	$0.0	$10.5
General Administration		$1.4
Project Total	$0.0	$11.9
Full-time Equivalents (FTE)		0.2
Other Resources		

LONG RANGE FUNDING REQUIREMENTS	
Estimated FY 2001	Estimated FY 2002
$0.0	$0.0

Dollar amounts are shown in thousands of dollars.

Comments:Project is Closeout for 95007A, 96007A, 97007A, 98007a, 99007A.

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: DOI Fish and Wildlife Service

FORM 3A
TRUSTEE
AGENCY
SUMMARY

2000 EXXON VALDEZ TRU! COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FY 2000
Debra Corbett	Archaeologist	GS-9	2.5	3.8		9.5
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		2.5	3.8	0.0	
					Personnel Total	$9.5

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FY 2000
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Site Index Monitoring
Agency: DOI Fish and Wildlife Service

FORM 3B
Personnel
& Travel
DETAIL

Contractual Costs:	Proposed FY 2000
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FY 2000
Description	
Office supplies	1.0
Commodities Total	$1.0

FY00

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: DOI Fish and Wildlife Service

FORM 3B
Contractual & Commodities DETAIL

Prepared:

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FY 2000
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY00

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: DOI Fish and Wildlife Service

FORM 3B
Equipment
DETAIL

Prepared:

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1999	Proposed FY 2000
Personnel		$8.3
Travel		$0.0
Contractual		$0.2
Commodities		$0.0
Equipment		$0.0
Subtotal	$0.0	$8.5
General Administration		$1.3
Project Total	$0.0	$9.8
Full-time Equivalents (FTE)		0.1
Other Resources		

LONG RANGE FUNDING REQUIREMENTS

Estimated FY 2001	Estimated FY 2002
$0.0	$0.0

Dollar amounts are shown in thousands of dollars.

Comments:Project is Closeout for 95007A, 96007A, 97007A, 98007a, 99007A.

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: U.S. Forest Service

FORM 3A
TRUSTEE
AGENCY
SUMMARY

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FY 2000
L. Yarborough	Archaeologist	GS-11	1.5	5.5		8.3
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		1.5	5.5	0.0	
					Personnel Total	$8.3

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FY 2000
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY00

Prepared:

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: U.S. Forest Service

FORM 3B
Personnel
& Travel
DETAIL

Contractual Costs:	Proposed FY 2000
Description	
Photo processing	0.2
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.2

Commodities Costs:	Proposed FY 2000
Description	
Commodities Total	$0.0

FY00

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: U.S. Forest Service

FORM 3B
Contractual & Commodities DETAIL

Prepared:

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FY 2000
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY00

Project Number: 20007A
Project Title: Archaeological Index Site Monitoring
Agency: U.S. Forest Service

FORM 3B
Equipment
DETAIL

Prepared:

PHOTOGRAPHIC AND ACOUSTIC MONITORING OF KILLER WHALE IN PRINCE WILLIAM SOUND AND KENAI FJORDS, ALASKA (Submitted under BAA #52ABNF900033)

Project Number: 00012

Restoration Category: Monitoring, Research

Proposer: North Gulf Oceanic Society

Lead Trustee Agency: NOAA

Duration: 1 year

Cost FY 2000: $ 87,490

Geographic Area: Prince William Sound/Kenai Fjords, Alaska

Injured Resource/Service: Killer Whales

ABSTRACT

This project continues the monitoring of the damaged AB pod and other Prince William Sound/Kenai Fjords killer whales that has occurred on a yearly basis since 1984. Methods include the photoidentfication of individual whales and acoustic monitoring with remote and vessel -based hydrophone systems. The project continues interpretation of previous data and data collected with matching funds. It provides for publication of the results from this multi-year examination of killer whale population biology, genetics, acoustics, trophic interactions, spatial and temporal distribution patterns, and contaminant accumulation.

INTRODUCTION

This project is a continuation of the reduced annual killer whale monitoring program. Killer whales were monitored under EVOS Trustee Council funding in 1989, 1990, and 1991 (damage assessment) and in 1993 and 1995 (restoration monitoring) with a reduced annual monitoring program initiated in 1996. In addition this project provides additional analysis and publication of aspects of the comprehensive killer whale investigation initiated in FY95 and continued in FY96, FY97, and FY98. In FY99 a monitoring program was augmented with matching funding to continue aspects of genetic and contaminant analysis.

On March 31, 1989 AB pod was observed in oil sheens and six of the 36 pod members were missing. A total of 14 whales were lost from resident AB pod in the two years following the *Exxon Valdez* oil spill and there was no recruitment into the pod during those years. Since that time the social structure within AB pod has shown signs of deterioration. Maternal groups have traveled independently or with other pods, and pod members have not consistently traveled with closest relatives. Although 4 calves were recruited during the period 1992-1994, there were 5 additional moralities in 1994. There has been a net increase of three individuals since 1995 and the pod currently contains 25 individuals. The rate of mortality observed in this pod after the oil spill far exceeds that recorded for other resident pods observed in Prince William Sound over the past 13 years or for 19 pods in British Columbia over the past 20 years.

Nine whales from the transient AT1 group have not been observed since 1989. Two additional AT1 whales have not been sighted for six years. From genetic and photographic data from beached whales, two of these eleven whales are known to be dead. Although transient killer whale social structure is not fully understood, we are increasingly confident that the missing AT1 whales are dead. Statistical analysis strongly suggests that they have either died or permanently emigrated from the area. Since there is no record of them in adjacent regions it is very likely they are dead.

This project will continue the monitoring program necessary to map the changes (recovery or non-recovery) of Prince William Sound killer whales on a reduced annual basis. Behavioral observations and spatial and temporal data will be collected opportunistically in the course of photographic and acoustic monitoring, but there will be no new analysis of this data.

Fourteen years of systematic data collected under public and private funding have been placed in a specially designed GIS system at the Prince William Sound Science Center. The database contains 713 records of encounters with killer whales in and near Prince William Sound. Among these are 197 encounters with transient-type whales. Analyses have found large-scale differences in spatial distribution patterns between resent and transient whales over time. Changes in transient whale distributions have been examined in relation to changes harbor seal populations. Detailed distribution patterns in space and for both residents and transients have been examined and are in the process of publication.

Limited collection and analysis of killer whale biopsy samples and observation and collection of killer whale prey remains will continue, although dependent on continued matching funds. We have obtained solid results from mitochondrial DNA analysis of Prince William Sound killer whales, although recent fieldwork has enlarged the sample size from some groups. After a delay for additional analysis a manuscript detailing these results is in preparation. Current results show fixed differences in mitochondrial DNA between of the resident and transient groups and between three transient and two resident populations. Because mitochondrial DNA is maternally inherited, it accurately reflects patterns of female dispersal. Thus, it is commonly used as a first step in population analyses. It does not, however, shed light on male dispersal. Male dispersal, genetic divergence and variation can be assessed directly by analysis of nuclear DNA, thus we combined both mitochondrial

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and nuclear analyses. Microsattelite markers in nuclear DNA were developed in FY97 are currently being used to investigate a wide variety of population properties, including mating systems, inbreeding levels, effective population size, and the extent of population subdivision (Queller et al. 1993). The uniqueness of pods or groups (particularly AB pod and the AT1 population) are being tested and the potential vulnerability of populations to extinction from random causes or from increases in mortality associated with human activity examined. We request some funding in FY 2000 for completion and publication of this extensive and groundbreaking analysis.

There is worldwide concern that specific PCB and dioxin congeners may have negative effects on reproduction in mammals. The recovery of killer whales in Prince William Sound and the long-term health of the population is dependent on unimpeded reproductive processes. During this study we have determined contaminant levels in both resident and transient killer whales, and found much higher levels in the transient population. Contaminants seem to passed from mother to offspring via lactation and levels follow consistent patterns within genealogies. Samples were obtained from individually identified living whales that can be resampled to assess future changes. The ability to sample and potentially resample specific known individuals and their known kin is a unique aspect of this project. Comparisons with other cetacean populations is in process, correction factors must be developed for variance in analytical techniques. Preliminary results raise concern that contaminants in transient whales could negatively impact reproduction. There has been no successful reproduction in the AT1 group since 1984. We seek some funding in FY2000 for additional sampling of transients and analysis publication of these results. All chemical analysis of tissue and some interpretation of results been provided without cost by the NMFS/NOAA Environmental Contaminant Laboratory, Seattle, Washington.

In FY97 we initiated a remote hydrophone and acoustic analysis element to this project. Initial analysis and separation of pods was completed in FY 97. An additional hydrophone was established in Resurrection Bay in FY98, although problems with location rendered it ineffective in winter months. We plan to change the current location based on acoustic measurements and the observed distribution of whales in winter 1998/99

Final analysis of pod specific dialects has been hampered by insufficient recordings of particular pods including AJ, AG, and AF to clearly establish pod specific calls. (NGOS is using a 15 year database of killer whale recordings to establish these dialects). Recordings can be used to document the presence of specific killer whale pods and groups. With cooperation of the Alaska Sea Life Center the remote hydrophone system in Resurrection Bay will be converted to microwave transmission and linked to the recently established microwave system used for remote viewing of Steller sea lions. The long-term goal of this aspect of the project is to determine the year-round habitat use of southwestern Prince William Sound and Kenai Fjords by AB pod and other killer whale pods and provide an additional, innovative, and cost effective tool for monitoring killer whales year round. Also a hydrophone in Resurrection Bay has the added benefit of providing a continuos live feed to the Alaska Sea Life Center for education of visitors and residents. In winter 1998/99, using in kind donations for opportunistic surveys, we were able to determine that AB pod used inner Resurrection Bay on a consistent basis in all months from October to April. Other pods including AI, AN10, and AJ were also present at times.

NEED FOR THE PROJECT

A. Statement of Problem

The AB pod of killer whales was injured by the EVOS. Although it had shown signs of recovery from 1991 to 1993, mortalities in 1994/95 reduced the number of surviving AB pod whales to 22. Since 1995 there has been a net gain of three individuals

but recovery is still uncertain. At least 11 of the AT1 group of transient killer whales have apparently died since 1989 and there has been no reproduction within the group. This project will continue to monitor the status of AB pod and the AT1 group.

Sightability of killer whales in Prince William Sound has changed since the spill; whales are now more frequently encountered in the Kenai Fjords region. Mortalities following the spill have apparently led to additional mortalities. Deterioration in AB pod social structure has led to a situation where subpods now travel separately; the AB25 subpod travels with AJ pod. Despite considerable effort, re-sightings of the AT1 group have declined and fewer individuals are seen when members of this transient group group are located. We are confident that half of the original 22 members of this group are dead, or have emigrated to other regions; the later possibility is unlikely.

Although the rate of encounter with members of the AT1 transient group has declined, there has been no detectable increase in the sightings of other transient groups, suggesting that other transients are not increasing their use of the Sound as use by the AT1 group declines. Whether this overall decline in the encounters with transient (marine mammal eating) killer whales is related to oil spill effects or ecosystem changes is not clear, but we suspect a combination of the two factors. The severe decline in harbor seals and Steller sea lions are undoubtedly important factors in the decline.

MtDNA analysis has demonstrated the genetic uniqueness of the AT1 group from residents as well as from other transients. Our nuclear DNA analysis is confirming those differences. The loss of the AT1 group could represent a serious overall loss of genetic diversity.

Some environmental contaminants such as PCBs and DDTs have been linked to reproductive dysfunction in mammals. We have discovered high levels of these contaminants in the transient (marine mammal eating) killer whales, including the non-reproducing AT1 group. When compared to other cetacean populations, these levels appear to be in a range that could result in reproductive dysfunction or other effects that might impede recovery of this group.

B. Rationale/Link to Restoration

Annual killer whale population monitoring will determine recovery status of AB pod and the AT1 transient group. The actual status of AB pod is considered non-recovering at this time. Long term patterns will only be clarified by continued monitoring. A low level annual monitoring program was initiated in FY96 and is proposed to continue in FY00. Since all pods and whales are not observed in every year, annual monitoring will prevent extensive data gaps and allow certain determination of recruitment and mortalities in a much shorter time frame. An annual killer whale behavioral database of spanning 15 years now exists in a GIS format. It is accompanied by a photographic database the includes identifications of all individuals from each frame of film for every encounter logged in the GIS system. This data system will be used to log all encounters and effort. Because killer whales are a long-lived species with low reproductive and mortality rates, this monitoring must be consistent and long-term to be meaningful. Without the pre-spill monitoring of these whales any damage assessment would have been impossible. This species is a key ecosystem element reflecting long-term environmental trends and is worthy of a long-term program

Continued development of acoustic monitoring and dialect analysis will eventually provide a cost-effective year- round extension of the monitoring program. We will continue to work cooperatively with the Alaska Sea Life Center, Kenai Fjords National Park, and Daniel Zatz in this endeavor. This program will directly involve residents and visitors in the process of monitoring and restoration via linkage with Alaska Sea Life Center system that currently provides video/acoustic monitoring of Steller sea lions.

C. Location

This project is part of an ongoing killer whale research in Prince William Sound and the Kenai Fjords region, Alaska. The project involves the village of Chenega, Port San Juan Hatchery, the Alaska Sea Life Center, Kenai Fjords National Park, and other residents and visitors to the region. It operates cooperatively with the Kenai Fjords and Prince William Sound tourboat industry.

COMMUNITY INVOLVEMENT AND TRADITIONAL KNOWLEDGE

There is great public concern and interest for killer whales in Prince William Sound and in Kenai Fjords. The rapidly expanding tourboat industry depends on a healthy killer whale population to attract and satisfy visitors and residents. We have been closely involved with tourboat and recreational operators and residents by exchanging sighting information on a daily basis and providing a catalogue of individual whales to enhance enjoyment of whale observation. We have provided workshops detailing whale biology and stressing whale watching guidelines. Recent publication of an updated identification catalogue that includes details of our research results and viewing guidelines has further sparked interest in these whales. Killer whales now draw thousands of visitors to the region each year. We are working cooperatively with the Youth Area Watch through the Chugach School District to take young students into the field and allow them to directly participate in our research.

Residents and visitors to the spill area will be directly involved in the killer whale project by participating in the monitoring of the remote hydrophone system at the Alaska Sea Life Center.

We continue to collect observations and stories from native residents and others that will provide background for interpretation of our findings and place the work in a historical and cultural perspective. Some of these legends and stories are used to place our research in a broader context in our recent "Killer Whales of Southern Alaska".

PROJECT DESIGN

A. Objectives

1. Continue photographic monitoring program and determine status of resident killer whale pods, particularly AB pod. Examine the demographics of this pod in relation to other resident killer whale pods.

2. Monitor the AT1 group of transient killer whales to determine mortality or recruitment and indications of recovery to pre-spill distribution and abundance.

3. Monitor year round movements of resident and transient killer whales using remote hydrophones in Resurrection Bay.

4. Continued analysis of calls and separation of pod dialects necessary for interpretation of remote hydrophone data. Prepare for publication.

5. Compare calls of AB pod prior to and following the oil spill to examine changes in dialect as an indicator of changes in social organization

6. Determine whether inbreeding and/or the lack of availability of mates could prevent the recovery of EVOS-impacted AB resident and AT1 transient killer whales in Prince William Sound.

B. Methods

Killer Whale Monitoring

The goal of this aspect of the study is the photoidentification of each individual in each pod/group, that regularly uses the Sound, particularly AB pod and the AT1 group. Knowledge of the demographics of all regularly sighted pods and groups may be necessary to meet recovery definitions.

Thus, it is important that researchers maximize the time actually spent with killer whales (particularly AB pod and the AT1 group) to insure thorough identification of all individuals. Methods proposed to obtain photographic data necessary to meet monitoring objectives will be similar to those used by the NGOS in Prince William Sound/Kenai Fjords for the past fifteen consecutive years. Searches for whales will not be made on random transects, but based on current and historical sighting information. In addition whales will be located by listening for killer whale calls with a directional hydrophone (calls can be heard up to 10 miles away), or by responding to VHF radio calls from other vessels reporting sightings of whales. We have developed network of cooperating vessel owners and tourboat operators that regularly report whale sightings. In addition requests for recent killer whale sightings will be made routinely on hailing Channel 16 VHF and working channel 77.

A vessel log and chart of the vessel track will kept for each day the research vessels operate. The elapsed time and distance traveled will be recorded and vessel track plotted. Record will be made of the time and location of all whale sightings and the weather and sea state noted at regular intervals.

Specifics of each encounter with killer whales will be recorded. The killer whale encounter data sheet developed in 1995 and specifically tailored to GIS data entry requirements will be used. Data recorded will include date, time, duration, and location of the encounter. Rolls of film exposed and the estimated number of whales photographed will also be recorded. A chart of the whales' trackline during the encounter will be completed and the distance traveled by the vessel with the whales will be calculated at the time of GIS input. General behavior of the whales (i.e. feeding, resting, traveling, socializing, milling) will be recorded by time and location.

Photographs for individual identification will be taken of the port side of each whale showing details of the dorsal fin and gray saddle patch. Photographs will be taken at no less than 1/1000 sec using Fuji Neopan 1600, a high speed black and white film,. A Nikon 8008 or N70 autofocus camera with internal motor drive and a 300 mm f4.5 autofocus lens will be used. When whales are encountered, researchers will systematically move from one subgroup (or individual) to the next keeping track of the whales photographed. If possible, individual whales will be photographed several times during each encounter to insure an adequate identification photograph. Whales will be followed until all whales are photographed or until weather and/or darkness makes photography impractical.

All photographic negatives will be examined under a Wild M5 stereomicroscope at 9.6 power. Identifiable individuals in each frame will be recorded. When identifications are not certain, they will not be included in the analysis. Unusual wounds or other injuries will be noted. Photographic negatives will be analyzed using a photographic database that spans fifteen years. Identities of each whale that appears in every frame of usable film will be recorded and stored in VAX computer system. Final analysis and assessment will follow Matkin et al. (1994).

The primary vessel used to secure identification photographs will be a 27' diesel inboard/outboard powered vessel that can sleep two individuals (R.V. *Whale 2).* With sleeping accommodations and large fuel capacity, the R.V. *Whale 2* resupplies infrequently which greatly increases available time searching for or photographing whales.. This vessel will operate a total of 50 days, from late July July through early September. From historical data these dates are judged to be to be the most likely time to encounter AB pod as well as many of the other resident pods that use the Sound and Kenai Fjords. There will be some flexibility of schedule in response to sighting reports. The R.V. *Lucky Star* will also deliver fuel to designated locations and provide other logistical support for the operation of the R.V. *Whale 2.* The *Lucky Star* will operate a total of 3 days.

The report for the monitoring segment will include a summary of field effort, and summary of the pods and individuals encountered and a status report on AB pod and the AT1 group. Changes within AB pod will be examined with consideration for the age and sex structure of the pod and maternal groups within the pod. Frame by frame input of identification data from exposed film into VAX and IBM PC computer systems will occur and identifications tabulated by pod and by individual. Copies of killer whale encounter data and vessel logs will be made available to the EVOS Trustee Council and/or lead agency and this data will be archived in the GIS database for potential future analysis. Frame by frame identification data will also be made available on disc. Copies of the GIS program and data base will also be made available by request to NGOS.

Acoustic Monitoring

Pod specific dialects for resident killer whales have been determined from tape recordings made by several researchers in the Prince William Sound area and in Southeast Alaska during the spring and summer months of the years 1984 to 1997. Construction of a catalogue of pod specific dialects is ongoing and dependent on recordings that will be made during the FY99 field season. Specific calls from Prince William Sound transient (AT1 group) killer whales also have been catalogued (Saulitis 1993). A total of 8456 calls have been screened and digitized using a Kay Elemetrics Real Time Sound Spectrum Analyzer, Model 5500. Samples from this screening process were digitized using the Canary acoustic spectrum analysis software (The Cornell Bioacoustics Workstation). Calls from different killer whale pods and transient groups are being categorized using the same method used by John Ford in British Columbia, Canada. This process involves arbitrary acoustical identification paired with a visual and statistical comparison of sound spectra. The results of this initial analysis were presented at the 12th Biennial Conference of Marine Mammalogy in Monaco (Jurk , H., Barrett-Lennard, L., Ford, J.K.B., Matkin, C.M., Saulitis, E., and K. Heise. 1998. Clans among resident killer whales (*Orcinus orca*) in Prince William Sound.)

The final assessment of repertoires of Prince William Sound killer whales will occur in FYI and a paper readied for publication. Hopefully this will include the repertoires of the less frequently encountered pods from which we will attempt to obtain recordings from in FY99. In addition, recordings from the remote hydrophone obtained will be analyzed. The acoustic relationships between resident pods will be clarified and futher compared with genetic results. While similarities of mitochondrial DNA sequences or overall genetic similarity describes relatedness of pods within the past 10,000 to 20,000 years, dialects reflect the more recent history of community divergence.

Killer whale dialects are vocal traditions that are passed on maternally from one generation to the next. In FY 2000 we will examine possible changes in dialect structure within AB pod before and after the spill to determine changes that may have accompanied the social changes within the pod. Are mortalities and changes in behavior (i.e. splitting into subpods) reflected by changes in dialect? Examination of possible drift in dialect of other pods will be required to interpret any AB pod changes that are discovered. In

addition we will continue attempts to link vocalizations to changes in behavior within resident killer whale groups.

Because of movements of killer whales into the Kenai Fjords region during the winter months in recent years, our remote hydrophone will be operated in the Thumb Point area of Resurrection Bay . An anchored and encased cable will run from the transmitter on shore to the hydrophone at a depth of about 20 meters. SeeMore Wildlife Systems will design, customize and install a microwave link to transmit live audio from Thumb Point to the Alaska Sealife Center. A wind generator and solar panels will provide power to maintain 24 hour transmission as well as power to energize hydrophone components. Additionally, system status and function controls will be remotely accessible from the Alaska Sealife Center. The system will be capable of live transmission of up to thirty miles-- line of sight, and may be upgraded to provide live video at a later time.

During summer months the hydrophones will be monitored from the R.V.*Whale 2* via broad band receiver as an aid in locating whales. During the summer and winter months in Kenai Fjords it will be monitored by the Alaska Sea Life Center. Receivers will be equipped with recording systems. The receiver will be monitored on a regular scheduled basis and a log of operation maintained in conjunction with the sea lion research program. In the future we hope to expand the system to areas on the outer coast as the system at the Alaska Sea Life Center is expanded.

Genetic Analysis

By the beginning of FY2000, we will have completed the numerical and statistical analysis of microsatellite DNA from Prince William Sound resident and transient killer whales, compared our results to those obtained in a study of British Columbian killer whales, and submitted our findings on these topics for publication. In FY2000 we will turn our attention specifically to the the AT1 transients and the AB resident pod, and evaluate their prospects for recovery in the light of our genetic findings to date.

Both the AT1 transient assemblage and AB pod are small enough that genetic problems arising from inbreeding virtually eliminate the possibility of recovery if they are closed populations. We will meet our objective by combining our genetic data from Prince William Sound with data from a concurrent genetic study by Lance Barrett-Lennard and colleagues in British Columbia to determine resident and transient killer whale mating systems. We will then ask whether these systems provide sufficient gene flow for the two most depleted killer whale groups to avoid the deleterious genetic consequences of inbreeding---in other words, whether there are genetic impediments to their eventual recovery.

Most equipment needed to complete the contracted field research will be provided by the North Gulf Oceanic Society, including binoculars, nets, directional hydrophones, photographic equipment and biopsy equipment. Additional remote hydrophones, transmitters, receivers, and recorders will be purchased with matching monies. Additional supplies and minor equipment will be purchased as necessary. Apple Macintosh and IBM compatible computers owned by NGOS as well and the GIS system available at the Cook Inlet Keeper will be used for data storage.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

The entire project will be completed under the auspices of the North Gulf Oceanic Society and administered by the National Marine Fisheries Service, Juneau, Alaska. NGOS will provide a technician to enter data collected in 2000 into the GIS database using the a preexisting menu interface. Genetic analysis will be completed by Lance Barrett-Lennard of Pacific Ecological Services at the University of British Columbia. Acoustic analysis will be completed by Harold Jurk at the University of British Columbia. Design, construction, and installation of remote hydrophone transmission system will be contracted to Daniel Zatz (SeeMore Systems). Monitoring the remote hydrophone system will be a cooperative project with the Alaska Sea Life Center. Contracts for vessel leases will be issued by the North Gulf Oceanic Society or the Society will use its own vessels for the project.

SCHEDULE

A. Measurable Project Tasks for FY2000

Oct. 1-10 1999 Installation of microwave transmitted remote hydrophone.

Nov 1-30 1999: Summarize monitoring fieldwork for FY99. Input data into GIS system.

Oct. 1 - Dec. 31 1999: Analysis of photographs from 1999 fieldwork.

Oct. 1 - Dec. 31 1999: Complete statistical analysis of Prince William Sound and British Columbian resident and transient killer whale mating systems, based on genetic paternity exclusions and on allele frequency (Fst) comparisons.

Oct. 1- March 30: Continue winter recordings at Alaska Sea Life Center from remote hydrophone.

Oct. 1-Dec. 31: Acoustic analysis of killer whale calls from previous year.

Jan. 1 - July 31 2000: Prepare and submit papers.

Aug. 1-Sept.30 2000: Respond to reviewers comments and revise papers as required.

July -Sept. 2000: Killer whale monitoring emphasis field work. Monitor hydrophone from research vessel as possible.

The R.V.*Whale 2* will operate for 50 days in July, August, and September. The primary function of this vessel will be killer whale photoidentification monitoring. This time period is generally a period of high encounter rate with AB pod and other resident pods. A portion of the operational expense will be funded by matching moneys. A small percentage of this field time may be used in other months if sighting reports indicate it would be advantageous.

B. Project Milestones and Endpoints

The FY2000 killer whale project will continue the reduced annual photoidentification monitoring program and the acoustic monitoring program initiated in FY1997. Future fieldwork will involve population monitoring and acoustic monitoring. Continued analysis and publication of genetic data, final definition of acoustic dialects and publication will be completed in FY2000 as well as publication of contaminant analysis results.

C. Completion Date

All phases of the project should be completed in FY2000 except for the ongoing limited monitoring and remote hydrophone projects.

PUBLICATIONS AND REPORTS

We plan to submit two genetic articles in FY 2000. The first is a carry-over from FY1999.

Barrett-Lennard, L.G., Ellis, G.M., Matkin, C.O.M. Saulitis, E.L. 1999. Animal Behaviour. Mating systems in north-east Pacific resident and transient killer whales.

Barrett-Lennard, L.G., Matkin, C.O., Saulitis, E.L. Ellis, G.M. 1999. Molecular Ecology. Inbreeding avoidance and the prospects for recovery of Exxon-Valdez oil spill-impacted AB pod and AT1-assemblage killer whales in Prince William Sound, Alaska.

Jurk, H., E.L. Saulitis, and C.O. Matkin. Dialects of Prince William Sound resident killer whales. (Final submission in Canadian Journal of Zoology)

Ylitalo, G, C.O. Matkin, J. Stein. Patterns in contaminant levels in Prince William Sound killer whales (final submission).

PROFESSIONAL CONFERENCES

The P.I., Craig Matkin, will attend the Society For Marine Mammalogy 13th Biennial Conference Maui, Hawaii that will run from November 28-December 3, 1999. He will present a paper detailing changes in pods/ groups of southern Alaska killer whales from 1984-1999. Lance Barrett-Lennard will also attend this conference and present a genetics paper but will obtain travel funds elsewhere

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

The monitoring of killer whales and analysis of historic and current data on killer whale behavior is part of an program to investigate killer whale recovery and the interactions of killer whales and harbor seals. It will be integrated with the harbor seal trophic studies (project 96064, Kathy Frost, project leader). In FY2000 this project will rely on approximately $8,000 in matching funds from foundations or other private sources. As a non-profit research institution familiar with private funding sources and cooperative

programs, NGOS can work with the Trustee Council cooperation to maximize potential for matching funds in the future.

PROPOSED PRINCIPAL INVESTIGATOR:

Craig O. Matkin
North Gulf Oceanic Society
P.O. Box 15244, Homer, Alaska 99603
Phone/Fax (907) 235-6590
comatkin@xyz.net

KEY PERSONNEL

Craig Matkin (M.S. University of Alaska), is the project leader. Matkin will be responsible for supervising the completion of all fieldwork and insuring successful operation of boats and equipment. He will be the operator of the R.V. *Lucky Star* and supervise directly all work completed from that platform or the attendant skiff. He will direct data analysis and assemble all material for annual and comprehensive reports and be responsible for completion and submission of these reports. He will represent this project and present the work to the EVOS Trustee Council.

Matkin has studied killer whales in Prince William Sound since 1977. He initiated systematic killer whale photoidentification in Prince William Sound, and is a founding member of NGOS. In 1994 he completed the "The Biology and Management of Killer Whales in Alaska" for the U.S. Marine Mammal Commission. His most recent pertinent publication is of the EVOS killer damage assessment results ("The Status of Killer Whales in Prince William Sound 1984-1992", Craig O. Matkin, G. M. Ellis, M.E. Dahlheim, and J. Zeh in T.R. Loughlin. ed. Marine Mammals and the *Exxon Valdez*.) Mr. Matkin also teaches at the University of Alaska, Lower Kenai Penninsula Campus.

Eva L. Saulitis (M.S. University of Alaska) , a director of NGOS, has conducted fieldwork on killer whales in Prince William Sound each season since 1987. She is a principal field biologist for the monitoring segment of this project (photoidentification) and will co-operate the research vessel *Whale 2* aid in maintanance of the remote hydrophone. She will make ready and maintain all necessary equipment, complete photoidentification work and all logs and data sheets as required. She will provide entry of field data into the GIS system.

Saulitis completed her MS thesis "The Behavior and Vocalizations of the AT Group of Killer Whales in Prince William Sound, Alaska." in 1993. She coauthored the "Biology and Management of Killer Whales in Alaska" for the U.S. Marine Mammal Commission and "Killer Whales" for the EVOS Restoration notebook series. She has done extensive analysis of killer whale calls and has operated research vessels in Prince William Sound since 1988.

Graeme Ellis has participated in killer whale photoidentification studies in Canada and Alaska for 24 years. Ellis will do all final identifications of individual killer whales. He will examine all negatives on a repetitive frame by frame basis and supervise the input of the final identification data into the VAX computer system. With Matkin he will update all life history information on individual whales and provide positive identifications from photographs of each whale biopsied.

Currently Ellis directs whale identification work at the Pacific Biological Station in Nanaimo, British Columbia and has done final identifications on Prince William Sound killer whale photographic negatives since 1983. He has more experience than any other individual identifying Prince William Sound killer whales from photographic negatives and his accuracy has been certified by repeated testing.

Lance Barrett-Lennard (MS, University of British Columbia). Lance (an American citizen) is a Phd. candidate at the University of British Columbia. He conducted or supervised all genetic lab work at the University of British Columbia for the killer whale genetic studies. He will also provide final interpretation and publication of those results.

Barrett-Lennard has researched killer whales for 11 years, specializing in their acoustics and genetics. He has operated research vessels in Prince William Sound and British Columbia.

Harold Jurk Harald is a Phd. candidated at the University of British Columbia and specalizing in cetacean acoustics. He is conducting analysis and interpretation of killer whale acoustic data collected over the past 13 years in Prince William Sound/Kenai Fjords from vessels and from remote hydrophones.

LITERATURE CITED

Matkin, C.O., G. Ellis, M. Dahlheim, and J. Zeh. 1994. Status of killer whales in Prince William Sound, 1984-1992. in T. Loughlin, ed. Marine Mammals and the *Exxon Valdez.* Academic Press, San Diego, CA.

Queller,DC; Strassmann, JE; Hughes,CR 1993. Microsatellites and kinship. Trends Ecol. Evol. 8(8), 285-288.

Saulitis, E. 1993. The behavior and vocalizations of the AT group of transient killer whales in Prince William Sound, Alaska. MSC. Thesis, Institiute of Marine Science, University of Alaska, Fairbanks.

Ford, J.K.B. 1991. "Vocal traditions among resident killer whales (Orcinus orca) in coastal waters of British Columbia." Can, J. Zool. 69:1454-1483

Jurk , H., Barrett-Lennard, L., Ford, J.K.B., Matkin, C.M., Saulitis, E., and K. Heise 1998. Clans among resident killer whales (Orcinus orca) in Prince William Sound. Oral presentation at the World Marine Mammal Conference, Monaco.

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1998 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1997 - September 30, 1998

Budget Category:	Authorized FY99	Proposed FY2000						
Personnel		$30,690.0						
Travel		$2,825.0						
Contractual		$34,050.0						
Commodities		$7,170.0						
Equipment		$4,800.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$0.0	$79,535.0		Estimated FY2001	Estimated FY2002	Estimated FY2003	Estimated	
Indirect		$7,955.0						
Project Total	$79,800.0	$87,490.0		$80,000.0	$80,000.0	$80,000.0		
Full-time Equivalents (FTE)		9.0						
	Dollar amounts are shown in thousands of dollars.							
Other Resources		$8,000.0						

Comments:

2000

Prepared: April 1999

Project Number: 00012
Project Title: Killer Whale Monitoring
Name: North Gulf Oceanic Society

FORM 4A
Non-Trustee
SUMMARY

1998 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1997 - September 30, 1998

Personnel Costs:			Months	Monthly		Proposed
Name	Position Description		Budgeted	Costs	Overtime	FY 1998
Craig O. Matkin	P.I. Field Biologist		3.0	4400.0		13,200.0
Graeme Ellis	Photo Analyst		1.0	3500.0		3,500.0
Eva Saulitis	Field Biologist		2.5	2800.0		7,000.0
	Field Assistant		0.7	1500.0		1,050.0
	Data entry technician		0.3	2800.0		840.0
	Acoustic Analyst		1.5	3400.0		5,100.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		9.0	18400.0	0.0	
					Personnel Total	$30,690.0

Travel Costs:		Ticket	Round	Total	Daily	Proposed
Description		Price	Trips	Days	Per Diem	FY 1998
Homer/Vancouver (RT)		650.0	1	3	75.0	875.0
Homer/Hawaii		750.0	1	4	150.0	1,350.0
Homer/AnchorageRT		150	2	3	100.0	600.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
					Travel Total	$2,825.0

2000

Prepared:

Project Number: 00012
Project Title: Killer Whale Monitorng
Name: North Gulf Oceanic Society

FORM 4B
Personnel
& Travel
DETAIL

1998 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1997 - September 30, 1998

Contractual Costs:	Proposed
Description	FY 1998
Pacific Ecological Services (genetic analysis and interpretation)	8,800.0
Hydrophone maintenance	2,000.0
27' research vessel (Whale 2) 50 days @ 420/day	21,000.0
Supply/Research Vessel 3 days @ 750/day	2,250.0
Contractual Total	$34,050.0

Commodities Costs:	Proposed
Description	FY 1998
Phone	280.0
Field Food ($16/person/day)	1,800.0
E-mail	120.0
Fuel	2,400.0
Film/Processing/Printing	1,600.0
Field Supplies	320.0
Deep Cycle batteries	180.0
Shipping	470.0
Commodities Total	$7,170.0

2000

Prepared:

Project Number: 00012
Project Title: Killer Whale Monitoring
Name: North Gulf Oceanic Society

FORM 4B
Contractual & Commodities DETAIL

1998 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 1997 - September 30, 1998

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FY 1998
Microwave transmission and reception equipment, wind generator (installed by Daniel Zatz)			4,800.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$4,800.0

Existing Equipment Usage: Description	Number of Units	
	1	
	1	

2000

Prepared:

Project Number: 00012
Project Title: Killer Whale Monitoring
Name: North Gulf Oceanic Society

FORM 4B
Equipment
DETAIL

Project Title: Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators (NVP)

Project Number:	00025
Restoration Category:	Research
Proposer:	Leslie E. Holland-Bartels and NVP Scientists[1]
Lead Trustee Agency:	DOI, U.S. Geological Survey
Cooperating Agencies:	ADFG, NOAA, USFS
Alaska SeaLife Center:	
Project Duration:	6th year, 5-year project
Cost FY 00:	$217,200
Geographic Area:	western Prince William Sound
Injured Resource/Service:	sea otter, river otter, harlequin duck, pigeon guillemot, intertidal and subtidal organisms

ABSTRACT

Fiscal year 2000 is dedicated to revising portions of the FY99 Final Report for the Nearshore Vertebrate Predator project for publication in peer-reviewed journals. The team envisions publishing 10 manuscripts collectively, and as submitting as many as 13 additional manuscripts to separate Journals during FY00. Funds for this year are requested for responding to review comments, final analysis, and final report writing. Funding is also requested for individual presentation by 12 P.I.'s of their study results at one professional meeting.

The Nearshore Vertebrate Predator Project (NVP) makes an integrated assessment of trophic, health, and demographic factors across a suite of apex predators injured by the spill to determine mechanisms constraining recovery and to improve our knowledge of the status of recovery. Primary hypotheses are: 1) Recovery of nearshore resources injured by EVOS is limited by recruitment processes; 2) Initial and/or residual oil in benthic habitats and in or on benthic prey organisms has had a limiting effect on the recovery of benthic foraging predators; and 3) EVOS induced changes in populations of benthic prey species have influenced the recovery of benthic foraging predators.

[1]NVP scientists and affiliations are listed under the PERSONNEL Section

INTRODUCTION

This 5-year project, *Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators* (NVP), was approved by the Trustees in March 1995 and began data collection in late summer, 1995. The project examines the status of recovery of four selected top vertebrate predators (sea otter, river otter, pigeon guillemot, and harlequin duck) in the nearshore environment of Prince William Sound (PWS) and is designed to better assess their recovery and determine mechanisms constraining that recovery.

Work completed in FY 95 and early FY 96 included completion of an extensive data management plan and a data archiving and file serving system to facilitate exchange and integration of project data among the fifteen project scientists. In those years, the sea otter, harlequin duck, and avian copredator components were initiated; however, primary focus was on pilot efforts to refine prey sampling strategies for further study. Full field seasons for sea otters, harlequin ducks, river otters and pigeon guillemots took place in FY96 and FY97. The original FY98 plan was to begin final data analysis and manuscript and final report writing and to conduct minimal field work as was necessary to finish some objectives for some components of the project. In response to January 1997 and 1998 peer reviewer comments, FY98 was a full field year for sea otters, pigeon guillemots, and invertebrates as indicators of sea otter recovery status. FY98 Funds that were to be used in data analysis and beginning report writing were required to address concerns of the peer reviewers. FY99 funds were used for final data analysis, a final meeting of P.I.'s, presentations at the 10th annual EVOS symposium, and writing of the Final Report. FY00 funds are requested for revising and preparing portions of the Final Report for publication in peer-reviewed scientific journals.

NEED FOR THE PROJECT

A. Statement of Problem

The nearshore marine ecosystem of PWS plays a critical role in the commercial, subsistence, and recreation economy of southcentral Alaska. Because of shorelines and coastal physiography, the nearshore ecosystem served as a repository for much of the oil spilled during the *Exxon Valdez* oil spill (EVOS). As a result, many of the injured resources under study by the EVOS Trustees Council are components of the nearshore system. Thus, the NVP study describes a research approach for assessing the biological and ecological significance of trophic issues and contaminants present in the nearshore environment. We focus on the status of system recovery and a suite of injured apex predators as indicators of environmental stress--the invertebrate feeding sea otter and harlequin duck, and fish feeding pigeon guillemot and river otter. NVP takes a multispecies, integrated approach to assess several potential key mechanisms constraining recovery of the nearshore system.

B. Rationale/Link to Restoration

Field efforts under NVP have addressed the question of recovery for four vertebrate predator species known to have been injured in the EVOS. For each species we asked "Is there evidence of recovery and if not, is it due to oil, food or demographic constraints?"

The final data analyses and writing of the Final Report for NVP are scheduled for completion in FY99. The synthesis of analyses of demographic, health and trophic parameters over the life of the project will result in a better understanding of processes in the nearshore environment. This, in turn, will also allow a better understanding of possibilities for restoration of these species. Publication in peer-reviewed journals

C. Location

This project was conducted in western Prince William Sound. For all four predator species, assessments were made at two areas, one oiled and one unoiled. Northern Knight Island was the oiled area for sea otter, river otter and harlequin duck assessments, and Naked Island was the oiled area for pigeon guillemots. Montague Island was the unoiled area for sea otter and harlequin duck assessments, whereas Jackpot Bay was the unoiled area for pigeon guillemots and river otters.

COMMUNITY INVOLVEMENT

A Traditional Ecological Knowledge workshop by members of the NVP team was held in Chenega Village in September, 1998. Gail Blundell, Tom Dean, Jim Bodkin, Henry Huntington and Dan Rosenberg met for one day with community members, providing presentations on the NVP studies on river otters, sea otters, invertebrates and harlequin ducks. There were discussions with community members on the spill effects and current status of resource recovery, from the community perspective. Information from this workshop will be included in the Final Report.

PROJECT DESIGN

A. Objectives

Objective 1. Revisions of Final Report and submission to selected peer-reviewed Journals.

Objective 2. Presentations to a professional conference.

B. Methods

Revisions to chapters of the Final Report for manuscript submission in FY 00 will be a combination of individual and collaborative efforts.

SCHEDULE

A. Measurable Project Tasks for FY 00

December 99	Submit manuscripts intended for feature article to peer-reviewed Journal
6 months after receipt of Trustee Council peer review comments	Complete revisions of Final Report
September 00	Revised journal submissions

B. Project Milestones and Endpoints

The endpoint of this project is scheduled for September 30, 2000.

C. Completion Date

September 30, 2000

PUBLICATIONS AND REPORTS

FY00 activities for NVP are directed at revising portions of the NVP Final Report for publication in peer-reviewed journals. We have identified 23 manuscripts to be published. The first 10 of these manuscripts are intended for publication collectively, as a feature in a peer-reviewed journal. The papers we propose will go through substantial internal and informal review before sending them out for formal reviews. We are working under the assumption that the final length of a collective feature will be between 60 and 80 journal pages. We propose an additional 13 manuscripts, derived from Appendices in the Final Report, for submission to separate journals during FY00.

NVP MANUSCRIPTS TARGETED FOR COLLECTIVE PUBLICATION IN FY00:

1. Status of recovery of the nearshore ecosystem of Prince William Sound, Alaska, ten years after the *Exxon Valdez* oil spill. L. Holland-Bartels et al.

2. Design of the Nearshore Vertebrate Predator Project. L. Holland-Bartels, L. McDonald, et al.

3. Evidence of injury, status of recovery, and factors limiting sea otter populations following the *Exxon Valdez* oil spill: Status of recovery of sea otters. J. Bodkin, T. Dean, D.H. Monson, B.E. Ballachey, S. Jewett, C. O'Clair, G. VanBlaricom

4. Recovery of sea otters in Prince William Sound following the *Exxon Valdez* oil spill: The role of food limitation. T.A. Dean, J.L. Bodkin, A. Fukuyama, S. Jewett, D. Monson, C. O'Clair, G. VanBlaricom, L. McDonald, B. Ballachey.

5. Evidence of injury, status of recovery, and factors limiting river otter populations following the *Exxon Valdez* oil spill. Status of recovery of River Otters. R.T. Bowyer, T. Dean, S. Jewett, J. Kern.

6. Evidence of injury, status of recovery, and factors limiting harlequin duck populations following the *Exxon Valdez* oil spill. D. Esler, T. Bowman, K. Trust, B. Ballachey, T. Dean, S. Jewett

7. Evidence of injury, status of recovery, and factors limiting pigeon guillemot populations following the *Exxon Valdez* oil spill. G.H. Golet, A.D. McGuire, P. Seiser, K.J Kuletz, , L. Duffy, D.B. Irons, D.D. Roby, T. Dean, S. Jewett, L. McDonald

8. Structuring of sea otter prey in Prince William Sound, Alaska. G. VanBlaricom, T. Dean, B. Ballachey, J. Bodkin, C. O'Clair, S. Jewett, A. Fukuyama, T. Gage, D. Munson

9. The use of biomarkers in evaluating the health status of populations exposed to environmental contaminants. B Ballachey, L. Holland-Bartels, J. Bodkin, G. Blundell, T. Dean, L. Duffy, D.Esler, G. Golet, S. Jewett, A. Rebar, P. Seiser, P. Snyder, J. Stegeman, K. Trust

10. Evaluating the recovery of ecosystems after environmental disasters: Lessons learned by the Nearshore Vertebrate Predator Project. L. Holland-Bartels et al.

NVP MANUSCRIPTS DERIVED FROM APPENDICES OF FINAL REPORT, TARGETED FOR SUBMISSION TO JOURNALS IN FY 00:

1. Meso-scale differences in mussel, *Mytilus trossulus,* population structure in Prince William Sound, Alaska in relation to oiling history and predation intensity. C. O'Clair and M. Lindeberg. To be published in Marine Ecology - Progress Series.

2. Long-term changes in mussel (*Mytilus trossulus*) abundance and growth at a heavily oiled bay in Prince William Sound, Alaska. M. Lindeberg, C. O'Clair and S. Saupe. To be published in Marine Biology.

3. Growth in the mussel, *Mytilus trossulus,* in Prince William Sound, Alaska: age-length and length-increment general models of the Schnute type compared. J. Millstein and C. O'Clair. To be published in J. Exp. Mar. Biol. Ecology

4. Testing assumptions for unbiased estimation of survival of radio-marked harlequin ducks. D. Esler, D. M. Mulcahy, and R. L. Jarvis.

5. Body composition and mass variation of molting harlequin ducks in Prince William Sound, Alaska. D. Esler and R. L. Jarvis.

6. Winter survival of adult female harlequin ducks in Prince William Sound, Alaska. D. Esler and R. L. Jarvis.

7. Variation in winter harlequin duck densities in Prince William Sound, Alaska: ecological influences and effects of the *Exxon Valdez* oil spill. T.D. Bowman, D. Esler, T. Dean, S. Jewett, C. O'Clair, and L. McDonald

8. Comparison of cytochrome P450 induction in sea ducks from oiled and unoiled areas of Prince William Sound, Alaska. K. D. Trust, K., D. Esler, J. Stegeman, B, Woodin, and M. Wolfe

9. Blood chemistry variation in harlequin ducks from Prince William Sound, Alaska. D.M. Mulcahy, D. Esler, B. Ballachey, L. Duffy, and A. Rebar

10. Cytochrome P4501A gene expression in sea otters: Quantitative polymerase chain reaction to measure CYP1A MRNA in peripheral blood mononuclear cells. P.W. Snyder et al. In Toxicological Science.

11. Comparison of Pigeon Guillemot, *Cepphus columba*, Blood parameters from oiled and unoiled areas of Alaska, Eight Years after the *Exxon Valdez* Oil Spill. P.E. Seiser, L.K. Duffy, A.D. McGuire, D. Roby, G. Golet, and M.A. Litzow

12. Inter-annual variability in the reproductive success of pigeon guillemots nesting on Jackpot Island, in southwestern Prince William Sound, Alaska, 1994-1998. P.E. Seiser, A.D. McGuire, D.D. Roby, and G. Golet

13. Comparison of spectrofluorometric and HPLC methods for the characterization of fecal porphyrin profiles in river otters of Prince William Sound, Alaska. C. Taylor, L.K. Duffy, F.G. Plumley, R.T. Bowyer. In Biomarkers.

PROFESSIONAL CONFERENCES

Multiple individual presentations by members of the NVP team are proposed for group presentation at one professional conference in FY00.

NORMAL AGENCY MANAGEMENT

The 1995 proposal was developed as a collaborative effort of a variety of research scientists from State, federal, university, and private centers under the facilitation of the U.S. Geological

Survey of the Department of Interior. The USGS has no management function or responsibilities but provides information for the management of DOI trust species as its primary mission. The NVP is a focused 5-year project to identify factors constraining recovery of selected species and provide additional tools to assess status. Upon completion, the developed tools can be transferred to the appropriate management agency for further implementation.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

Collaboration will continue as in previous years.

EXPLANATION OF CHANGES IN CONTINUING PROJECTS

The NVP project continues to follow the original detailed project description of 95025 submitted and approved March 1995.

PRINCIPLE INVESTIGATORS

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PERSONNEL

Dr. Brenda Ballachey, B.S., M.S. 1980 Colorado State University, Ph.D. 1985 Oregon State University, is a Research Physiologist at the Alaska Biological Science Center of USGS, Biological Resources Division. She was Project Leader for sea otter NRDA studies from 1990 through 1996, and has been involved in all aspects of post-spill research on sea otters. She has authored or coauthored over 25 peer-reviewed publications, and is currently a co-principal investigator for the Nearshore Vertebrate Predator (NVP) project, examining effects of residual oil on health and recovery of sea otters and other NVP study species.

Mr. Jim Bodkin, Research Wildlife Biologist, is Team Leader for studies of coastal marine research at the USGS Alaska Science Center in Anchorage. He has 22 peer-reviewed scientific publications directs an active sea otter research program. He has studied and published on sea otter population biology, natural history and community ecology since 1988. Jim has been a principal investigator in *Exxon Valdez* oil spill related research since March 1989.

Dr. R. Terry Bowyer, Professor of Wildlife Ecology, is the Deputy Director of the Institute of Arctic Biology at the University of Alaska Fairbanks. Dr. Bowyer has an extensive publication record (more than 80 scientific articles). He has conducted extensive research on river otters and impacts of EVOS on this species.

Dr. Thomas A. Dean, is President of the ecological consulting firm Coastal Resources Associates, Inc, (CRA) in Vista, CA. He has over 20 years of experience in the study of nearshore ecosystems, and has authored over 20 publications, including several papers dealing with sea urchin and kelp interactions. He has extensive experience in long-term monitoring studies with marine plants and invertebrates. He has had a major role in both the shallow subtidal and intertidal EVOS investigations since 1989.

Dr. Lawrence Duffy, Professor of Chemistry and Biochemistry at the University of Alaska Fairbanks has been working in the area of toxicology for 17 years and is a member of the International Society of Toxicology. He has studied various bacterial and mammalian toxins. Since the *Exxon Valdez* oil spill, he has published several papers related to developing biomarkers. He is currently on the editorial board of the Science of the total Environment. At the University, he teaches "Environmental Biochemistry and Biotechnology" and is a member of the Environmental Chemistry Program and Mammal Group.

Mr. Daniel Esler is a Wildlife Research Biologist with the Alaska Biological Science Center, USGS-Biological Resources Division. He has conducted waterbird research in arctic and subarctic regions of Alaska and Russia for the past 10 years. Since 1995 he has served as principal investigator for harlequin duck studies of the NVP project. He earned a M.S. from Texas A&M University in 1988 and is currently enrolled as a doctoral candidate at Oregon State University. He has authored 17 peer-reviewed journal publications and numerous reports and presentations addressing research and issues in waterbird conservation.

Dr. Leslie Holland-Bartels, B.S. University of Massachusetts, MS Louisiana State University, Ph.D. Purdue University is the former head of the Marine and Freshwater Ecology Research Program for the Alaska Biological Science Center, and current Director of the USGS Midwest Environmental Sciences Center. In Alaska, she directed the research of 17 senior scientists in the areas of seabirds, marine mammals, anadromous fisheries, and associate habitat and population issues. She has 24 years experience in aquatic ecology and over 30 publications in national scientific journals on subjects ranging from contaminants, ecology of invertebrates, fisheries, water quality and aquatic ecology.

Dr. Stephen C. Jewett has been at the School of Fisheries and Ocean Science, University of Alaska Fairbanks, since 1975. He currently serves as Research Professor and Scientific Diving Officer. While at UAF he has been involved in numerous benthic and intertidal investigations throughout Alaska that emphasize assessment and/or monitoring. He has authored more than 30 publications in scientific journals and books. In addition to his role in the NVP project, he was co-Principal Investigator on the EVOS shallow subtidal investigations (1989-1995) in Prince William Sound and is currently examining cytochrome P450 in nearshore fishes in the sound.

Dr. Lyman McDonald is Senior Biometrician and President of Western EcoSystems Technology, Cheyenne, Wyoming. He received B.S. and M.S. degrees from Oklahoma State University, and his Ph.D. from Colorado State University, Dr. McDonald is a biometrician with 30 years of comprehensive experience in the application of statistical methods to design, conduct, and analyze environmental and laboratory studies. He has designed and managed both large and small environmental impact assessment and monitoring programs.

Dr. A. David McGuire is Assistant Professor of Biology and Wildlife and Assistant Leader of the Alaska Cooperative Fish and Wildlife Research Unit at the University of Alaska, Fairbanks. He received his Ph.D. in Biology from UAF in 1989. His research interests include operation of ecological processes at large spatial scales, ecological modeling, and global change biology.

Dr. Charles E. O'Clair, B.S. Zoology, University of Massachusetts, Ph.D. in Fisheries, University of Washington. He is currently a Fishery Research Biologist with the National Marine Fisheries Service, Auke Bay Laboratory in Juneau, Alaska. He has over 16 peer-reviewed scientific publications. His research experience includes nine years of damage assessment and restoration process research related to the *Exxon Valdez* Oil Spill. Other research experience includes 12 years of field and laboratory work on the effects of oil pollution and logging practices on marine benthic invertebrates and research on the ecology and behavior of Dungeness, King, and Tanner crabs.

Dr. Alan Rebar is Dean of the School of Veterinary Medicine and Professor of Veterinary Clinical Pathology at Purdue University. He is internationally recognized as an expert in the field of clinical pathology and toxicology. He has been involved in EVOS studies of sea and river otters since 1991.

Dr. Paul W. Snyder is an Assistant Professor of Pathology and Immunotoxicology and Director of the Clinical Immunology laboratory of the Department of Veterinary Pathobiology, Purdue University. He is also a Diplomat of the American College of Veterinary Pathologists. His research interests are in the area of mechanism-based studies on the pathology and immunology of xenobiotics on biological systems. He has an NIH-funded project related to the immunobiology of environmental contaminants.

Dr. Glenn R. VanBlaricom has conducted research on coastal ecosystems since 1970, and has been involved in research on sea otters and their ecosystems for 22 years. More recently, he has also studied trophic and community ecology of steller sea lions and harbor seals, conservation biology and population dynamics of North Pacific whales, life history and habitat use patterns in North Pacific dolphins and porpoises, and acoustic ecology and tribal harvest issues associated with Alaskan beluga whale populations. Currently Dr. VanBlaricom is Assistant Unit Leader (Wildlife), Washington Cooperative Fish and Wildlife Research Unit, and is Associate Professor of Fisheries in the School of Fisheries, University of Washington. He currently sponsors seven graduate students (4 doctoral, 3 masters) and he has over 30 peer-reviewed scientific publications.

Cooperators:

Mr. Timothy D. Bowman is a Wildlife Biologist for the U.S. Fish and Wildlife Service, Migratory Bird Management Project. He has a M.S. in Wildlife Management, Department of Wildlife, University of Maine, Orono. He was principal investigator for the *Exxon Valdez* oil spill damage assessment study on bald eagles, and has conducted aerial and ground surveys of waterfowl and seabirds throughout Alaska. He has 9 publications in national peer-reviewed journals.

Dr Gregory H. Golet, B.S. Biology, 1987, Bates College, M.S. Marine Sciences 1994, University of California Santa Cruz, Ph.D. Biology, 1999, University of California Santa Cruz. 1997-present: Wildlife Biologist, U.S. Fish and Wildlife Service. He has studied seabirds in Prince William Sound since 1989, and has published in national peer-reviewed journals.

Dr. John Stegeman is a research scientist at Woods Hole Oceanographic Institution. He is internationally recognized as an expert in the area of cytochrome P450 biomarkers of hydrocarbon exposure.

2000 EXXON VALDEZ TRU E COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1999	Proposed FY 2000	Proposed FY 00 Trustee Agency Totals					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
				$22.3			$154.2	$22.8
Personnel	$201.5	$67.3						
Travel	$11.8	$2.5						
Contractual	$238.8	$109.2						
Commodities	$0.9	$2.5						
Equipment	$0.0		LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$453.0	$181.5			Estimated FY 2001	Estimated FY 2002		
General Administration	$47.0	$17.7						
Project Total	$500.0	$199.2			$0.0	$0.0		
Full-time Equivalents (FTE)	3.4	1.7						
	Dollar amounts are shown in thousands of dollars.							
Other Resources	$0.0	$0.0		$0.0	$0.0	$0.0		

Comments:

$199,200 is requested to prepare peer-reviewed journal manuscripts.

An additional $18,000 is requested for 12 PI's to make individual presentations as a group at a professional conference.

The proposed total requested for FY00 = $217,2

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: DOI: U.S. Geological Survey

FORM 2A
MULTI-TRUSTEE AGENCY SUMMARY

2000 EXXON VALDEZ TRU E COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1999	Proposed FY 2000						
Personnel	$160.5	$47.5						
Travel	$10.0	$2.5						
Contractual	$193.2	$88.4						
Commodities	$0.9	$2.5						
Equipment	$0.0	$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$374.6	$140.9			Estimated FY 2001	Estimated FY 2002		
General Administration	$37.6	$13.3						
Project Total	$402.2	$154.2						
Full-time Equivalents (FTE)	2.8	0.8						
			Dollar amounts are shown in thousands of dollars.					
Other Resources								

Comments:
SO=sea otters
HD= harlequin ducks
CS=Chief Scientist
RO/PG=river otters/pigeon guillemots
SC=subtidal clams

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: DOI: U.S. Geological Survey

FORM 3A
TRUSTEE
AGENCY
SUMMARY

2000 EXXON VALDEZ TRL E COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FY 1999
SO: B. Ballachey	Wildlife Biolo s	GS-12	2.0	6.0		12.0
D. Monson	Wildlife Biologist	GS-9	3.0	4.0		12.0
HD: D.Esler	Wildlife Biologist	GS-12	3.5	6.0		21.0
CS: L. H-Bartels	Chief Scientist	GS-14	0.0	0.0		0.0
M Whalen	Data Manager, Graphics	GS-11	0.5	5.0		2.5
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		9.0	21.0	0.0	
					Personnel Total	$47.5

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FY 1999
CS: LaCrosse/ANC/LaCrosse	1.5	1	5	0.2	2.5
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$2.5

2.2E+51

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: DOI: U.S. Geological Survey

FORM 3B
Personnel
& Travel
DETAIL

2000 EXXON VALDEZ TRU E COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FY 1999
RO/PG: University of Alaska, Fairbanks Research Work Order	45.1
SC: University of Washington Research Work Order	8.2
HD: Oregon State University	0.0
CS: Statistical consulting	10.0
Contract with Coastal Resources Associates see form 4A&B for details	25.1
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$88.4

Commodities Costs:	Proposed
Description	FY 1999
	0.0
Publication and Printing costs	2.5
Commodities Total	$2.5

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: DOI: U.S. Geological Survey

FORM 3B
Contractual & Commodities DETAIL

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FY 1999
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: DOI: U.S. Geological Survey

FORM 3B
Equipment
DETAIL

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1998	Proposed FY 1999						
Personnel	$0.0	$0.0						
Travel	$0.0	$0.0						
Contractual	$45.6	$20.8						
Commodities	$0.0	$0.0						
Equipment	$0.0	$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$45.6	$20.8			Estimated FY 2001	Estimated FY 2002		
General Administration	$3.2	$1.5						
Project Total	$48.8	$22.3						
Full-time Equivalents (FTE)		0.2						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

Comments:

Indirect cost based on 7% rate negotiated between ADF&G and the EVOS Trustees Council

See Forms 4a/b for linkage detail.

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: Alaska Department of Fish and Game

FORM 3A
TRUSTEE
AGENCY
SUMMARY

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FY 1999
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		0.0	0.0	0.0	
					Personnel Total	$0.0

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FY 1999
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Agency: Alaska Department of Fish and Game

FORM 3B
Personnel
& Travel
DETAIL

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Contractual Costs:	Proposed
Description	FY 2000
See Forms 4a/b for linkage detail.	20.8
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$20.8

Commodities Costs:	Proposed
Description	FY 1999
Commodities Total	$0.0

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: Alaska Department of Fish and Game

FORM 3B
Contractual & Commodities DETAIL

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FY 2000
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY00

Project Number: 00025 .
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: Alaska Department of Fish and Game

FORM 3B
Equipment
DETAIL

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 99	Proposed FY 1999
Personnel	$41.0	$19.8
Travel	$1.8	$0.0
Contractual		$0.0
Commodities		$0.0
Equipment		$0.0
Subtotal	$42.8	$19.8
General Administration	$6.2	$3.0
Project Total	$49.0	$22.8
Full-time Equivalents (FTE)		0.2
Other Resources		

LONG RANGE FUNDING REQUIREMENTS					
	Estimated FY 2000	Estimated FY 2001	Estimated FY 2002		

Dollar amounts are shown in thousands of dollars.

Comments:

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: National Oceanic and Atmospheric Administration

FORM 3A
TRUSTEE
AGENCY
SUMMARY

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FY 00
C. O'Clair	Marine Biologist	GS-12	2.0	8.7		17.4
Lindeberg	Marine Biologist	GS11	0.5	4.7		2.4
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		2.5	13.4	0.0	
					Personnel Total	$19.8

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FY00
					0.0
					0.9
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.9

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: National Oceanic and Atmospheric Administration

FORM 3B
Personnel
& Travel
DETAIL

Contractual Costs:	Proposed FY00
Description	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	$0.0

Commodities Costs:	Proposed FY00
Description	
Commodities Total	$0.0

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: National Oceanic and Atmospheric Administration

FORM 3B
Contractual & Commodities DETAIL

New Equipment Purchases: Description	Number of Units	Unit Price	Proposed FY 1999
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Lead Agency: National Oceanic and Atmospheric Administration

FORM 3B
Equipment
DETAIL

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

	Authorized	Proposed FY00						
		$41.0						
		$0.0						
		$0.0						
		$0.0						
		$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$0.0	$41.0			Estimated FY 2001	Estimated FY 2002		
Indirect		$4.1						
Project Total	$0.0	$45.1						
FTE		0.2						
			Dollar amounts are shown in thousands of dollars.					

Indirect rate is 10% as per UAF/BRD agreement

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Alaska, Fairbanks

FORM 4A
Non-Trustee
SUMMARY

4/15/99

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Name	Position Description		Months Budgeted	Monthly Costs	Overtime	Proposed FY 00
T. Bowyer	Wildlife Biologist		1.0	12.8		12.8
L. Duffy	Physiologist		0.9	13.6		12.2
						0.0
						0.0
						0.0
MS fellowship(P. Seizer)						2.5
PHD fellowship(G. Blundell)						13.5
						0.0
						0.0
						0.0
						0.0
						0.0
		Subtotal	1.9	26.4	0.0	
					Personnel Total	$41.0

Description	Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 00
					0.0
					0.0
					0.0
					0
					0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Alaska, Fairbanks

FORM 4B
Personnel
& Travel
DETAIL

4/15/99

	Proposed FY 00
Contractual Total	$0.0

	Proposed FY00
	0.0
	0.0
Commodities Total	$0.0

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Alaska, Fairbanks

FORM 4B
Contractual & Commodities
DETAIL

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

	Number of Units	Unit Price	Proposed FY 1999
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
New Equipment Total			$0.0

	Number of Units	

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Alaska, Fairbanks

FORM 4B
Equipment
DETAIL

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

	Authorized FY99	Proposed FY00						
		$5.8						
		$0.0						
		$0.0						
		$1.3						
		$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$0.0	$7.1			Estimated FY 2001	Estimated FY 2002		
Indirect		$1.1						
Project Total	$0.0	$8.2						
FTE		0.2						
	Dollar amounts are shown in thousands of dollars.							

Indirect is 15% as per UW/BRD agreement

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Washington, Seattle

FORM 4A
Non-Trustee
SUMMARY

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Name	Position Description		Months Budgeted	Monthly Costs	Overtime	Proposed FY 1999
A. Fukuyama	Ph.D. Research Assistant		2.1	1.8		3.8
Fukuyama Benefits						0.3
Fukuyama Tuition						1.7
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
		Subtotal	2.1	1.8	0.0	
					Personnel Total	$5.8

Description	Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 1999
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Washington, Seattle

FORM 4B
Personnel
& Travel
DETAIL

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

	Proposed FY 1999
	0.0
	0.0
Contractual Total	$0.0

	Proposed FY 1999
telephone/fax/graphics/postage/photocopy	0.2
publication costs	1.1
Commodities Total	$1.3

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Washington, Seattle

FORM 4B
Contractual & Commodities DETAIL

4/15/99

	Number of Units	Unit Price	Proposed FY00
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
New Equipment Total			$0.0

	Number of Units	

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: University of Washington, Seattle

FORM 4B
Equipment
DETAIL

2000 EXXON VALDEZ TRL : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

	Authorized FY 1998	Proposed FY 1999						
		$12.8						
		$1.0						
		$0.0						
		$0.0						
		$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	$0.0	$13.8			Estimated FY 2001	Estimated FY 2002		
Indirect		$11.3						
Project Total	$0.0	$25.1						
FTE		0.1						
	Dollar amounts are shown in thousands of dollars.							

Comments:

Indirect fee is sum of overhead (7.6K) and general and administrative costs (2.7K) + fee ($.96K)= $11.3K

2000 EXXON VALDEZ TRU[illegible]E COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Name	Position Description		Months Budgeted	Monthly Costs	Overtime	Proposed FY 1999
T. Dean	Marine Biologist		1.5	8.1		12.2
D. Jung			0.2	3.7		0.7
			0.0	0.0		0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
		Subtotal	1.7	11.8	0.0	
					Personnel Total	$12.9

Description	Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 1999
SD/ANC/SD	0.5	1	3	0.1	0.8
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.8

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: Coastal Resources Associates, Inc.
USGS-BRD contractor

FY 00

FORM 4B
Personnel
& Travel
DETAIL

4/15/99

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

	Proposed FY 1999
Contractual Total	$0.0

	Proposed FY 1999
Commodities Total	$0.0

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: Coastal Resources Associates, Inc.
USGS-BRD contractor

FY 00

FORM 4B
Contractual & Commodities DETAIL

4/15/99

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

	Number of Units	Unit Price	Proposed FY 1999
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
		New Equipment Total	$0.0

	Number of Units	

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: Coastal Resources Associates, Inc.
USGS-BRD contractor

FORM 4B
Equipment
DETAIL

4/15/99

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 99	Proposed FY00	LONG RANGE FUNDING REQUIREMENTS					
Personnel	$43.2	$16.6						
Travel		$0.0						
Contractual		$0.0						
Commodities		$0.0						
Equipment		$0.0						
Subtotal	$43.2				Estimated FY 2001	Estimated FY 2002		
General Administration	$8.3	$4.2						
Project Total	$51.5	$20.8						
Full-time Equivalents (FTE)		0.2						
	Dollar amounts are shown in thousands of dollars.							
Other Resources								

General Administration is calculated at 25% per the Trustee Council-UAF agreement.

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: Ak. Dept. Fish and Game Contractor-University of Alaska, Fairbanks

FORM 4A
Non-Trustee
SUMMARY

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

Name	Position Description		Months Budgeted	Monthly Costs	Overtime	Proposed FY 1999
Stephen Jewett	marine biologist		2.0	16.6		33.2
		Subtotal	2.0	16.6	0.0	
					Personnel Total	$33.2

Description	Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 1999
		0			0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: AK. Dept. Fish and Game contractor- University of Alaska, Fairbanks

FORM 4B Personnel & Travel DETAIL

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

	Proposed FY 00
Contractual Total	$0.0

	Proposed FY 00
Commodities Total	$0.0

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: AK. Dept. Fish and Game contractor-University of Alaska, Fairbanks

FORM 4B
Contractual & Commodities DETAIL

2000 EXXON VALDEZ TRU : COUNCIL PROJECT BUDGET

October 1, 1999 - September 30, 2000

	Number of Units	Unit Price	Proposed FY 1999
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
New Equipment Total			$0.0

	Number of Units	

FY 00

Project Number: 00025
Project Title: Mechanisms of Impact & Potential Recovery of Nearshore Vertebrate Predators
Name: AK. Dept. Fish and Game Contractor: University of Alaska, Fairbanks

FORM 4B
Equipment
DETAIL

Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the *Exxon Valdez* Oil Spill and Large Spawning Escapements: A Proposal to Publish Key Findings

Submitted Under the BAA
Announcement No. 52ABNF900033

Project Number:	00048-BAA
Restoration Category:	Monitoring and Research
Proposer:	Dr. Gregory T. Ruggerone Natural Resources Consultants, Inc. Dr. Donald E. Rogers Fisheries Research Institute University of Washington
Lead Agency:	NOAA
Duration:	Oct. 1, 1999 to Sept. 30, 2000
Cost FY 00:	$9,640
Geographic Area:	Kenai River, Akalura Lake, Red Lake, Chignik, North Pacific Ocean
Injured Resource:	Sockeye salmon from Cook Inlet, Kodiak Island, and Chignik

ABSTRACT

EVOS funded research by Ruggerone and Rogers (1998) demonstrated that large spawning escapements can have long-term impacts on sockeye growth and adult returns. The findings have new and important consequences for stock-recruitment modelling, which is the basis for determining escapement levels that allow for maximum sustained harvests. The research also demonstrated that marine growth of sockeye salmon increased after the mid-1970s, corresponding to the increase in salmon production throughout Alaska and the ocean regime shift that has impacted numerous species. The proposed request for funding will enable us to prepare two manuscripts for publication in peer-reviewed journals.

INTRODUCTION

Several sockeye salmon systems received exceptionally large spawning escapements as a result of the 1989 *Exxon Valdez* oil spill and management decisions to prohibit harvested of potentially contaminated salmon. Considerable concern was expressed regarding potentially adverse effects of the large escapements, including reduced growth of offspring, reduced survival, and lower production of adult salmon. However, few data were available in these systems prior to the oil spill for comparison to conditions after the spill.

Through EVOS funded research (Project 96048), we measured growth patterns of adult sockeye salmon scales to develop a historical index of sockeye growth during each life stage (freshwater and marine) for the period encompassing runs during 1970-1997 (1952-1997 for Chignik sockeye) (Ruggerone and Rogers 1998). Previous research had shown high correlation between scale growth and sockeye growth in freshwater.

The EVOS funded research led to the following conclusions:

- Large spawning escapements in 1989 led to reduced growth of offspring in the Kenai system, Akalura Lake (Kodiak), and Red Lake (Kodiak).
- The large escapements in 1989 affected growth up to 3 years post-spill.
- Large escapements affected growth of yearling sockeye from the 1988 brood, which co-inhabited the lakes with subyearlings from the 1989 brood.
- Although sockeye growth in the lakes recovered to historical levels, growth has been highly unstable following the oil spill
- Adult sockeye returns were correlated with freshwater growth
- The interaction between brood years has important consequences for stock-recruitment modeling
- Sockeye runs to Central Alaska during 1952-1997 were correlated with marine growth during first two years at sea for sockeye spending three years in the ocean. The marine growth pattern recorded on sockeye scales corresponds to the regime shift that occurred in the North Pacific Ocean during the mid-1970s (Rogers 1984, Beamish and Boullion 1993, Francis and Hare 1994) (see Figure 1).

The demonstration of interaction between adjacent sockeye year classes has important consequences for stock-recruitment modelling, which is the basis for estimating spawning escapement levels in Alaska. Interaction was demonstrated in the Kenai system, Red Lake, and Akalura Lake. The sockeye scale growth results are consistent with field studies conducted by the Alaska Department of Fish and Game in the Kenai River system. Interactions between adjacent brood years has not been previously demonstrated. Thus, stock-recruitment modelling should not only incorporate the parent spawning level, but it should also incorporate previous and subsequent spawning levels. This important finding was highlighted by Dr. Mundy during his presentation of fisheries projects funded by EVOS at the 1999 10-year anniversary conference in Anchorage.

A summary of the sockeye growth investigation funded by EVOS is attached.

STUDY PURPOSE

The purpose of the request for funds is to enable preparation of two manuscripts for publication in peer-reviewed journals. EVOS reviewers of the Restoration Report recommended that we publish the results of the investigation so that the results could be reached by a wider audience. Possible titles and journals for the manuscripts are:

Effects of Large Spawning Escapements on Growth and Adult Returns of Sockeye Salmon: Consequences for Salmon Management. North American Journal of Fisheries Management

Marine Growth and Adult Returns of Sockeye Salmon Reflect the mid-1970s North Pacific Ocean Regime Shift. Canadian Journal of Fisheries and Aquatic Sciences

NEED FOR THE PROJECT

The EVOS funded study conducted by Ruggerone and Rogers (1998) has significant implications for salmon management and also provides key information regarding marine conditions that affect long-term trends in salmon production in Alaska. Recent oceanographic changes and failed salmon runs in western Alaska suggest a new ocean regime may be developing. This study identifies a key variable (salmon growth during the early marine period) that reflects ocean condition. Without adequate funding to prepare manuscripts, these EVOS findings will not be made available to a wide audience that is provided by publication in scientific journals.

Study Location

The geographical areas that will be investigated include the Kenai River system in Cook Inlet, Red Lake and Akalura Lake on Kodiak Island, and Chignik and Black lakes on the Alaska Peninsula, and the North Pacific Ocean.

Cooperating Agencies

The proposed project is a continuation of project 96048, which was a joint effort between Natural Resources Consultants (NRC) and Fisheries Research Institute (FRI), University of Washington. ADF&G provided sockeye scales collected from the nine sockeye populations. ADF&G also shared biological data that was collected in the Kenai and Kodiak sockeye lakes.

The manuscripts have important consequences for sockeye management because they show spawning escapements can have long-term effects on growth and adult returns, a result that should be incorporated into stock-recruitment modelling. Further, the study found that the large increase in Alaska salmon production in Alaska was related to increased growth of sockeye salmon beginning in the mid-1970s.

SCHEDULE

Project Milestones and Endpoints

December 1999:	Submit papers for publication
September 2000:	Manuscripts published

Completion Date

September 2000

PROFESSIONAL CONFERENCES

Dr. Ruggerone presented results of this study at the 10 year anniversary *Exxon Valdez* oil spill conference in Anchorage during March 1999. He also presented the study during the 1998 *Exxon Valdez* restoration conference in 1998.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

This study is complementary to the overescapement studies conducted by ADF&G on Kenai River system, Akalura Lake, and Red Lake. Much of the information collected by these ADF&G projects were shared with NRC and incorporated into the synthesis of findings.

PRINCIPAL INVESTIGATORS

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PERSONNEL

The manuscripts will be conducted by Dr. Gregory T. Ruggerone, Natural Resources Consultants, and Dr. Donald E. Rogers, Fisheries Research Institute, University of Washington. Both Ruggerone and Rogers have extensive first-hand experience with interpretations of scale measurements and have published several papers involving sockeye salmon scales, density-dependent growth at sea, and salmon abundance.

Dr. Gregory T. Ruggerone was the primary author of the EVOS study and he will prepare the manuscripts. He has published a number of manuscripts in peer-reviewed journals. He was Project Leader of the Alaska Salmon Program, University of Washington, during the late 1980s and early 1990s until becoming Vice-President of Natural Resources Consultants. He continues (since 1984) to manage research at the University of Washington's field station at Chignik. He assists the University of Washington with run size forecasts of Bristol Bay sockeye salmon. In the mid-1990s, he incorporated the brood year interaction term described in this sockeye growth study while estimating MSY escapement levels for Kenai River sockeye salmon.

Dr. Donald E. Rogers, University of Washington, will edit and review the manuscripts. Dr. Rogers has over 35 years experience with sockeye salmon in Alaska. He has been the chairperson of five graduate students whose theses were based on scale measurements.

LITERATURE CITED

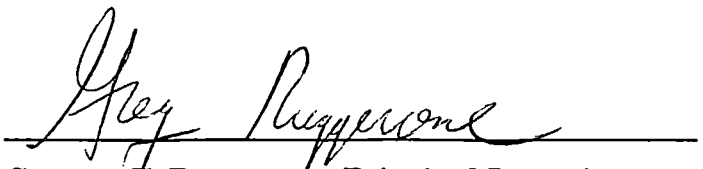
Beamish, R, J., and D. R. Boullion. 1993. Pacific salmon production trends in relation to climate. Canadian Journal of Fisheries and Aquatic Sciences 50:1002-1016.

Francis, R. C, and S. H. Hare. 1994. Decadal-scale regime shifts in the large marine ecosystems of the Northeast Pacific: a case for historical science. Fisheries Oceanography 3:279-291

Rogers, D.E., 1984. Trends in abundance of northeastern Pacific stocks of salmon, In: W.G. Pearcy (Editor), The Influence of Ocean Conditions on the Production of Salmonids in the North Pacific. Oregon State University Press, pp. 100-127.

Rogers, D.E., and G.T. Ruggerone. 1993. Factors affecting the marine growth of Bristol Bay sockeye salmon. Fisheries Research. 18: 89-103.

Ruggerone, G.T. and D.E. Rogers. 1998. Historical analysis of sockeye salmon growth among populations affected by large escapement in 1989. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 96048-BAA), Natural Resources Consultants, Seattle, WA.



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April 9, 1999
Date prepared

Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the *Exxon Valdez* Oil Spill and Large Spawning Escapements

Restoration Project 96048-BAA

Final Report

EXECUTIVE SUMMARY

Several sockeye salmon systems received exceptionally large spawning escapements as a result of the 1989 *Exxon Valdez* oil spill and management decisions to prohibit harvested of potentially contaminated salmon. Public concern was expressed regarding potentially adverse effects of the large escapements, including reduced growth of offspring, reduced survival, and lower production of adult salmon. River systems receiving large escapements include the Kenai River in Cook Inlet, Red Lake and Akalura Lake on Kodiak Island, and Chignik Lake on the Alaska Peninsula. Although comprehensive field studies were initiated as a result of the 1989 spill, relatively few data had been previously collected in most systems. Furthermore, scientists suggested that oil contamination in Prince William Sound may have exacerbated the decline of Coghill Lake sockeye salmon.

We measured growth patterns recorded on returning adult sockeye salmon scales, which are routinely collected by ADFG, to develop a historical index of sockeye growth during each life stage (freshwater and marine). These data were compared to spawning escapements during 1965-1992 (i.e., runs 1970-1997) in order to evaluate escapement effects on sockeye growth in nursery lakes. Previous research had shown high correlation between scale growth and sockeye growth in freshwater. Scale growth of Coghill Lake sockeye salmon, which migrated through Prince William Sound in 1989, was examined for indications of reduced growth during the first year at sea.

We measured scales from ten sockeye salmon stocks during each year of return, 1970 to 1997. For each stock and each year, we measured up to 100 scales from

the dominant age group (age 1.3 for most stocks). In addition to the stocks listed above, we measured scales from Kasilof River, Black Lake, Bear Lake, and Nushagak Bay since these stocks were not affected by large escapements in 1989. Selected sockeye scales were measured on the Optical Pattern Recognition System (OPRS), which consists of a high resolution video camera mounted on a microscope and controlled by a computer program.

Kenai River, Upper Cook Inlet

The *Exxon Valdez* (1989) oil spill contributed to the large spawning escapement (1.38 million) that was approximately 2.5 times the management goal of 400,000 to 700,000 fish. This large escapement followed large escapements in 1988 (0.9 million) and 1987 (1.4 million), the year of the *Glacier Bay* oil spill in Upper Cook Inlet. These large escapements led to low freshwater scale growth of offspring compared to the historical average. Growth recovered to historical levels in brood year 1991, two years following the *Exxon Valdez* oil spill, but a moderately high escapement in 1992 lead to exceptionally low growth suggesting the Kenai River system may now be less stable. Multiple regression analysis indicated freshwater growth was influenced by the size of both parent spawning escapement and prior escapements. Adult sockeye return to the Kenai system was positively correlated with greater parent spawning escapement and to greater growth in freshwater, suggesting that continuously large spawning escapements that adversely affect growth of future sockeye fry may lead to somewhat smaller adult returns. The brood (1982) having the greatest growth in freshwater also produced the largest run (1987) to the Kenai River. Additional research is needed to examine the tradeoffs between spawning escapement, juvenile sockeye growth, adult return, and maximum sustained harvests in the Kenai system.

Red Lake, Kodiak Island

The oil spill contributed to an escapement of 768,000 sockeye salmon into Red Lake, approximately three times the escapement goal. This large spawning escapement led to reduced growth of juveniles during the first and second years in Red Lake. Growth of fry from the 1990 brood (second year following the spill), which co-

inhabited the lake with yearlings from the 1989 brood, remained low compared to historical averages. Sockeye growth recovered during the third rearing season following the spill as both fry and yearling sockeye reached historical size levels. However, growth during the next two years (1991 and 1992 broods) was low compared to the historical average even though parent escapements were moderate, suggesting that Red Lake may be less stable following the large 1989 escapement. Regression analysis did not reveal a consistent relationship between spawning escapement and juvenile growth during the 28 year sampling period, although growth of fry and yearlings co-inhabiting the lake was highly correlated. Multiple regression analysis indicated adult sockeye return to Red Lake was positively correlated with parent escapement, growth during the first year in Red Lake, and growth during the first year at sea.

Akalura Lake, Kodiak Island

The 1989 escapement of 116,000 sockeye salmon into Akalura Lake was more than twice the escapement goal. Growth of fry from the 1989 brood and yearlings from the 1988 brood, which co-inhabited Akalura Lake in 1990, was the lowest of the 12 year observation period. Below average growth continued until it reached average levels during the fourth growing season (1993) after the spill. Multiple regression analysis indicated cumulative sockeye growth in the lake was negatively related to parent spawning escapement and escapement during the following year (i.e. adverse effect on yearlings), and positively related to average spring air temperature on Kodiak Island. Examination of adult runs since 1986 suggests the large escapement in 1989 and corresponding reduced juvenile growth may have influenced the relatively low run sizes during 1994-1996, i.e., years corresponding to escapements during 1989-1992. The 1997 run has yet to be estimated by ADFG.

Chignik Lake, Southern Alaska Peninsula

The moderately large spawning escapement in Chignik Lake during 1989 did not appear to affect growth of juveniles and the corresponding adult return was 40% above the recent 10 year average. Regression analysis did not reveal correlation between spawning escapement and growth in the lake, but spawning escapements

have not varied much during the past 27 years. Field research indicated that the emigration of Black Lake sockeye to Chignik Lake adversely affects adult returns to Chignik Lake. Adult returns were not correlated with growth in freshwater, but adult runs to the Chignik system during 1952-1997 were positively correlated with growth during the first two years at sea, as discussed below.

Coghill Lake, Prince William Sound

We could not detect an effect of oil in Prince William Sound on annual marine growth of sockeye that migrated through the Sound in 1989. Analysis of growth in Coghill Lake did not reveal an adverse effect of the exceptionally large escapements during 1980-1982. However, freshwater growth declined steadily from brood years 1983 to 1988, encompassing a period of large escapements (1985 and 1987) and exceptionally low adult returns from the 1985-1990 brood years. During 1976-1992, growth in freshwater was negatively correlated with annual precipitation at Valdez. Multiple regression analysis indicated adult return to Coghill Lake was positively related to spawning escapement, negatively related to precipitation during the smolt migration period, and negatively related with average snow depth prior to the smolt migration period. These data suggest lake turbidity, which likely increases with runoff in this glacial lake, and food availability immediately prior to seaward migration might influence survival.

Marine Growth and Sockeye Run Size

Marine scale growth among the 10 sockeye stocks was examined to test whether growth at sea was correlated between stocks. The number of significant marine scale growth correlations (positive) among the stocks (up to 45 correlations) increased from 20% during the first year at sea, to 60% during the second year, to 100% during the third year (6 stocks). During the first year at sea, Bristol Bay sockeye stocks tended to be negatively correlated with stocks adjacent to the Gulf of Alaska, although most of these correlations were not statistically significant. These trends may reflect local differences in marine growing conditions in areas adjacent to natal freshwater systems and a tendency for the stocks to disperse and mix with other stocks in subsequent years.

Scale measurements of Chignik sockeye were made from runs during 1952 to 1997, a time period encompassing both low and high salmon runs. Scale growth during the first two years in the ocean was positively correlated with both sockeye run size to the Chignik system and with sockeye run size to Central Alaska (Fig. 1). Consistently higher growth at sea began in the mid-1970s, a time period corresponding to warmer sea-surface temperatures during winter and to greater salmon runs throughout Alaska. The distinct increase in salmon growth at sea is also correlated with population changes of a variety of marine species, including Steller sea lion, forage fishes, and cod.

Conclusions

This study demonstrated that large escapements related to the *Exxon Valdez* oil spill contributed to reduced growth of sockeye salmon rearing in the Kenai River system, Akalura Lake, and Red Lake, but not in Chignik Lake. Although sockeye scale growth reached average levels two to four years after the oil spill, growth of sockeye in the Kenai River system and in Red Lake appeared to be less stable in response to moderate escapement levels after the large 1989 escapement. This result suggests large escapements may continue to have an adverse effect on sockeye growth even after growth reaches average levels following average spawning escapements. Furthermore, the large escapements in each of these systems contributed to reduced growth of sockeye salmon originating from adjacent brood years. This finding of brood year interaction has important implications for stock-recruitment modeling, which is the primary tool for determining spawning escapements goals and establishing harvest rates.

Table 1. Summary of results obtained in the study of sockeye salmon scales. NR = not relevant. Blank indicates topic was not evaluated.

Stock	Parent escapement effect on growth	Escapement effect on following brood(s)	Escapement effect on previous brood	Recovered from large escapement	Density-independent factors affect growth	Density-independent factors affect adult return	Adult return related to freshwater growth	Adult return related to escapement	Marine growth related to adult return	Oil in PWS affects marine growth
Stocks influenced by the 1989 oil spill										
Kenai R.	Yes	Yes		yes?, BY 1991 growth now appears less resistent to large escapements	No	No	Yes (+)	Yes (+)	Yes (+), 3rd yr	
Red Lake	Not consistent	Yes	Yes	Yes?, 3rd yr after spill, growth now appears less resistent to moderate escapements	Yes, winter air temp.	No	Yes (+)	Yes (+)	Yes (+), 1st yr	
Akalura Lake	Yes	Yes	Yes	Yes, 4th yr after spill, but only one datum	Yes, spring air temp.	No	Yes (+)	?	?	
Chignik Lake	No	No	No	Yes	No	No	No	No, Black Lake interaction	Yes, 1st two yrs	
Coghill Lake	No, cyclic	Not consistent		NR	Yes, rain (-)	Yes, rain (-) snow (-)	Yes (+)	Yes (+)		Not detected
Stocks not directly influenced by the 1989 oil spill										
Kasilof R	Yes?	Yes?		NR						
Black Lake	No	No		NR					Yes, 1st two yrs	
Bear Lake	No	No	No	NR						
Nushagak Bay	No	No		NR						

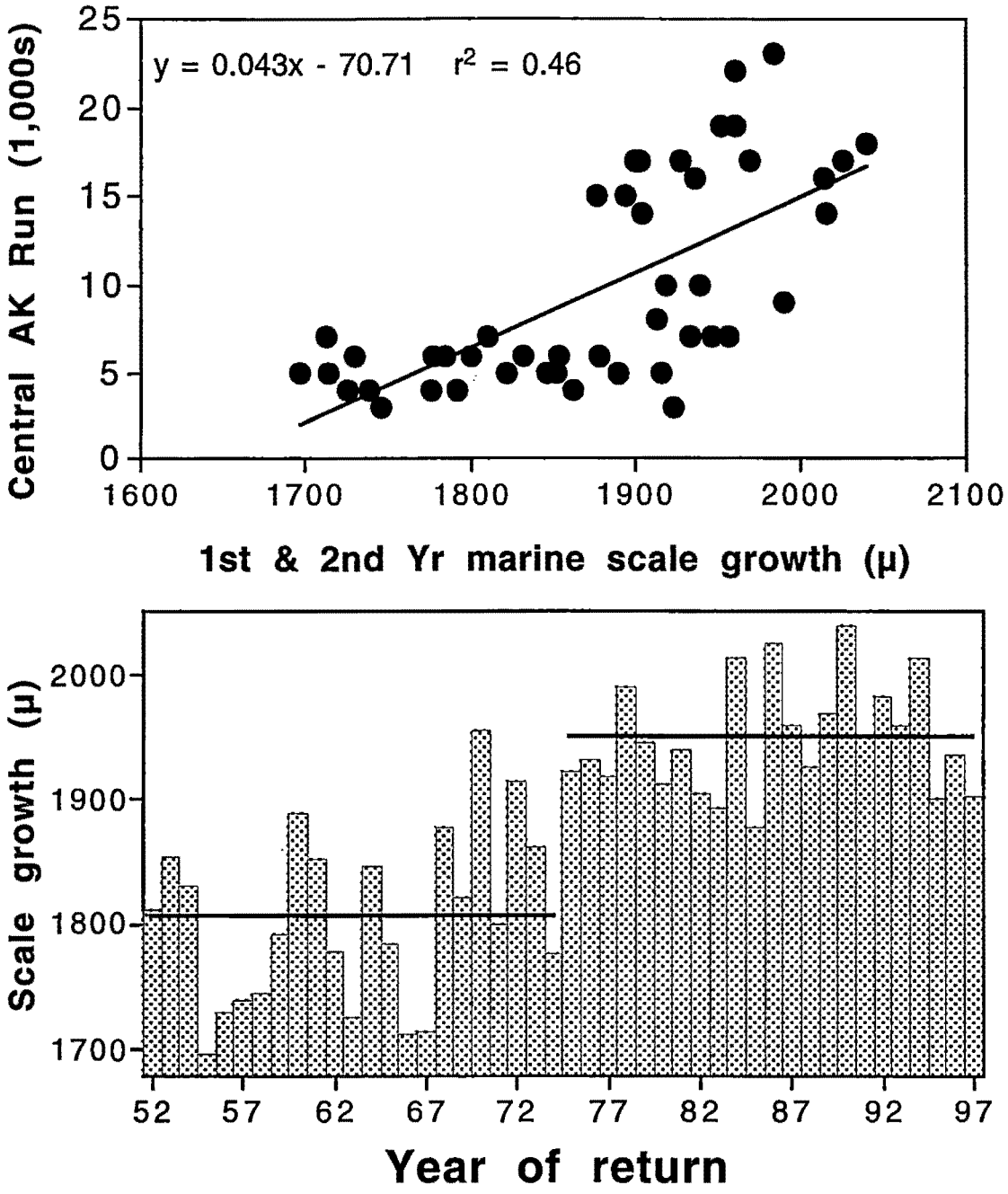

Fig. 1. Relationship between sockeye salmon run size to Central Alaska and incremental scale growth during first and second years at sea of sockeye spending three years at sea (upper graph). Time series of marine growth measurements is shown in bottom graph. Source: Ruggerone and Rogers 1998.

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Budget Category:	Authorized FY 1999	Proposed FY 2000
Personnel		$6.100
Travel		$0.000
Contractual		$1.000
Commodities		$0.000
Equipment		$0.000
Subtotal	$0.0	$7.100
Indirect		$2.540
Project Total	$0.0	$9.640
Full-time Equivalents (FTE)		0.1

LONG RANGE FUNDING REQUIREMENTS

Estimated FY 2001	Estimated FY 2002
$0.0	$0.0

Dollar amounts are shown in thousands of dollars.

Other Resources

Comments: Indirect rates: NRC: 39.43% of personnel, 5% ofcontractual (publication charges) & Rogers, Rogers: 48.5% of total direct. Indirect costs include office rent and general operating expenses and project accounting and billing.
Indirect cost is 26.3% of project total.
Fringe benefits, such as FICA and health insurance, are included in the personnel rates of Ruggerone and Rogers.

FY00

Prepared: April 6, 1999

Project Number: 00048-BAA
Project Title: Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the Exxon Valdez Oil Spill
Name: Natural Resources Consultants, Inc.

FORM 4A
Non-Trustee
SUMMARY

2000 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Personnel Costs: Name	Position Description		Months Budgeted	Monthly Costs	Overtime	Proposed FY 2000
G. Ruggerone, Ph.D.	Principal Investigator		0.60	8.66	0.0	5.196
						0.0
D. Rogers, Ph.D.	Co-Principal Investigator		0.08	10.8	0.0	0.864
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		0.7	19.5	0.0	
					Personnel Total	$6.1

Travel Costs: None Description	Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 2000
					0.0
None					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY00

Prepared: April 6, 1999

Project Number: 00048-BAA
Project Title: Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the Exxon Valdez Oil Spill
Name: Natural Resources Consultants, Inc.

FORM 4B
Personnel
& Travel
DETAIL

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

Contractual Costs: None	Proposed FY 2000
Description	
Publication page charges (estimated)	0.96
Contractual Total	$1.0

Commodities Costs: None	Proposed FY 2000
Description	
None	
Commodities Total	$0.0

FY00

Prepared: April 6, 1999

Project Number: 00048-BAA
Project Title: Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the Exxon Valdez Oil Spill
Name: Natural Resources Consultants, Inc.

FORM 4B
Contractual & Commodities DETAIL

2000 EXXON VALDEZ TRU COUNCIL PROJECT BUDGET
October 1, 1999 - September 30, 2000

New Equipment Purchases: None Description	Number of Units	Unit Price	Proposed FY 2000
None			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	$0.0

Existing Equipment Usage: None Description	Number of Units	
None		

FY00

Prepared: April 6, 1999

Project Number: 00048-BAA
Project Title: Historical Analysis of Sockeye Salmon Growth Among Populations Affected by the Exxon Valdez Oil Spill
Name: Natural Resources Consultants, Inc.

FORM 4B
Equipment
DETAIL