Draft Fiscal Year 1995 Work Plan Summary

Prepared by:

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> August 1994

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Draft Fiscal Year 1995 Work Plan

Summary



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EXXON VALDEZ OIL SPILE TRUSTEE COUNCIL ADMINISTRATIVE RECORD

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JOHN A. SANDOR Commissioner Alaska Department of Environmental Conservation

August 1994

Dear Reviewer:

We are pleased to present you with the Exxon Valdez Oil Spill Trustee Council's Draft Fiscal Year 1995 Work Plan — Summary. This document describes restoration activities under consideration for implementation in federal fiscal year 1995 (October 1, 1994 through September 30, 1995). The Trustee Council has not decided which of these projects they believe should be a part of the 1995 restoration program. When they make their decision in late October 1994, they will be using comments from the general public and the Public Advisory Group as well as the recommendation of the Executive Director. You can help the Trustee Council by reviewing this draft work plan and letting them know your priorities for 1995. For the Trustee Council to use your comments in its decision making, your comments must be postmarked by OCTOBER 3, 1994 and sent to the following address:

Exxon Valdez Oil Spill Trustee Council 645 G Street Anchorage, Alaska 99501 Attn: Draft Fiscal Year 1995 Work Plan

A teleconferenced public hearing will be held at 7 p.m. on Wednesday, SEPTEMBER 28, 1994, in order to take additional public comment. Access to the teleconference will be available to residents in all the communities and villages in the oil spill region. (Contact an Alaska Legislative Information Office or L.J. Evans at the Trustee Council Office at 278-8012 for information about participating in the teleconferenced hearing.)

Potential projects for implementation in 1995 were solicited in the *Invitation to Submit Restoration Projects for Fiscal Year 1995* (May 1994). As Executive Director, I have conducted a preliminary review of these proposals with the assistance of the Restoration Work Force, the Chief Scientist, and a group of independent scientists. Proposals were assessed for their scientific and technical merit and potential restoration benefit. Some proposals also received a preliminary legal review. All 172 proposals submitted have been organized into one of six evaluation categories in order to provide more meaningful information to the public.

These evaluation categories should be viewed as preliminary. As a result of further review, it is possible that some of those proposals identified as having high restoration benefit will not be funded. Some proposals initially identified as having policy or legal concerns may have those issues resolved and end up being funded. Not all project proposals have received legal review, and some projects which have not been identified as having legal concerns may be categorized that way after further review.

Let me also mention that the court provided authorization for reimbursement of certain costs incurred by state and federal agencies. We anticipate reimbursement costs of \$10 million during FY 95. Reimbursement of these costs is authorized by the Memorandum of Agreement and Consent Decree entered by the court. These costs are not part of the *Draft Fiscal Year 1995 Work Plan*.

The Draft Fiscal Year 1995 Work Plan is organized as follows:

Executive Summary - summarizes the overall 1995 proposed work plan effort.

Chapter 1 - gives background information on the *Exxon Valdez* oil spill, the resources and services injured by the spill, and other information that may be useful in your review.

Chapter 2 - provides, by restoration category, a discussion of those proposed projects that have been identified, on a preliminary basis, as having a higher priority, as well as those that raise legal or policy issues.

Appendix A - provides summary information on all project proposals and explanatory notes regarding their evaluation category, cost, and other information.

Appendix \mathbb{B} - provides information, organized by injured resource and service, about all proposed projects.

When reviewing the information contained in this summary volume, we ask that you keep in mind these major questions:

- Benefit to Restoration In order to be considered for funding, project proposals must have a clear relationship to an injured resource or service, must assist in meeting the recovery objective for that resource or service, and must have a potential benefit to restoration of an injured resource or service. Appendix B organizes all of the project proposals by resource or service. When reviewing these proposals, it would be useful to examine them from a benefit/cost perspective. Is there an actual benefit to an injured resource or service? Is the potential benefit worth the cost?
- Financial Sustainability Many restoration activities, especially research and monitoring, require a long-term commitment in order to provide useful and meaningful information. When reviewing these proposals, it is important to keep in mind whether these efforts can be financially sustained over the long term.
- Project Balance What are your thoughts about the appropriate mix of research, monitoring, habitat protection and acquisition, the restoration reserve, and general restoration projects included in this draft work plan? Do you have an opinion regarding the priority or the funding level of the various projects and/or of the various restoration categories?

Letter to Reviewers

Competition - Although most restoration projects have been undertaken by state or federal agencies, the Trustee Council encourages competitive proposals. The number of competitive contracts awarded to nongovernmental agencies has increased each year and is anticipated to increase. In 1994, we are experimenting with several competitive methods that we hope may be useful in the future. When reviewing these proposals, please consider whether you believe they are an appropriate activity for a government agency, or whether a competitive process involving non-Trustee agencies should be used.

Other Documents Available for Review. There are additional details and information that may be useful during your review process. Two other documents, plus additional copies of this *Summary*, are available for distribution by calling the Anchorage Restoration Office at (907) 278-8012 (toll free within Alaska at 1-800-478-7745, or from outside Alaska at 1-800-283-7745):

- © Supplement Volume I contains brief descriptions of each of 93 projects contained in evaluation categories 1 and 2.
- © Draft Restoration Plan (November 1993) contains general policies and guidance for restoration actions. Until a Final Restoration Plan is adopted, the Trustee Council is using the information in the Draft Restoration Plan to help select projects for the Draft Fiscal Year 1995 Work Plan.

Additional information, collected in three-ring binders, is available for review at the Anchorage Restoration Office, as well as at libraries and Legislative Information Offices throughout the spill area:

- © Supplement Volume II contains project descriptions for all other projects submitted for consideration and not included in Supplement Volume I.
- Supplement Volume III contains additional budget information.

Individual project descriptions or budgets may also be requested by calling the Restoration Office.

I appreciate your interest and look forward to your participation in this review process. Please don't hesitate to call the Anchorage Restoration Office (278-8012) if you have questions.

Sincerely, (James R. Ayers

Executive Director Exxon Valdez Oil Spill Trustee Council

Letter to Reviewers

DRAFT FISCAL YEAR 1995 WORK PLAN Summary

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Draft Fiscal Year 1995 Work Plan

EXECUTIVE SUMMARY

INTRODUCTION

In 1991, a \$900 million court-approved civil settlement was reached to settle civil lawsuits brought by the U.S. government and the State of Alaska against Exxon Corporation for the 1989 *Exxon Valdez* oil spill. The purpose of the civil settlement is to restore the resources and services (human uses) injured by the spill.

The Trustee Council will decide in late October 1994 which activities should be conducted with funding from the civil settlement funds during the federal fiscal year 1995 (FY 95). The purpose of this *Draft Fiscal Year 1995 Work Plan — Summary* document is to present information concerning projects that have been proposed for funding by the Trustee Council in order to solicit public comment on what to include in a final work plan. This public comment, additional review by the Trustee Council's Public Advisory Group and further technical, scientific and legal review, will be used to prepare a formal recommendation for final action by the Trustee Council.

One hundred and seventy-two projects with a combined FY 95 cost greater than \$71 million were submitted. The Executive Director, with the assistance of independent scientists and agency staff, conducted a preliminary review of the projects. Proposals were organized into the following restoration categories:

- Research
- Monitoring
- General Restoration
- Habitat Protection and Acquisition
- Administration, Science Management, and Public Information
- Restoration Reserve

In addition, each project was initially assigned to one of six evaluation categories, although these categorizations may change with further review. The categories are:

- Category 1, Priority Projects projects that appear to have high restoration benefit, strong technical merit and are generally responsive to the Invitation to Submit Restoration Projects for Fiscal Year 1995.
- Category 2, Second Priority projects that appear to be permissible under the settlement but are of a lower priority for funding in FY 95, and may require further development.

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- Category 3, Low Priority projects that were found to be incomplete, lacking a clear relationship to restoration, of low technical merit or otherwise of a low priority for restoration.
- Category 4, Legal or Policy Issues projects with significant legal or policy issues or concerns associated with the proposal.
- Category 5, Closeout "closeout" projects from FY 94 (i.e., sample and data analysis and report writing efforts associated with projects from 1994).
- Category 6, Carry-forward "carry-forward" projects (i.e., FY 94 projects that were not completed and need to be reauthorized in FY 95).

The categorization of a project in this *Draft Fiscal Year 1995 Work Plan* does not reflect an action or decision on the part of the Trustee Council. Information on each proposed FY 95 project, including a summary abstract of the project, its cost and notes regarding the rationale for the assignment of that project to an evaluation category is provided in Appendix A.

REVIEW OF FY 95 PROJECT PROPOSALS

The Trustee Council has endorsed a comprehensive, balanced approach to the restoration of injured resources and services in the spill area which is reflected in this draft work plan. This approach recognizes the importance of research to determine why resources are not recovering, or are recovering only slowly, and recognizes the need for monitoring to track the status of recovery. It provides for cost-effective general restoration activities, especially those that help the resources upon which communities and industries depend. Additionally, it recognizes the importance of habitat protection and acquisition as an essential component of the overall effort to ensure the recovery of injured resources and services.

A comprehensive, balanced approach to restoration requires an element of administration, science management, and public information to administer restoration activities and keep the public informed about restoration efforts. Finally, the Trustee Council has recognized the need to provide for long-term support of restoration activities beyond the time of Exxon's last payment in the year 2001. The Restoration Reserve serves as a repository for funds to be used at a later date.

RESEARCH

The research proposals contained in the *Draft Fiscal Year 1995 Work Plan* include multi-year efforts to find out why some resources are not recovering or are recovering only slowly. The Trustee Council recognizes that resource-specific research is not always adequate, that restoration issues are complex, and that research must often take a long-term ecosystem approach to better understand what factors control the recovery of injured resources.

Research proposals submitted for the FY 95 Work Plan include five groups of projects. While there are also other proposed research projects, these five groups comprise a majority of the proposed research program. Together, they would examine many of the possible spill-caused problems as well as major natural forces that may be constraining recovery of the resources injured by the oil spill.

- What is causing the failure of Prince William Sound (PWS) herring and pink salmon runs? A combination of projects, collectively referred to as the Prince William Sound System Investigation, focus on pink salmon and Pacific herring, two species especially important to the commercial fishing economy and subsistence communities in PWS. The FY 1995 Draft Work Plan includes proposals to continue this multi-year research program in order to understand the natural and spill-related factors that are controlling the health and populations of PWS pink salmon and herring. The results of this research may be important for managing these fisheries and protecting damaged wild fish stocks. The program began in 1994, and twelve priority projects in this draft work plan have been proposed to continue at a cost of approximately \$4.75 million in FY 95.
- What is causing the long-term decline in some marine mammals and seabirds? Since the mid-1970s, a variety of marine mammals and seabirds that feed in the waters of the northern Gulf of Alaska and Prince William Sound have been declining. These include harbor seals, marbled murrelets, and pigeon guillemots. This draft work plan includes a collection of three projects that would begin a multi-year research program initially focused on harbor seals. To be successful, this research group requires information from the Forage Fish Investigations described below.
- Is food limiting recovery of injured resources? Forage fish are the small fish such as capelin, juvenile pollock, juvenile salmon, and herring that serve as a food resource for many injured resources such as pelagic-feeding seabirds, and harbor seals. Some of the forage fish species (herring and pink salmon) are known to have been injured by the spill. For others, the effects of the spill are largely unknown. Many scientists suspect that the oil spill or natural factors may have changed the abundance and distribution of forage fish and that these changes may be constraining recovery of some of the injured resources. Investigation of this hypothesis could have important implications for restoration of injured resources. A pilot forage fish study was funded in 1994, and

proposals in this draft work plan would substantially expand that effort. The proposed research effort will likely require a minimum of three to five years to complete.

- What is limiting recovery in the nearshore ecosystem? Nearshore areas of the spill area remain the repository of significant quantities of oil spilled by the *Exxon Valdez*. The draft work plan includes several proposed projects that address issues pertaining to injury and recovery of the nearshore ecosystem. One portion of the proposed studies uses an ecosystem approach to assess the recovery of certain vertebrate predators that feed in this area sea otters, pigeon guillemots, and black oystercatchers. Another portion of these studies would investigate the changes that the oil spill may have caused in the community of small intertidal and subtidal organisms that normally populate the nearshore area.
- Are the toxic effects of oil still constraining recovery of some resources? Five years after the spill, exposure to oil may still be constraining recovery. This is especially true of pink salmon and herring, and several proposed projects would address the toxic effects of oil on injured resources.

The Category 1 and 2 research projects in this draft work plan total approximately \$13.5 million. How these research projects are prioritized may change as a result of public comment and continued scientific and technical review. In addition, research costs are likely to be reduced as further review identifies overlapping projects and the opportunity for field coordination.

MONITORING

Monitoring the recovery of injured resources and services has been an important part of the restoration process since the spill occurred. Information about recovery is important in designing restoration activities and determining which activities deserve funding. The draft work plan includes a preliminary monitoring schedule which identifies tentative recommendations regarding the type and frequency of monitoring efforts. Proposed Category 1 and 2 monitoring projects would cost a total of approximately \$5.5 million in FY 95.

GENERAL RESTORATION

For many of the injured resources, nature is the main agent of recovery while, for others, effective restoration must await an understanding of what factors are constraining recovery. By contrast, general restoration projects directly manipulate the environment to facilitate restoration, enhance the production of particular resources, provide alternative resources, or protect the recovery of resources that people and communities depend on. Most of the general restoration projects proposed in the *Draft FY 95 Work Plan* are of five types:

- Stock Separation Projects for Fisheries Management. A number of proposed projects would provide information to allow the Alaska Department of Fish and Game, which sets fisheries harvest levels, to implement management actions such as varying the timing and location of fishing to allow a high level of fishing while minimizing the harvest of injured fish stocks, particularly salmon.
- Fish and Shellfish Enhancement. Several general restoration proposals would improve fish habitat, provide new or improved fish runs, or provide for mariculture (shellfish) development. These projects typically propose to provide a replacement for injured resources that would benefit subsistence, commercial, or sport fishermen.
- Archaeological Resources. One general restoration project would complete heritage site protection plans. Once these plans are finished in May 1995, additional archaeological resource projects may be identified for the 1996 work plan. The project would also stabilize and excavate an archaeological site.
- Protecting Resources by Reducing Marine Pollution. Two proposed projects in the draft work plan would protect the natural recovery of resources near communities by reducing marine pollution, especially from oil and other wastes, that might interfere with recovery.
- Subsistence and Recreation Projects. Many proposed general restoration projects address subsistence services and recreation services. In many cases, legal or policy issues must be resolved before these proposals are determined to be eligible for funding under the terms of the court-approved civil settlement. Project proposals must show a clear relationship to the restoration of an injured resource. The civil settlement and policies of the *Draft Restoration Plan* require that a project to restore a service must do so by restoring, replacing, or acquiring the equivalent of an injured resource.

In total, some 65 general restoration proposals were submitted with a total cost of over \$28 million. Nearly half of these projects have important legal or policy issues that must be resolved before they can be considered for funding.

Draft Work Plan

HABITAT PROTECTION AND ACQUISITION

Habitat Protection and Acquisition is an essential element of the Trustee Council's restoration efforts. Proposals in this restoration category include a variety of activities that support the protection and acquisition of habitats important to the recovery of injured resources and services. Projects included in the draft work plan include proposals to fund the technical services needed to identify and evaluate important habitat areas within the spill region and to support negotiations and development of purchase agreements (e.g., parcel evaluations, appraisals, title searches, etc.). Also included is a proposed project to provide technical assistance to private landowners to reduce impacts of ongoing or proposed developments on injured resources.

Proposals concerning the acquisition of specific parcels of land, or interests in land, are *not* the subject of this draft work plan and are being addressed by the Trustee Council through discussions and negotiations with individual landowners in the spill area.

ADMINISTRATION, SCIENCE MANAGEMENT, AND PUBLIC INFORMATION

Funding is required to prepare work plans, provide for independent scientific review, oversee projects and budgets, ensure public involvement, and operate the restoration program. Two projects are proposed at \$4.2 million. This amount includes the first step to develop a program to allow scientists, managers, and the general public greater access to information collected by the restoration program.

RESTORATION RESERVE

Complete recovery from the oil spill will not occur for decades. Scientists have identified a clear need to establish the capability to act in the years following the last payment under this settlement. The *Draft Fiscal Year 1995 Work Plan* includes a proposed second \$12 million payment to the *Exxon Valdez* Restoration Reserve. The first payment was authorized by the Trustee Council as part of the 1994 Work Plan. Additional annual deposits of \$12 million made through 2001 would provide a reserve of \$108 million plus interest. These funds would be used to carry out long-term restoration activities needed after the final payment by Exxon in 2001.

Chapter 1

INTRODUCTION

Background

In 1989, the *Excon Valdez* oil spill contaminated over 1,500 miles of Alaska's coastline. In 1991, the U.S. District Court approved a settlement of civil lawsuits brought by the U.S. government and the State of Alaska against Exxon Corporation for the 1989 *Excon Valdez* oil spill. The terms of the civil settlement required Exxon to pay the United States and the State of Alaska \$900 million over ten years to restore the resources injured by the spill, and the reduced or lost services (human uses) they provide. Under the court-approved terms of the settlement, a Trustee Council made up of three federal and three state members was designated to administer the restoration fund and to restore the resources and services injured by the spill. According to the terms of the settlement:

- Restoration funds must be used "... for the purposes of restoring, replacing, enhancing or acquiring the equivalent of natural resources injured as a result of the Oil Spill and the reduced or lost services provided by such resources..."
- Restoration funds must be spent on restoration of natural resources in Alaska unless the Trustee Council unanimously agrees that spending funds outside of the state is necessary for effective restoration.
- All decisions made by the Trustees, such as a decision to spend restoration funds, must be made by unanimous consent.

Comprehensive, Balanced Approach to Restoration

Since the 1991 settlement, the Trustee Council has been working to restore the resources and services injured by the oil spill. In November 1993, a *Draft Restoration Plan* was released to guide the restoration effort, and a *Draft Environmental Impact Statement* was prepared to analyze the potential environmental impacts of the plan. Public review of these documents ended August 1, 1994. The signing of the Record of Decision for the final environmental impact statement and adoption of a final restoration plan are expected at the end of October 1994. To be eligible for funding, projects must be consistent with the final restoration plan. However, until the final restoration plan is adopted, the Trustee Council is using the information in the *Draft Restoration Plan* to help select projects for funding.

The draft work plan outlines a comprehensive, balanced approach to the restoration of injured resources and services. This approach includes the following basic elements:

- Research;
- Monitoring;
- General Restoration;
- Habitat Protection and Acquisition;
- Administration, Science Management, and Public Information; and
- Restoration Reserve

Resources and Services Injured by the Spill

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

Only restoration projects that are intended to restore the resources or services identified in Table 1 will be considered for funding in 1995 unless new scientific or local knowledge shows that other resources or services experienced a population-level injury or continuing sublethal effect. Currently, the Chief Scientist is evaluating recently submitted information indicating that a number of additional seabird species were injured by the oil spill. If confirmed, these resources will be added to the list of injured resources and services. Restoration actions may address resources not listed in Table 1 if these activities will benefit an injured resource or service. For example, it may be permissible to focus activities on a resource that is not listed in Table 1 if aiding the resource will help a service such as subsistence or commercial fishing, or if it is a necessary part of a research project designed to help understand the injuries to a resource identified in the table. Table 1. Resources and Services Injured by the Spill Resources in the table experienced population-level or continuing sublethal injuries

| AII | I and an Illadimand | | |
|--|---|---|--|
| Biological | Resources | Other | SERVICES |
| Recovering Bald eagle Black oystercatcher Intertidal organisms (some) Killer whale Sockeye salmon (Red Lake) Subtidal organisms (some) Recovery Unknown Clams Cutthroat trout Dolly Varden River otter Rockfish | Not Recovering Common murre Harbor seal Harlequin duck Intertidal org. (some) Marbled murrelet Pacific herring Pigeon guillemot Pink salmon Sea otter Sockeye salmon (Kenai & Akalura systems) Subtidal organisms (some) | Archaeological resources Designated wilderness areas | Commercial fishing Passive uses Recreation and Tourism including sport fishing, sport hunting, and other recreation uses Subsistence |

Competitive Solicitation for Restoration Projects

After the Trustee Council approves funding for 1995 projects in late October, some projects will be carried out by trustee agencies, others by Requests for Proposals or other competitive solicitations, and some projects will be implemented using a combination of techniques. In the past, most restoration projects have been implemented by trustee agencies. However, the number of competitive contracts awarded to nongovernmental agencies has increased each year. Two competitive processes were used on an experimental basis as a part of this draft work plan:

State of Alaska Multi-step Sealed Proposal. In May 1994, the Alaska Department of Fish and Game issued a multi-step sealed proposal (AS 36.30.265) to investigate the role of disease in the mortality of Pacific herring in Prince William Sound. Projects received in response to that solicitation are confidential until a contractor is selected, but a summary and cost estimate are included in this draft work plan as Project 95320S. If Project 95320S is

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funded, a contractor will be selected after October 1994.

Federal Broad Agency Announcement. In May 1994, the National Oceanic and Atmospheric Administration issued a Broad Agency Announcement (BAA, FAC 90-4, Part 35) on behalf of the Trustee Council for research into the recovery problems of pelagicfeeding marine mammals and seabirds. Projects 95117-BAA, 95118-BAA, 95119-BAA, and 95120-BAA were received in response to that solicitation.

The results of these efforts at increasing competition will be assessed for their use and possible expansion in 1996.

Evaluation of Proposed Restoration Projects

The Trustee Council published an *Invitation to Submit Restoration Projects for Fiscal Year* 1995 which asked that projects be submitted by June 15, 1994, to be evaluated for the 1995 Work Plan. One-hundred and seventy-two projects with a total cost of over \$71 million were received in response to the invitation.

The Trustee Council's Chief Scientist coordinated a preliminary scientific and technical review of the projects. The projects were also reviewed by the Executive Director, agency staff, and representatives of the Public Advisory Group. Legal staff provided preliminary review of some proposals to determine the extent to which they comply with the terms of the settlement, and with the definitions and criteria in the *Draft Restoration Plan*. Important criteria used in the preliminary review included:

- the overall merits of the project as demonstrated through (1) understanding of the problem, (2) soundness of the technical approach, (3) innovation and uniqueness of the project, (4) feasibility, and (5) qualifications of the principal investigators;
- the potential contribution of the project to the identified restoration needs; and
- the cost effectiveness of the project.

Using recommendations from the preliminary review, the Executive Director placed proposed projects into six evaluation categories. However, many of the evaluations are likely to change as a result of public review, and continuing staff and scientific analysis. In addition, not all of the projects received legal review. Staff are working to resolve legal and policy issues identified, where possible.

Based on public comment, continuing review, and comments from the Public Advisory Group, the Executive Director will present a revised recommendation to the Trustee Council for action at a meeting in late October. The six evaluation categories are presented below.

- Category 1, Priority Projects projects that appear to have high restoration benefit, strong technical merit, and are generally responsive to the Invitation to Submit Restoration Projects for Fiscal Year 1995.
- Category 2, Second Priority projects that appear to be permissible under the settlement but are of a lower priority for funding in FY 95, and may require further development.
- Category 3, Low Priority projects that were found to be incomplete, lacking a clear relationship to restoration, of low technical merit or otherwise of a low priority for restoration.
- Category 4, Legal or Policy Issues projects with significant legal or policy issues or concerns associated with the proposal.
- Category 5, Closeout "closeout" projects from FY 94 (i.e., sample and data analysis and report writing efforts associated with projects from 1994).
- Category 6, Carry-forward "carry-forward" projects (i.e., FY 94 projects that were not completed and need to be reauthorized in FY 95).

Summary of Projects Submitted for the 1995 Work Plan

Table 2 summarizes the 172 projects submitted for the *Draft Fiscal Year 1995 Work Plan.* The table shows there are 68 projects totalling almost \$37 million within Evaluation

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Category 1, and a 25 projects totalling \$6.6 million in Category 2. There are also approximately \$20 million of projects with legal or policy issues in Category 4.

Table 2. Projects Submitted for the Draft Fiscal Year 1995 Work Plan(figures in thousand dollars)

| | (Re | Jeneral storation | Mc | nitoring | R | esearch | H Prot Act | abitat ection & juisition | Admin Scient & Pu | istration, æ Mgmt, blic Info | í. | leserve | | Total |
|--|--------------------------|--|------------------------|---|-------------------------|--|-----------------------|---|-------------------------|------------------------------------|----|------------|----------------------------|---|
| Evaluation Category | No | Cost | ⁻ No | Cost | No | Cost | No | Cost | No | Cost | No | Cost | No | Cost |
| #1 Priority Projects #2 Second Priority #3 Low Priority #4 Legal/Policy Issued #5 & #6; Closeout & Carry-fwd | 12 9 12 27 5 | \$2,992.3 \$3,502.9 \$1,949.3 \$19,612.2 \$551.5 | 14 5 1 1 1 | \$4,525.2 \$1,019.7 \$26.4 \$56.2 \$121.0 | 37 9 20 3 2 | \$11,970.8 \$1,584.9 \$4,683.2 \$186.2 \$109.7 | 2 2 3 1 1 | \$1,116.7 \$469.9 \$305.7 \$213.9 \$143.9 | 2 1 1 | \$4,187.6 \$31.9 \$20.0 | 1 | \$12,600.0 | 68 25 37 32 10 | \$36,792.6 \$6,577.4 \$6,996.5 \$20,068.5 \$946.1 |
| TOTAL | 65 | \$28,608.2 | 22 | \$5,748.5 | 71 | \$18,543.8 | 9 | \$2,250.1 | 4 | \$4,239.5 | 1 | \$12,000.0 | 172 | \$71,381.1 |

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Funding for the 1995 Work Plan

The Trustee Council has not yet decided the appropriate level of funding for the 1995 Work Plan. The Trustee Council will make that decision in late October 1994 based on the restoration needs identified in the proposed projects, taking into account public comment, further scientific and legal review, and the recommendations of the Executive Director.

Table 3 shows that approximately \$37 million was authorized for the 1994 Work Plan. It also shows the cost of 1995 projects in Evaluation Categories 1 and 2 — over \$43 million. It is likely that not all projects proposed for this year will be funded.

| Restoration Category | Authorized 1994 | Categories 1 and 2 1995 |
|--|---|---|
| General Restoration Monitoring and Research ¹ Habitat Protection & Acquisition ² Administration & Public Info ³ Restoration Reserve | \$5,415 \$12,076 \$3,745 \$4,480 \$12,000 | \$6,495 \$19,101 \$1,587 \$4,188 \$12,000 |
| Total | \$37,716 | \$43,371 |

| Table 3. Worl | Plan Funding |
|---------------|--------------|
|---------------|--------------|

¹ Table differs from Table 2 in that it combines monitoring and research to be comparable with how figures were authorized for 1994.

² Amount includes support costs and other protection activities, but not purchases.
 ³ Amount authorized was originally \$5.6 million but was reduced by the Executive Director to \$4.48 million. Amounts in this category include operation of the Oil Spill Public Information Center.

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Chapter 2

OVERVIEW OF RESTORATION PROJECTS BY RESTORATION CATEGORY

This chapter summarizes projects that are in Evaluation Categories 1, Priority Projects; 2, Second Priority; 4, Legal or Policy Issues; and 6, Carry-forward. It summarizes these projects by restoration category:

- Research
- Monitoring
- General Restoration
- Habitat Protection and Acquisition
- Administration, Science Management, and Public Information
- Restoration Reserve

The chapter does not include projects within Evaluation Category 3, Low Priority. These projects have incomplete information, lack a clear relationship to restoration, are of low technical merit, or are otherwise of low priority. The chapter also does not summarize the closeout projects, Category 5. However, information on these projects is available for your review in these documents:

- Appendix A of this document contains an abstract and summary information about all projects submitted for the work plan.
- Supplement Volume I contains three to six page descriptions of each of the approximately 93 projects contained in Categories 1 and 2.
- Supplement Volume II contains project descriptions for all other projects submitted for consideration and not included in Supplement Volume I.
- Supplement Volume III contains detailed budget information.

Supplement Volume I is available for distribution by calling the Exxon Valdez Restoration Office at (907) 278-8012 (toll free within Alaska at 1-800-478-7745, or from outside Alaska at 1-800-283-7745). Volume II and Volume III are available for review at the Anchorage Restoration Office, or at libraries and Legislative Information Offices throughout the spill area (individual project descriptions or budgets may also be requested by calling the Restoration Office).

RESEARCH

Five years after the oil spill, some resources show little or no signs of recovery. For these resources, restoration requires an understanding of the factors constraining recovery: Why aren't these resources recovering?

The resources injured by the spill that are not showing signs of recovery are listed below. This list will change as resources recover. (See Table 1, page 3 for a more complete list of resources and services injured by the spill.)

Injured Resources Not Recovering

| Common murre | Pacific herring | Sockeye salmon |
|------------------|------------------|---------------------------|
| Harbor seal | Pigeon guillemot | Some intertidal resources |
| Harlequin duck | Pink salmon | Some subtidal resources |
| Marbled murrelet | Sea otter | - |

The Trustee Council has recognized that a resource-specific approach is not always adequate and that restoration must take an ecosystem approach to better understand what factors control the populations of injured resources. Understanding why specific injured resources are not recovering will require a better understanding of how these resources interact with and are influenced by ecosystem processes.

Summary of the Research Program

The majority of the research program in this draft work plan is in five multi-year research groups. Together, the groups look at the major natural and spill-caused problems that could be constraining recovery of the resources injured by the oil spill. The results of these efforts could have important implications for restoration, for how fish and wildlife resources are managed, and for the communities and people who depend upon the injured resources.

The five research groups investigate the following questions:

- What is causing the failure of Prince William Sound herring and pink salmon runs?
- What is causing the long-term decline in some marine mammals and seabirds?
- Is food limiting recovery of injured resources?
- What is limiting recovery in the nearshore ecosystem?
- Are the toxic effects of oil still constraining recovery of some resources?

The remainder of this section explains the research groups in greater detail, as well as several individual research projects.

Seventy-one research projects totalling approximately \$18.5 million were submitted for 1995 (Table 2, page 6). Of these, 37 projects costing approximately \$12 million were initially placed in Category 1.

What is causing the failure of Prince William Sound herring and pink salmon runs? (Prince William Sound System Investigation) Pink salmon and Pacific herring were injured by the spill and do not appear to be recovering in Prince William Sound. The unexpectedly poor runs of PWS salmon and herring have caused significant hardship to the economies and lives of people who rely on those resources.

The Prince William Sound System Investigation is an integrated, multi-year research effort to determine the natural and spill-related factors that are affecting the health and population of Prince William Sound pink salmon and herring. The problems plaguing these resources are complex, and a lack of knowledge makes it difficult to restore or manage the fisheries.

The research effort has three goals. The first goal is to acquire an ecosystem-level understanding of processes constraining levels of pink salmon and herring abundance in Prince William Sound. The second goal is to use this new understanding to more accurately forecast pink salmon and herring responses to both natural and human disturbances, including fisheries management, enhancement, and restoration. A third goal is to establish a database describing the status of the ecosystem relative to pink salmon and herring as an information source for improving the effectiveness of management, enhancement, and restoration of these resources.

The Prince William Sound System Investigation will accomplish these goals by testing four hypotheses. The first is that survival of pink salmon and herring embryos and alevins is largely controlled by physical factors. The second is that losses of larval and juvenile pink salmon and herring are modulated by prey-switching by the fish, birds, and mammals that prey upon them. A part of this hypothesis is the expectation that the diet of these predators is, in turn, modulated by the amounts of macrozooplankton present each year. When macrozooplankton is abundant, the predators eat lesser amounts of these juvenile salmon and herring. The third hypothesis is that the biomass of macrozooplankton is established by physical transport processes that seed Prince William Sound from the Gulf of Alaska in the summer, and flush surface populations from the region in the spring. The final hypothesis is that the overwintering survival of Pacific herring to breeding age (at least two winters) is determined by the physiological condition of juveniles entering the winter, and by food, temperature, and predators encountered from October through April.

The Prince William Sound System Investigation began as part of the 1994 Work Plan at a cost of approximately \$4.6 million. The projects of this research group total approximately \$5 million for 1995. A number of those in the table below are not part of the submission by the investigators of the Prince William Sound System Investigation but are included because they address very closely related research issues. For more information, see individual project summaries in Appendix A, or the project descriptions in the Supplement Volume I.

| Cate- | Project | | | |
|-------|---------|--|--------|-----------------|
| gory | Number | Title | F | ¥ 1995 Cost |
| 1 | 95320A | Salmon Growth and Mortality | | \$267,800 |
| 1 | 95320E | Juvenile Salmon and Herring Integration | | \$943,100 |
| 1 | 95320G | Phytoplankton and Nutrients | | \$239,300 |
| 1 | 95320H | Role of Zooplankton in the Ecosystem | | \$247,400 |
| 1 | 95320J | Information Systems and Model Development | | \$836,200 |
| 1 | 95320M | Observational Physical Oceanography | | \$577,800 |
| 1 | 95320N | Nearshore Fish | | \$635,200 |
| 1 | 95320Q | Avian Predation on Herring Spawn | | \$99,000 |
| 1 | 95320S | Disease Impacts on Herring Populations | | \$379,900 |
| 1 | 95320T | Juvenile Herring Growth and Habitat Partitioning | | \$340,300 |
| 1 | 95320U | Somatic Spawning and Energetics of Herring and Pollack | | \$99 400 |
| 1 - | 95320Y | Variation in Local Predation on Hatchery-released Fry | | \$161,200 |
| 2 | 95018 | Partitioning of Primary Production Between Pelagic and Benthic | | |
| | | Communities | | \$219,200 |
| 4 | 95065 | PWSAC Pink Salmon Fry Mortality | | \$59,600 |
| 4 | 95320K | PWSAC Experimental Fry Release | | <u>\$47,300</u> |
| | | Ţ | Fotal: | \$5,152,700 |

Prince William Sound System Investigation Projects

Other Related Projects

Forage Fish Investigations (See page 13.)

95320I(2) Isotope Tracers, Food Webs of Fish (\$79,400; See page 18.)

What is causing the long-term decline in some marine mammals and seabirds? (Marine Mammal Ecosystem Studies) Since the mid-1970s, some marine mammals and seabirds that feed in pelagic areas have been declining in the northern Gulf of Alaska and Prince William Sound. These include harbor seals, marbled murrelets, and pigeon guillemots as well as sea lions and kittiwakes. In contrast, resources using nearshore habitats, such as sea otters and sea ducks, appear to have been stable or increasing during the same time period. This has led biologists to think that differences inherent in the food webs of these declining species may be responsible for differing trends. However, the causes of the declines are unknown. In the case of seals, it may be poor juvenile survival. In the case of some seabirds, it may be poor survival of chicks. The oil spill may be a contributing cause to the decline. However, to understand what factors are constraining recovery of these resources, the causes of the decline must be known.

The projects of this research group address the questions that surround the decline in pelagicfeeding marine mammals, by focusing initially on harbor seals. Collectively, the studies address the decline by monitoring harbor seal populations; using satellite tags to monitor behavior and provide clues concerning diet; and using body measurements, skin samples, and blood analyses to search for disease and establish health status. To be successful, this research effort requires

Draft Work Plan

information from the Forage Fish Investigations and Stable Isotope Analyses (other research groups). The Forage Fish Investigations will provide information about harbor seal food sources to determine whether food may be one of the factors limiting recovery. A final part of this research effort provides information on the effect of predation by the major harbor seal predator, killer whales.

Collectively, the Marine Mammal Ecosystem Studies attempt a comprehensive approach to the problem of harbor seal decline by investigating health, population status, food sources, and the effect of predators.

The three studies in this research group are expected to run for three years. The FY 1995 cost is \$697,500.

| Cate- gory | Project Number | Title FY | 1995 Cost |
|---------------|-------------------|--|-------------|
| 1 | 95001 | Condition and Health of Harbor Seals | \$172,800 |
| 1 | 95014 | Predation by Killer Whales in PWS: Feeding Behavior and Distribution of Predators and Prey | \$177,600 |
| 1 | 95064 | Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in PWS | \$347,100 |
| | | Total | ; \$097,500 |

Marine Mammal Ecosystem Studies

Other Related Projects

Forage Fish Investigations. (See below.) 953201(1) Isotope Tracers - Food Webs of Marine Mammals and Birds (\$115,400; See p. 18.)

Is food limiting recovery of injured resources? (Forage Fish investigations) Forage fish are small fish such as capelin, sandlance, juvenile pollock, juvenile salmon, and herring that are the food for many of the injured resources that feed in offshore areas. Some forage fish — herring and juvenile salmon — are known to have been injured by the spill. For others, the effects of the spill are unknown. However, if the spill or other factors disrupted the abundance or distribution of forage fish, these changes may be constraining recovery of any of the pelagic-feeding injured resources including: common murre, harbor seal, harlequin duck, marbled murrelet, and salmon.

If a connection between the lack of recovery of predators and the composition and abundance of the forage fish can be established, then restoration actions may be identified that will assist in restoring the injured populations. For example, it may be possible to encourage a commercial pollock fishery in Prince William Sound, as adult pollock may compete with injured resources for prey. Or, possibly, management of a commercial fishery or hatchery releases of juvenile salmon may change as a result of understanding the role of juvenile salmon and herring in the recovery of other injured resources.

Draft Work Plan

Forage fish projects will use hydroacoustic techniques to study the fishes' abundance and distribution, and use actual collections by fishing nets to estimate the forage fish species composition. These estimates of abundance and distribution must be compared with foraging ranges and behavior of the injured resources that eat the forage fish to determine how the status of the forage fish influences other injured resources. These measurements are combined with the estimates of health and productivity (for birds, this includes clutch size, growth of chicks, fledgling age, and fat stores at fledgling), and studies of nutritional value of the various forage fish species. Together, these projects will help determine if the abundance and distribution of forage fish is controlling the recovery of certain injured resources.

The Forage Fish Investigations are closely related to the Prince William Sound System Investigation and the Marine Mammal Ecosystem Studies. To be successful, both of those research groups need the results of the Forage Fish Investigations.

A pilot forage fish study was funded in FY 94 for \$606,600. Nine additional forage fish studies totalling approximately \$3.2 million were submitted for FY 95. These nine studies will be further reviewed and revised in order to provide for a well-integrated, cost-efficient research effort. A final recommendation on an integrated research program will be developed for Trustee Council consideration.

Forage Fish Projects

| Cate- | Project | | |
|-------|-----------|--|------------------------|
| gory | Number | Title | FY 1995 Cost. |
| 1 | 95019 | Distribution of Forage Fish as indicated by Puffin Diet Sampling | \$271,300 |
| 1 | 95031 | Reproductive Success as a Factor Affecting Recovery of Murrelets | |
| | | in PWS | \$444,800 |
| 1 | 95033 | Kittiwakes as Indicators of Forage Fish Availability | \$198,500 |
| 1 | 95117-BAA | Harbor Seals: Blubber and Lipids as Indices of Food Limitations | \$94,400 |
| 1 | 95118-BAA | Diet Composition, Reproductive Energetics and Productivity of Seab | irds \$140,600 |
| 1 | 95120-BAA | Proximate Composition and Energetic Content of Selected Forage Fi | sh |
| | | Species in PWS | \$43,000 |
| 1 | 95163 | Abundance and Distribution of Forage Fish and their Influence on | |
| | | Recovery of Injured Species | \$1,294,600 |
| 1 | 95173 | Factors Affecting Recovery of PWS Pigeon Guillemot Populations | \$408,800 |
| 2 | 95057 | Movement of Larval and Juvenile Fishes within PWS | <u>\$328,100</u> |
| | | Tota | 11: \$3,224,100 |

Other Related Projects

| 95320E | Juvenile Salmon and Herring Integration (\$943,100) |
|--------|---|
| 95320N | Nearshore Fish (\$635,200) |

What is limiting recovery in the nearshore ecosystem? The nearshore ecosystem includes the shallow-water areas where shoreline processes predominate. These areas are highly productive and include a wealth of organisms that are food for many of the top-level predators that are not currently recovering from the spill including sea otters, pigeon guillemots, and black oystercatchers. Nearshore areas are also the repository for most of the remaining oil spilled by the *Exxon Valdez*.

Two groups of nearshore proposals were submitted for 1995. The first, Nearshore Vertebrate Predators, focuses on the status of top-level predators that feed in the nearshore environment. The second group focuses on invertebrates — the intertidal and subtidal resources of the nearshore areas.

Nearshore Vertebrate Predators. The first group of proposals examines the recovery of nearshore predators injured by the spill. The studies focus on three non-recovering injured resources — harlequin ducks, pigeon guillemots, and sea otters — and three other resources with unknown status — white-winged scoters, goldeneyes, and river otters.

Due to a lack of information about pre-spill populations, in many areas it is difficult to determine when injured populations have recovered. This group of studies tests for recovery in two ways. First, the group assesses the status of recovery of these non-recovering resources by looking at the abundance and distribution of their prey, such as urchins, clams, and mussels. In areas where sea otter predation is limited, prey populations typically respond by increasing density and size. Comparisons of prey distributions between oiled and unoiled regions may provide a measure of the state of recovery of the injured predators in oiled areas where mortality was nearly complete. Second, the studies directly compare the fitness of the injured resources from selected oiled and unoiled areas. If animals in oiled areas are still experiencing stress due to exposure to residual oil, this stress should be detected in blood tests and other measures of fitness.

The FY 95 cost of the eight studies in this group, including three in Category 2, is approximately \$1.4 million.

Nearshore Vertebrate Predator Projects

| Cate- | Project | | |
|-------|---------|--|----------------|
| gory | Number | Title FY | 1995 Cost |
| 1 | 95025A | Factors Affecting Recovery of Sea Ducks and their Prey | \$415,100 |
| 1 | 95025B | Sea Otter Abundance and Distribution, Food Habitats and Population | |
| | | Assessment | \$168,100 |
| 1 | 95025C | Pigeon Guillemot and River Otters as Bioindicators of Nearshore Health | \$189,200 |
| 1 - | 95025H | Effects of Predatory Invertebrates on Nearshore Clam Populations | |
| | | in PWS | \$123,400 |
| 1 | 95087 | Relation of Sea Urchin Population Structure to Recovery of | |
| | | Injured Nearshore Vertebrate Predators | \$48,800 |
| 2 | 95009C | Trophic Dynamics and Energy Flow: Impacts of Herring Spawn | |
| | | and Sea Otter Predation on Nearshore Benthic Community Structure | \$217,300 |
| 2 | 95075 | Population Structure of Blue Mussels in Relation to Levels of Oiling | 1 1 |
| | | and Densities of Vertebrate Predators | \$197,500 |
| 2 | 95025F | Availability and Utilization of Mussels as Food for Sea Ducks and | (|
| | | Sea Otters | <u>\$5,500</u> |
| | | Total: \$ | 51,364,900 |

Intertidal/Subtidal Community Structure. The three studies in this group were submitted separately, but all focus on interrelationships of the intertidal and subtidal resources disrupted by the oil spill. The first addresses octopuses and chitons, which are important for subsistence use and have not previously been studied. The second is a continuation of a more expansive study of intertidal and subtidal resources and community structure at certain sites in Prince William Sound. The final study investigates whether the spill and cleanup altered the species competition between forms of algae in the nearshore environment.

The studies below together cost approximately \$1.3 million.

Intertidal/Subtidal Community Structure Projects

| Cate- | Project | | |
|-------|---------|---|--------------------|
| gory | Number | Title | FY 1995 Cost |
| 1 | 95009D | Survey and Experimental Enhancement of Octopuses in Intertida | al |
| | | Habitats | \$188,900 |
| 1 | 95086C | Herring Bay Monitoring and Restoration Studies | \$904,200 |
| 2 | 95025E | Algal Competition Limiting Recovery in the Intertidal | <u>\$205,100</u> |
| | | | Total: \$1.298,200 |

Are the toxic effects of oil still constraining recovery of some resources? Five years after the spill, exposure to oil may still be constraining recovery because of direct toxicity — the initial or continued exposure to oil — or because of heritable genetic injury.

Direct Toxicity. For some resources, the initial exposure may still be preventing recovery. Pacific herring may provide an example of this effect, because young herring or eggs exposed to oil in 1989 are just now entering the breeding population. The 1992, 1993, and 1994 herring runs in Prince William Sound were substantially below the predicted level, and the returning herring had a virus (viral hemorrhagic septicemia — VHS). The failed runs and the viral disease may be related to the original exposure to oil.

Heritable Genetic Damage. There is evidence that exposure to oil caused genetic damage in pink salmon and possibly herring. Genetic damage can occur not only to the year class that spawned or were exposed during the intense 1989 oiling, but can also be passed down — inherited — to the offspring. The genetic damage may be causing reduced size or reproductive success. While the initial damage is not unexpected, the fact that it may be passed down through generations is an unexpected research finding with important implications for the recovery of these resources.

Five studies make up this research group. All are within Category 1. Collectively, these projects provide laboratory and field tests of whether herring and salmon reproduction can be adversely affected by exposure to oil. They examine whether oil can influence pink salmon to increase the frequency with which pink salmon return to the incorrect stream to spawn. They also continue to monitor mortality of pink salmon eggs and alevins to determine whether some of the genetic damage caused is passed down to future generations. Finally, one study addresses an unusual twist on oil toxicity. The primary way that residual oil is removed from the environment is by the action of naturally occurring microbes that digest the oil. One study examines the possibility that compounds produced by the microbes may have some toxic effects. The related project listed in the table is a competitive solicitation to address whether the VHS virus in Prince William Sound herring is related to or caused by oil. This project is part of the Prince William Sound System Investigation.

Five studies totalling approximately \$1.3 million address these questions. All were placed in Category 1.

| Cate- | Project | | |
|-------|---------|--|-----------|
| gory | Number | Title FY | 1995 Cost |
| 1 | 95044 | In Situ Formation and Ecotoxicity of Hydrocarbon Degradation | |
| | | Products Produced by Ultramicrobacteria | \$135,100 |
| 1 | 95074 | Herring Reproductive Impairment | \$407,200 |
| 1 | 95076 | Effects of Oiled Incubation Substrate on Survival and Straying of Wild | - |
| | | Pink Salmon | \$179,900 |
| 1 | 95191A | Investigating and Monitoring Oil Related Egg and Alevin Mortalities | |
| | | (Field Study) | \$265,000 |
| 1 | 95191B | Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel | |
| | | (Laboratory Study) | \$331.000 |
| | | Total: \$ | 1,318,200 |
| | | | ſ |

Oil Toxicity Projects

Other Related Projects

95320S

Disease Impacts on Herring Populations (\$379,900) is part of the Prince William Sound System Investigation.

Other Research -- Stable Isotope Analyses. Stable isotope analysis is a valuable research technique proposed for use by many of the research projects previously explained. Stable isotope studies use shifts in the ratio of isotopes of carbon and nitrogen that can be correlated with different food sources. Certain tissues such as claws or whiskers can provide a record of the food sources consumed. The technique can be used to identify major shifts in food sources over the life of an individual animal by comparison of older tissue to younger tissue. The information obtained is used for many research purposes — delineating food webs, understanding physiology, etc.

Four proposals were submitted that use stable isotope analysis as their primary methodology. Four other studies use it in conjunction with other activities. Rather than fund a variety of stable isotope techniques, the stable isotope needs for Trustee Council restoration efforts may be combined into a single competitive solicitation. This combination would ensure consistency in technique and interpretation, and decrease the expense to the restoration program.

The four proposals that use stable isotopes as their primary methodology are listed below.

Stable Isotope Projects

| Cate- | Project | | |
|-------|-----------|--|-----------------|
| gory | Number | Title | FY 1995 Cost |
| 1 | 95320I(1) | Isotope Tracers, Food Webs of Marine Mammals and Birds | \$115,400 |
| 1 | 95320I(2) | Isotope Tracers, Food Webs of Fish | \$79,400 |
| 2 | 95023 | Food Web Relationships of Pelagic Species Exhibiting Long-term | |
| | | Decline | \$133,200 |
| 2 | 95121 | Stable Isotope Ratios and Fatty Acid Signatures of Selected Forage | |
| | | Fish Species in PWS | <u>\$48,100</u> |
| | | | otal: \$376,100 |

Other Research — Miscellaneous Proposals. One other research project which costs \$230,000 is in the table below. This project would attempt to determine the summer feeding and wintering areas of murres from the Barren Islands, as well as investigate food availability.

Other Research Project

| Cate- | Project | | | |
|-------|---------|---|-------|-------|
| gory | Number | Title FY | 1995 | Cost |
| 2 | 95021 | Seasonal Movement and Pelagic Habitat Use by Common Murres from | ` | |
| | x | the Barren Islands | \$230 |),900 |

Facility Improvements — Institute of Marine Science Infrastructure Improvements. In January 1994, the Trustee Council approved Project 94199, Infrastructure Improvements at the Institute of Marine Science in Seward, in order to meet current and future research facility needs. The Council authorized the project pending compliance with the National Environmental Policy Act, a review of the operating and capital costs, a review of what portion of the project would be legally permissible for Trustee funding, and the development of an integrated funding approach. A final recommendation for funding, up to an estimated \$25 million, will likely be before the Trustee Council once NEPA compliance is complete, now expected in late October 1994. The Trustees are expected to take action on that funding authorization at that time.

MONITORING

Monitoring the recovery of injured resources and services has been an important part of the restoration process since the spill occurred. Information about recovery is important in designing restoration activities, and for determining which activities deserve funding. An eligible recovery monitoring project tracks the rate and degree of recovery of the resources and services injured by the spill. It may also determine when recovery has occurred. For resources that are already recovering, it may detect reversals or problems with recovery. For resources that are not recovering, monitoring may determine the status of the injury, whether it is worsening, and when the population stabilizes or recovery begins.

Monitoring is needed periodically at least until a resource recovers. In April 1994, the Trustee Council sponsored a workshop in Anchorage which, as one of its products, produced a preliminary monitoring schedule. That schedule is shown in Table 4 on the next page. The table forecasts the monitoring schedule through 2001, the end of the settlement period. The table also shows Category 1, 2, and 4 projects submitted for the 1995 Work Plan. The monitoring needs and schedule will be subject to statistical analysis and further scientific review, and are likely to be revised.

A total of 22 proposed monitoring projects are listed in Table 4. The total cost of these projects is approximately \$5.7 million, of which \$4.5 million is in Category 1. For information about individual monitoring projects, see the project abstracts in Appendix A, or the project descriptions in the 1995 Draft Work Plan Supplement - Volume I.

| Injured Resource | Recovery Status | Monitoring Description | Year | | | | | | | Proposed FY 1995 Project |
|--------------------------------|--------------------|--|------|----|----|----|----|----|----|---|
| | | | 95 | 96 | 97 | 98 | 99 | 00 | 01 | |
| Marine Mammals Harbor Seals | Not Recovering | Trend counts | • | • | ? | | | | | • Part of Research Project 95064: Monitoring, Habitat Use and Trophic Interactions of Harbor Seals in PWS (\$347,100) |
| Killer Whales | Recovering | Photo-id | • | | • | | • | | • | 95013, Killer Whale Monitoring in PWS (\$113,700) 95092, Recovery Monitoring of PWS Killer Whales (\$110,000; these two projects have identical objectives and use similar methods.) |
| Sea Otters | Not Recovering | Aerial surveys Carcass collect'n | • | • | • | ? | | | | • Part of Research Project 95025B, Sea Otter Abundance and Distribution (\$168,100) |
| River Otters | Unknown | Latrine surveys | • | ? | | | | | | <u>Category 2</u> : 95062, River Otter Recovery Monitoring (\$55,900) |
| Birds Bald Eagles | Recovering | Productivity survey Population survey | • | | | | | • | | 95030, Productivity Survey of Bald Eagles in PWS (\$81,900) <u>Category 2</u>: 95029, Population Survey of Bald Eagles in PWS (\$48,700) |
| Black Oystercatchers | Recovering | Boat survey | | • | | | • | | | • <u>Category 2</u> : 95159, Boat Surveys - Marine Bird and Sea Otter Populations in PWS (\$426,800) |
| Common Murres | Not Recovering | Population survey Productivity survey | • | • | • | • | • | ? | | 95039, Common Murre Productivity Monitoring (\$154,200) |
| Harlequin Ducks | Not Recovering | Population survey Productivity survey | • | • | • | • | • | ? | • | 95427, Harlequin Duck Recovery Monitoring (\$226,900) <u>Category 2</u>: 95005, Harlequin Duck Abundance and Productivity in Western Cook Inlet (\$40,500) |
| Marbled Murrelets | Not Recovering | Boat survey | | • | | | • | | | See 95159 (Black Oystercatchers) |
| Pigeon Guillemots | Not Recovering | Boat survey Naked Is. counts | | • | | | • | | | See 95159 (Black Oystercatchers) |

Table 4. Draft Recovery Monitoring Schedule¹

| Injured Resource | Recovery Status | Monitaring Description | Year | | | | | | | Proposed : FV 1995 Project |
|---|--|---|---|----------------------|------------------|-------------|---|------------------------|---------------|---|
| , , | | | 95 95 | 96 | 97 | 98 | 99 | 00 | 01 | |
| Fish & Shellfish Cutthroat & Dolly Varden Trout | Unknown | Growth rates | ø | | | 0 | | | ? | No project submitted. |
| Pacific Herring | Not Recovering | Health & spawning biomass counts | Ø | 0 | 69 | Ð | 6 | Ø | ? | 95166, Herring Natal Habitats (\$512,800) |
| Pink Salmon | Not Recovering | Egg mortality Returns per spawner | 6 | \$ © | (9) (7) | ? ? | | | | Part of Research Project 95191B, Oil Related Egg and Alevin Mortality (\$331,000). Some monitoring information normally collected by ADF&G. |
| Rockfish | Unknown | None | | | | | | | Î | No project submitted. |
| Sockeye Salmon Kenai River Red Lake Akalura Lake | Not Recovering Recovering Not Recovering | Fry abundance Smolt outmigration Smolt outmigration Smolt outmigration | () () () () () () () () () () () () () (| 69 69 69 69 | € © ? € | 8 9 8 | () () () () () () () () () () () () () (| () () () | 9 9 | 95048, Historical Analysis of Sockeye Salmon Growth (\$99,200) 95258, Sockeye Salmon Overescapement (\$998,100) |
| Other Resources Archaeology | Nonrenewable | Index sites Cross-check sites | 0 | • | (9) (7) | 0 | () | \$ | ?? | 95007A, Archaeologic Site Restoration, Index Site Monitoring (\$386,300) |
| Intertidal Organisms | Some Recovering Some Not Rec. | PWS ² sites GOA ³ sites Herring Bay | & Ø | 0 0 | ® ? | 8 | ? | ? | | 95086A, Coastal Habitat Intertidal Monitoring and Experimental Design Verification (\$892,600) 95106, Subtidal Monitoring: Eelgrass Communities (\$200,400) <u>Category 4</u>: Subtidal Site Verification (\$56,200) |
| Persistence of Oil Shorelines Mussel Beds Subtidal | Recovering Not Recovering Recovering | Shoreline Assess. Sediment oil Hydrocarbons | K⁴ ⅓ ⊛ | ₽² ⅓ ? | ? 1⁄3 | ? | | × | | 95026, Hydrocarbon Monitoring: Integration of Microbial and Chemical Sediment Data (\$146,900) 95090, Mussel Bed Restoration and Monitoring in PWS and Gulf of Alaska (\$438,800) Project 95290, Hydrocarbon Data Analysis, Interpretation, and Database Maintenance for Restoration (\$163,400) <u>Category 2</u>: 95027, Kodiak Comprehensive Shoreline Assessment (\$447,800) |

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| Recovery Resource Status | | Monitoring Description | | | | Year (| | | le de la compañía de | Proposed FY 1995 Project | |
|----------------------------------|----------------|---------------------------|-----|----|----|--------|----|----|--|--|--|
| | | | .95 | 96 | 97 | 98 | 99 | 00 | 01 | | |
| Services Commercial Fishing | Not Recovering | See specific resources | | | | | | | | See monitoring for individual resources. | |
| Designated Wilder- ness Areas | Unknown | See persistence of oil | | | | | | | | See monitoring for individual resources. | |
| Passive Use | Unknown | See specific resources | | | | | | | | See monitoring for individual resources. | |
| Recreation and Tourism | Unknown | See specific resources | | | | | | | | See monitoring for individual resources. | |
| Subsistence | Recovering | See specific resources | | | | | | | | See monitoring for individual resources. | |

¹ This draft monitoring schedule will be subject to statistical analysis and further scientific review, and is subject to change.

²P, PWS = Prince William Sound; ³GOA = Gulf of Alaska; ⁴K = Kodiak and Alaska Peninsula.

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GENERAL RESTORATION

A general restoration project intended to help an injured *resource* should do so in one of three ways. It should:

- increase the *rate of recovery* (make a resource recover faster);
- increase the *degree of recovery* (enhancement change the long-term population level of the recovering resource); or
- increase *protection* for injured resources (allow agencies managing human use to protect the habitat of an injured resource directly and in this way allow natural recovery to proceed with a minimum of interference.)

In total, almost \$29 million of general restoration projects were submitted for the 1995 work plan. Approximately \$3 million are in Category 1, Priority Projects. However, almost another \$20 million of these projects have important legal or policy issues that must be resolved before projects are considered for funding. Some of these problems may be resolved in time for decisions on the 1995 Work Plan, while many others may prove unsolvable.

Summary of General Restoration Projects

General restoration projects in this draft work plan are one of seven types:

- stock separation projects for fisheries management;
- fish and shellfish enhancement and replacement projects;
- subsistence projects;
- recreation projects.
- archaeological resource projects;
- projects that protect resources by reducing marine pollution; or
- ^o other general restoration projects.

For each group of projects, this section summarizes the objectives of that group, explains in greater detail the objectives of the projects in Category 1, and summarizes other important points about the project group. Abstracts of each project and notes summarizing evaluations are in Appendix A.

Stock Separation Projects for Fisheries Management. In previous years, the Trustee Council approved a variety of projects to provide stock separation information. Stock separation information allows the Alaska Department of Fish and Game, which sets harvest regulations in Alaska, to implement management actions such as varying the timing and location of fishing to minimize harvest of injured fish stocks, particularly salmon. This task typically involves installing and recovering coded wire tags or another method of identifying different genetic stocks so that fisheries managers can determine the portion of the catch (at different locations and times) that originates from a particular run. To be eligible for funding by the Trustee Council, the information gathered by a project must be in addition to the information historically gathered by an agency.

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Eight projects of this type totalling over \$2 million are in the table below. The three Category 1 projects provide stock separation information for Kenai River sockeye, and for herring and four species of salmon in Prince William Sound. The remaining projects provide different aspects of stock separation information for Prince William Sound pink salmon and herring, except for Project 95050, which proposes to test the accuracy of equipment that the Alaska Department of Fish and Game uses to measure fish escapements.

Three projects were placed in Category 4 because of questions about whether those stock separation projects were normal agency management for the Alaska Department of Fish and Game, or because of a legal concern about potentially adverse impacts of projects involving hatcheries on wild fish stocks. Attorneys have indicated that preparation of an environmental impact statement may be needed on some hatchery-related projects before a determination can be made of whether they are eligible for funding from the civil settlement.

Stock Separation Projects for Fisheries Management

| Calc- | H H H H H H H H H H H H H H H H H H H | | |
|-------|---------------------------------------|---|------------------|
| gory | Number - | Title | Y 1995 Cost |
| 1 | 95255 | Kenai River Sockeye Restoration | \$645,000 |
| 1 | 95137 | PWS Stock Identification and Monitoring Studies | \$277,500 |
| 1 | 95051 | Large-scale Coded Wire Tagging of PWS Herring | \$231,900 |
| 2 | 95320D | PWS Pink Salmon Genetics | \$227,000 |
| 4 | 95320B | Pink Salmon Stock Identification and Monitoring | \$84,300 |
| 4 | 95320C | Otolith Thermal Mass Marking of Hatchery-reared Pink Salmon in PWS | \$642,200 |
| 4 | 95050 | A Test of Sonar Accuracy in Estimating Escapement of Sockeye Salmon | \$79,300 |
| 6 | 95165 | PWS Herring Genetic Stock Identification | <u>\$105,400</u> |
| | | Total | : \$2,291,600 |

Fish and Shellfish Enhancement and Replacement Projects. Fish habitat is not known to be limiting the recovery of injured fisheries stocks, and most projects to improve fish habitat or provide new or improved fish runs are designed to replace injured resources for sport, commercial, or subsistence fishermen. These projects physically improve fish habitat through construction of spawning channels or other means; culturing clams or other shellfish to replace beds injured by the spill; providing remote-release fish runs primarily for subsistence use; or enhancing injured, wild pink salmon stocks using hatchery techniques.

Thirteen projects involving fish and shellfish enhancement or replacement are in the table below. The total cost of these projects is approximately \$4.5 million. The Category 1 projects would fund a pilot study to determine physical techniques to restore Kenai River sockeye runs, test a pilot technique to replace clam beds near Nanwalek, Port Graham, and Tatitlek, and continue a remote-release chinook salmon run near Chenega.

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Six projects were placed in Category 4 because of a legal concern about potentially adverse impacts of the projects on wild fish stocks. Project 95093 was withdrawn by the proposer, and a revised project has been submitted which is currently undergoing review.

Projects 95024 and 95069 are identical in goals and methods but submitted by two different groups. The revised Project 95093 contains elements similar to these two proposals.

One project that has been funded by the Trustee Council in the past is not included in the table. Project 95259, Restoration of Coghill Lake, would fertilize Coghill Lake to increase sockeye production. This project was placed in Category 3, Low Priority, because of questions about the effectiveness of the method currently being used to restore the fishery. A major review of this effort and other sockeye restoration has been scheduled for early October, before final Trustee Council action.

Fish and Shellfish Enhancement and Replacement Projects

| Care- | rrojeci | | |
|-------|---------|--|------------------|
| gory | Number | Title | FY 1995 Cost |
| 1 | 95105 | Kenai River Restoration Ecosystem Pilot Enclosure Study | \$404,800 |
| 1 | 95131 | Clam Restoration (Nanwalek, Port Graham, Tatitlek) | \$445,000 |
| 1 | 95272 | Chenega Chinook Release Program | \$47,200 |
| 2 | 95024 | Enhancement of Wild Pink Salmon Stocks | \$184,000 |
| 2 | 95069 | Restoration of Salmon Stocks of Special Importance to Native Culture | es \$665,700 |
| 2 | 95139A | Spawning Channel - Port Dick Creek (near Homer) | \$33,200 |
| 4 | 95079 | Pink Salmon Restoration through Small-scale Hatcheries | \$150,000 |
| 4 | 95093 | PWSAC: Restoration of Pink Salmon Resources and Services | \$1,690,300 |
| 4 | 95124A8 | B, Tatitlek Mariculture Development | \$514,500 |
| 4 | 95125 | Tatitlek Sockeye Salmon Release Program | \$39,000 |
| 4 | 95127 | Tatitlek Coho Salmon Release Program | \$39,000 |
| 4 | 95134 | Chenega Bay Mariculture Development Project | \$184,300 |
| 6 | 94043B | Cutthroat and Dolly Varden | <u>\$108,600</u> |
| | | T | tal: \$4,505,600 |

Subsistence Projects. Many general restoration projects address subsistence by aiding resources used for subsistence. Examples include projects to enhance fish or provide stock separation information that were explained previously. Twelve other projects were proposed with the goal of restoring subsistence services.

One project in Category 1 would fund an elders and youth conference to focus on the transfer of traditional knowledge and information regarding injured resources. A second would fund agency representatives to work cooperatively with subsistence hunters to assess the impacts of subsistence harvests on harbor seals and sea otters, and to inform the public, including current subsistence users, about the current status and trends in these resources.

The twelve projects in the table below cost approximately \$2.2 million. Seven of these were placed in Category 4 because of legal concerns that the projects focus on subsistence without a clear enough relationship to an injured resource. The civil settlement and Policy 5 in the *Draft Restoration Plan* require that a project to restore a service must do so by restoring, replacing, or acquiring the equivalent of an injured resource.

Other Subsistence Projects

| Cate- | Project | | |
|-------|---------|---|--------------------|
| gory | Number | Title | FY 1995 Cost |
| 1 | 95138 | Elders/Youth Conference | \$85,800 |
| 1 | 95244 | Seal and Sea Otter Cooperative Subsistence Harvest Assistance | \$89,900 |
| 2 | 95132 | Port Graham and Nanwalek Subsistence Baseline | \$518,700 |
| 2 | 95133 | English Bay River Sockeye Salmon Subsistence | \$147,200 |
| 2 | 95279 | Subsistence Restoration Project | \$241,600 |
| 4 | 95123 | Tatitlek Community Store | \$300,000 |
| 4 | 95128 | Teaching Subsistence Practices and Values | \$69,000 |
| 4 | 95129 | Tatitlek Fish and Game Processing Center and Smokery | \$515,500 |
| 4 | 95130 | Mental Health Center (in Tatitlek) | \$106,100 |
| 4 | 95135 | Subsistence Harvest Support | \$50,000 |
| 4 | 95136 | Skin Sewing Crafts Restoration | \$29,900 |
| 4 | 95140 | Subsistence Skills Program | \$36,700 |
| | | - | Total: \$2,190,400 |

Recreation Projects. Most general restoration projects restore recreation by restoring the resources that recreation uses depend upon. Seven other projects to restore recreation are listed in the table below. Most of them would provide additional recreation facilities, and two involve education or promotion programs. The total cost of these projects is approximately \$2.6 million.

All of the recreation projects listed below were placed in Category 4 because of legal concerns about whether the projects show a clear relationship to an injured resource. The civil settlement and Policy 5 in the *Draft Restoration Plan* require that a project restore a service by restoring, replacing, or acquiring the equivalent of an injured resource. Many of the recreation proposals below do not show a clear relationship to an injured resource. Of these projects, the Fleming Spit Recreation Area Enhancements, Project 95080, shows the closest relationship to an injured resource, because it would replace sport fishing opportunities lost by the spill.

Recreation Projects

| Cate- gory | Project Number | Title | FY 1995 Cost |
|---------------|-------------------|---|--------------|
| 4 | 95002 | Leave No Trace Education Program | \$177,700 |
| 4 | 95016 | A Tribute to Prince William Sound | \$161,000 |
| 4 | 95053 | Cordova's Mini-imaginarium | \$62,600 |
| 4 | 95080 | Fleming Spit Recreation Area Enhancements | \$1,365,000 |
| 4 | 95082 | Mor-Pac Hill Campground Improvements | \$360,000 |
| 4 | 95084 | Odiak Camper Park Expansion | \$266,000 |
| 4 | 95085 | Cordova Historical Marine Park | \$196,500 |
| | | Total: | \$2,588,800 |

Archaeological Resource Projects. Two general restoration projects are proposed for archaeological resources, although they are included under one project number. One project would complete heritage site protection plans. Once these plans are finished in May 1995, additional archaeological resource projects may be identified for the 1996 work plan. In addition, last year's work completed site protection at a number of injured sites. This year's project would stabilize and excavate one remaining archaeological site.

| Archaeology Proj | iect |
|------------------|------|
|------------------|------|

| gory | Number | Title |) | FY | 1995 Cost |
|------|--------|-------------------------------|---|----|-----------|
| 1 | 95007B | Archaeologic Site Restoration | | | \$116,000 |

Cate- Project

Protecting Resources by Reducing Marine Pollution. Two proposals protect injured resources by reducing marine pollution or protecting habitat. These projects would eliminate additional stresses on natural resources and minimize interference with natural recovery. One project is a carry-forward and requires reauthorization of last year's funding; the other is a new project.

Projects to Reduce Marine Pollution

| Care | rrujeci | | | |
|------|---------|-------------------------------|-----|------------------|
| gory | Number | Title | | FY 1995 Cost |
| 1 | 95115 | Sound Waste Management Plan | | \$352,200 |
| 6 | 95417 | Waste Oil Disposal Facilities | | <u>\$232,200</u> |
| | | | | Total: \$584,460 |
| | | | , , | |

Other Projects. Eight other general restoration projects in the table below total over \$14 million and address a variety of subjects. Four projects are in Categories 1 and 2, and four in Category 4. Project 95041 would fund a follow-up survey to determine if last year's predator-removal project was successful. Project 95052 would gather information from area residents for use in research and restoration. Project 95038 would fund a symposium on techniques for seabird restoration. Project 95266 would seek competitive proposals for innovative methods to clean up residual oil on beaches in western Prince William Sound.

The four Category 4 projects were placed in that category for different reasons. Project 95003 would buy back and retire 25% of the Prince William Sound limited entry permits. This proposal was placed in Category 4 because of the legal concern that the project does not have an apparent benefit for an injured resource.

Project 95042 would prepare a plan for predator removal for the Alaska Maritime National Wildlife Refuge. It was placed in Category 4 because almost all of the work is outside the spill area, and because of the question of whether creating a plan for National Wildlife Refuge lands is part of that agency's normal management.

Project 95141, Afognak Island State Park Interim Support, was placed in Category 4 because of a question of whether its activities are "normal agency management," which is not eligible for funding under policies of the *Draft Restoration Plan*. Most of the project's funds would go towards moving overburden back onto logging roads to hasten revegetation and improve habitat.

Project 95116 would non-competitively fund a specific contractor to test a specific chemical for its ability to clean residual oil from beaches in Prince William Sound. The requirement for sole-source funding raised legal concerns, and as a result, Project 95266 in Category 2 was developed with a similar objective but with competitive solicitation.

Draft Work Plan

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Other General Restoration Projects

| Cate- | Project | | | |
|-------|---------|---|-------|------------------|
| gory | Number | Title | E | FY 1995 Cost |
| 1 | 95041 | Introduced Predator Removal from Islands - Follow-up Survey | | \$66,500 |
| 1 | 95052 | Community Involvement and Use of Traditional Knowledge | | \$230,500 |
| 2 | 95038 | Symposium on Seabird Restoration | | \$74,400 |
| 2 | 95266 | PWS Shoreline Assessment and Oil Removal | | \$1,411,100 |
| 4 | 95003 | Area E Commercial Salmon Permit Buyback Program | | \$11,735,000 |
| 4 | 95042 | Five-year Plan to Remove Predators from Seabird Colonies | | \$75,000 |
| 4 | 95141 | Afognak Island State Park Interim Support | | \$309,400 |
| 4 | 95116 | Restoration of Intertidal Oiled Mussel Beds by Nondestructive | | |
| | | Manipulation/Flushing with PES-51 | | <u>\$453,200</u> |
| | | | Total | \$14 355 100 |

HABITAT PROTECTION AND ACQUISITION

Habitat protection is an essential component of the Trustee Council's restoration effort. It includes protection activities as well as purchase of private land or interests in land in order to minimize further injury to resources and services, and to allow recovery to continue unimpeded.

Five Habitat Protection and Acquisition projects totalling \$1.8 million are listed in the table below. The two Category 1 projects support habitat acquisition negotiations. The major cost is for the agency and contractual support necessary to complete site-inspections; appraisals, and other activities necessary for negotiations and purchase agreements.

Project 95058 would provide information and assistance to private landowners who wish to minimize the impacts of their on-going and proposed activities on injured resources and services. It is a method of providing habitat protection without purchase. The project was evaluated as Category 2 because of its cost and is being further evaluated. Project 95139C would fund the evaluation of structures recently constructed to improve fish habitat in logging areas on Montague Island.

Project 95060 is the only Habitat Protection and Acquisition project in Category 4. The project would determine the extent of spruce bark beetle infestation and examine the role of the spruce forest for injured resources habitat. In this way, it provides information for habitat protection activities. The project is in Category 4 because of the question of whether it is within the scope of normal agency activities.

Representatives of the Trustee Council are currently negotiating with landowners for the purchase of land, or interest in land to protect habitat needed for the recovery of injured resources and services. Purchase costs for individual parcels are *not* included in this draft work plan.

Habitat Protection and Acquisition Projects

| Cate- | Project | 1 | |
|-------|---------|---|--------------------|
| gory | Number | Title | FY 1995 Cost |
| 1 | 95126 | Habitat Protection and Acquisition Support | \$1,099,500 |
| 1 | 95505B | Data Analysis for Stream Habitat | \$17,200 |
| 2 | 95058 | Restoration Assistance to Private Landowners | \$423,700 |
| 2 | 95139C | Montague Riparian Rehabilitation | \$46,200 |
| 4 | 95060 | Spruce Bark Beetle Infestation Impacts on Injured Fish and Wildlife | Э |
| | | Species | <u>\$213,900</u> |
| | | - | Total: \$1,800,500 |

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ADMINISTRATION, SCIENCE MANAGEMENT AND PUBLIC INFORMATION

Funding is required to prepare work plans, provide independent scientific review, oversee projects and budgets, involve the public, and operate the restoration program. These are necessary administrative expenses that are not attributable to a particular project. The Public Information, Science Management, and Administration category includes these and other public information and outreach functions, including the Public Advisory Group.

Final action on the draft work plan will not take place until late October 1994. Because the federal fiscal year begins on October 1st, and the Trustee Council operates on the federal fiscal year, the Trustee Council expects to take action on the Administrative budget at its August 1994 meeting. This will provide for continuous operation of Trustee activities.

Administration, Science Management, and Public Information includes two projects with a total cost of \$4,187,600. Project 95089 reflects a major attempt to integrate, synthesize, and make available the information generated by Trustee-sponsored research and restoration activities. It begins a multi-year effort to develop computer programs and databases that will allow scientists, managers, and the general public greater access to information at all levels collected by the restoration program. The project also continues operation of the Oil Spill Public Information Center which has been in existence since 1991.

Project 95100 contains the proposed FY 95 budget of approximately \$3.6 million for Administration, Science Management, and Public Information. It represents a substantial reduction in costs relative to the FY 94 budget authorized at \$5,250,000, and funds the following components.

<u>Office of the Executive Director</u> includes salaries, travel, office space, supplies, printing costs, utilities, and other items necessary for operation of the Juneau office of the Executive Director and the Director of Administration.

<u>Chief Scientist: Science Review Board and Peer Review</u> funds the independent scientific and technical review for the Trustee Council and staff. This information has been provided continuously by the Chief Scientist and expert peer reviewers since the injury assessment process started in 1989.

<u>Operations</u> funds staff that perform the planning, coordination, communications, and oversight functions of the Trustee Council. It also funds public meetings, teleconferences, Trustee Council meetings, newsletters, brochures, and the operating costs for the Anchorage Restoration Office.

<u>Public Advisory Group</u>. The Public Advisory Group consists of 17 members, plus two ad-hoc members from the State Legislature, representing 12 principal interest groups and five

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members from the public-at-large. The Public Advisory Group meets quarterly and provides valuable input to the Trustee Council.

<u>Restoration Work Force</u> provides staff and liaison support for the six Trustee Council members. The liaisons assist with work plan development and generally represent the Trustee Council members in matters related to implementation of the restoration program. (Agencies also receive funding for project management in association with individual projects.)

Administration, Science Management, and Public Information

| Cale | rojeci | | |
|------|--------|--|--------------------|
| gory | Number | Title | FY 1995 Cost |
| 1 | 95089 | Information Management System | \$590,700 |
| 1 | 95100 | Administration, Science Management, and Public Information | <u>\$3,596,900</u> |
| | | | Total: \$4,187,600 |

RESTORATION RESERVE

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

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

The \$12 million proposed in this draft work plan would be the second payment toward the *Exxon Valdez* Restoration Reserve. One payment of \$12 million was authorized by the Trustee Council as part of the 1994 Work Plan. Additional deposits of \$12 million payments made each of the remaining seven years would provide a reserve of \$108 million plus interest. These funds would be used to carry out long-term restoration activities needed after the final payment by Exxon in 2001.

APPENDIX A RESTORATION PROJECT PROPOSALS Summary Information

In July 1994, a preliminary review of all proposals submitted for consideration for funding in Fiscal Year 1995 was conducted. Each project submitted was initially assigned to one of six evaluation categories for the purposes of this review document. The categories are:

Category 1, Priority Projects. Projects that appear to have high restoration benefit, strong technical merit and are generally responsive to the *Invitation to Submit Restoration Projects for Fiscal Year 1995* (May 1994).

Category 2, Second Priority. Projects that appear to be permissible under the terms of the court settlement but of a lower priority for funding in FY95, and/or may require further development.

Category 3, Low Priority. Projects that were found to be incomplete, of low technical merit, lacking a clear relationship to restoration or otherwise of a low priority for restoration.

Category 4, Legal or Policy Issues. Projects with significant legal or policy issues or concerns associated with the proposal.

Category 5, Closeout. Projects from FY 94 which require sample and data analysis and report writing efforts to "close out" or complete.

Category 6, Carry-forward. FY 94 projects that were not completed and need to be reauthorized in FY 95.

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|---|--|--|---|---|
| 1 | 95001 | Condition and Health of Harbor Seals | Castellini, UAF | ADFG | PWS | NEW | \$172.8 | Project addresses important injured resource of high priority to subsistence communities. Possible |
| | | Abstract: This project would analyze satellite tagging and tracking in Proje seals in PWS. The project would invo or "normal" as part of an effort to deter recovery of seals. | blood and body ct 95064 in orde estigate whether ermine whether | v size of sea er to evaluat these seals lack of food | ls caught fi te the disea are underv l or disease | or the purpos use and healt weight (maln are factors of | se of h status of nourished) controlling | economies if Projects 95064 (monitoring, habitat use, and trophic interactions of seals) and 95117-BAA (seal blubber and lipids as indications of food limitation) are all pursued. Need to examine opportunities for collaboration with community outreach efforts. Proposer has strong qualifications. |
| 4 | 95002 | Leave No Trace Education Program | Ford, Nationa Outdoor Leadership School | l USFS | PWS | NEW | \$177.7 | Raises legal issue. Lack of clear connection to restoration of natural resources injured by EVOS No evidence provided that recreation is having a significant impact on the recovery of injured resources |
| | | Abstract: This project would fund an educational program to help reduce the human impacts caused by kayakers, tour groups, hunters and other recreationists that may be detrimental to long-term ecosystem recovery in the spill area | | | | | | |
| 4 | 95003 | Area E Commercial Salmon Permit Buyback Program | Mykland | ADFG | - PWS | NEW | \$11,735.0 | Raises legal issue No link to restoration While proposal would perhaps benefit individual permit |
| | | Abstract: The objective of this project would be to fund the buyback and retirement of 25% of the purse seine, drift gillnet and set gillnet permits in Area E (PWS). The purchase would be at fair market value | | | | | noiders, there is no explanation of now proposal would aid in recovery of natural resources injured by EVOS. Issues dealing with the economic condition of commercial fishermen are outside of the Trustee Council's purview. | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|---|--|---------------------------------------|---|------------------------|---|
| 2 | 95005 | Harlequin Duck Abundance and Productivity in Western Cook Inlet | DOI | DOI | KEN | NEW | \$40.5 | No compelling reason to undertake this project since no documented injury to harlequin ducks in western Cook Inlet. |
| | <i>,</i> | Abstract: This project would establish harlequin ducks in western lower Coo harlequin duck distribution, abundance populations in the Gulf of Alaska. | h, through surv k Inlet The pr e and habitat us | eys, the base oject would e to assist in | eline popu provide in restoring | lation param formation o harlequin du | neters for n uck | (|
| 3 | 95006 | Paint River Pink Salmon Development | Mears, Cook Inlet Aquaculture Assn. | ADFG | KEN | NEW | \$173.9 | Low technical merit, weak link to restoration (Paint River was not damaged by spill). Proposal involves creation of replacement resource to benefit commercial fishermen. Project was pursued prior to EVOS. |
| I | | Abstract This project would aid restoration by developing a significant run of pink salmon at Paint River. It is intended that the run, once established, would be sustained through natural spawning It is estimated that the Paint River is capable of producing returns of more than 1 7 million adult salmon, including up to 900,000 pinks | | | | | | |
| 1 | 95007A | Archaeological Site Restoration - Index Site Monitoring | ADNR | ADNR | ALL | Cont'd | \$386.3 | Responsive to Invitation, but cost appears high. |
| | | Abstract. This project would support monitoring of archaeological sites in the spill area. Sites that are identified as most vulnerable to looting would be monitored annually and used as index sites to assess looting problems. A second group of sites would be monitored biannually Some limited hydrocarbon monitoring would also be supported. This project would also fund the closeout costs of FY 94 project 94007, including data analysis and report writing, as well as completion of community heritage site protection plans. | | | | | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|---|--|---|-----------------------------------|---------------------------------|-------------------|---|--|--|
| 1 | 95007B | Archaeological Site Restoration | USFS | USFS | PWS | Cont'd | \$116.0 | Initial proposal was reduced to reflect FY 94 progress. | | |
| | - | Abstract. This project would continue (Project 94007). The FY 95 proposal halt erosion at one of the archaeologi | e archaeologica l would comple cal sites on Kn | al site restora te data colle ight Island i | ation work ction and n PWS. | initiated in l bank stabilız | FY 94 ation to | | | |
| 3 | 95009A | Trophics and Community Structure in the Intertidal and Shallow Subtidal | Highsmıth, UAF | USFS | PWS | NEW | \$455.4 | Proposal not yet well developed and articulated. (Note: Certain elements of Project 95009A provide for the logistics of the related projects proposed as 95009B, | | |
| | | Abstract. As part of a set of proposals, this project would examine how ocean circulation, environmental richness (e.g., primary productivity, influx of nutrients, food availability) and predator-prey relationships (e.g., food availability, patch use, grazing pressure, predation risk) interact to limit or structure communities. A particular focus for the project would be the influence of abundant localized energy and nutrients, such as herring spawn, on nearshore community structure. | | | | | | | | |
| 3 | 95009B | Primary Productivity as a Factor in the Recovery of Injured Resources in Prince William Sound | Stekoll, UAI | ⁷ USFS | PWS | NEW | \$218.9 | Proposal does not demonstrate a clear relationship to the restoration mission, nor to the rest of the proposed nearshore ecosystem/community structure proposal package. | | |
| 1 | | Abstract: As part of a set of proposals, this project would examine the production and flow of fixed carbon in the nearshore ecosystem of PWS to determine the importance of benthic primary productivity in the recovery of injured intertidal and subtidal resources. Results of the project would lay the foundation for understanding how fixed carbon is moved through the PWS nearshore system and how this carbon flow is altered by seasonal events. | | | | | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|---|--|--|--|--|--|
| 2 | 95009C | Trophic Dynamics and Energy Flow: Impacts of Herring Spawn and Sea Otter Predation on Nearshore Benthic Community Structure | Hıghsmith, UAF | USFS | PWS | NEW | \$217.3 | The sea otter elements of this proposal could possibly be combined with Project 95025B (sea otter abundance and distribution, food habits and population). Portions relating to herring spawn could be addressed as part of other herring project efforts. |
| | | Abstract: As part of a set of proposal of marine invertebrates to food web co and community structure at matched on intertidal and shallow subtidal foo non-spawning sites. The project wou sea otter, on intertidal and shallow su | s, this project v omplexity (both sites. This wou d webs by comp ld also investig btidal commun | would specif as predators and include the paring regula gate the impa- ity structure. | ically exa s and as prine impact ar spawnin ct of a dor | mine the cor rey), energy t of spawning ng sites with minant preda | atribution ransfer activities ator, the | , 1 , |
| 1 | 95009D | Survey and Experimental Enhancement of Octopuses in Intertidal Habitats | Scheel, PWS Science Center | USFS | PWS | NEW | \$188 9 | Addresses resources (octopus and chiton) important to subsistence communities. Proposal can stand independent of nearshore ecosystem/community structure package. Geographic scope and scale of effort |
| | | Abstract: As part of a set of proposal chiton densities at several sites, provi species and explore the potential of ar way to enhance local octopus density | s, this project v de information tificial dens as a | would survey on habitat us a cost-effecti | v intertida se and dis ve survey | l octopus and tribution for technique ar | l gumboot these id as a | deserve further consideration. Need to coordinate with subsistence community outreach projects. |
| 3 | 95009E | Community Structure of Mobile Foragers Using the Nearshore | USFS | USFS | PWS | NEW | \$280.5 | The issues addressed in this proposal can be better addressed in the context of Project 95320Q. Questions |
| | | Abstract: As part of a set of proposal and intensity of predation by mobile t focused on avian and mammal forage | posals, this project would address hypotheses regarding the role obile foragers in trophic food webs. The proposed study is oragers in the nearshore intertidal/subtidal ecosystem. | | | | about the methodology proposed. | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|---|--|--|--------------------------------------|--|---|---|--|--|
| 3 | 95010 | Intertidal Fauna and Flora Species Composition, Abundance and Variability Relative to Physical Habitat Controls | Schoch, Oregon State Univ | DOI | KEN | NEW | Proposal lacked focus. Lack of strong relationship to restoration objectives. | | | |
| | | Abstract. This project proposes to in fauna/flora communities. Using geo inference from limited biological tran habitat disruption; defining spatial re information on rate of recovery; pro- condition and survival of intertidal c intertidal communities, seasonal vari productivity of the intertidal habitat. | to investigate controlling factors in the environment of intertidal geomorphological data, the project would make statistical transects to broader areas. Objectives include quantifying al relationships of disrupted intertidal communities; providing providing information on variations in recruitment, growth, al communities; and filling gaps in knowledge on distribution of variation in abundance and how to monitor long-term itat. | | | | | | | |
| 1 | 95013 | Killer Whale Monitoring in PWS | S Matkin, North Gulf Oceanic Society | h NOAA | PWS | NEW | \$113.7 | Same basic methodology as 95092, but with a broader scope (includes AT1 pod). NOAA and North Gulf Oceanic Society should examine possibility of | | |
| | | Abstract: This project would monitor transient killer whales in PWS and in The program would focus on the pop relation to other resident and transien | or, through photo nterface this proj pulation dynamic nt groups that us | e-identification ect with oth cs of the AB e PWS. | on and ma er propose pod and t | pping, reside ed ecosystem he AT1 grou | ent and 1 studies. 1p in | collaborating on single killer whale monitoring project. | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|--|--|---|--|--|---|--|--|--|
| 1 | 95014 | Predation by Killer Whales in PWS: Feeding Behavior and Distribution of Predators and Prey | Matkın, North Gulf Oceanic Society | NOAA | PWS | NEW | \$177.6 | Good conceptual development and justification articulated in proposal. Results could enhance interpretation of PWS ecosystem work on trophic interactions. Less important than monitoring of kille | | |
| | | Abstract: This project would analyze killer whales in PWS and investigate species including harbor seals as well determine if resident and transient kille feeding preferences | historical data of the potential im as herring and p er whale pods an | on feeding, h pact of killer pink salmon e genetically | abitat use r whale pr . The pro distinct a | and distribu edation on I ect would a nd have diffe | tion of PWS prey ttempt to erent | whales (killer whales thought to be recovering) but still could provide valuable data on resource. Clarification of cost in relation to related Project 95013 (monitor killer whales) needed. | | |
| 4 | 95016 | A Tribute to Prince William Sound | Kremen | USFS | PWS | NEW | \$161.0 | Raises legal issue. Does not address an injured resource but rather proposes what is essentially a | | |
| | | Abstract: This project would fund a f various national trade shows and othe as an injured service | raveling exhibit r venues as a me | "A Tribute eans of prom | to Prince oting the | William Sou recovery of | und" to tourism | commercial promotion effort. A national tour as proposed would contravene the Council's past practice of undertaking restoration actions within the spill area. | | |
| 3 | 95017 | Port Graham Coho Salmon Subsistence Fishery Restoration Project | Daisy, Aquafarm | ADFG | KEN | NEW | \$587.9 | Extremely high cost per fish produced (about \$40/fish amortized over a ten year period). Technical concerns regarding the proposed water supply and possibility of | | |
| - | | Abstract: This project would restore current harvest level of around 350 to annual return of some 6,000 Port Gra project would largely consist of develo | the coho subsist its historic leve ham coho to the oping an expand | ence fishery I of around 2 salmon hat ed water sup | at Port G 2,000 by a chery at P oply for th | raham from attempting to ort Graham. e hatchery. | the o create an . This | pathogens. Raises legal issue since the project does not address restoration of injured resource but rather seeks to enhance silver salmon production. Not apparent that proposed project would rebuild self-sustaining wild populations or aid the recovery of the ecosystem as a whole. | | |

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|----------|-------------|--|---|--|--|---|--|--|--|--|--|
| 2 | 95018 | Partitioning of Primary Production Between Pelagic and Benthic Communities | Naidu, UAF | ADFG | PWS | NEW | \$219.2 | Link to restoration not clear but potentially valuable part of future ecosystem studies. | | | |
| <u> </u> | 1 | Abstract: This project would examine phytoplankton and its role in the ecos carbon flux in the supply of food to p | e particulate org system. The pro pelagic primary | anic carbon oposed study consumers | (POC) der y would in and to the | rived from vestigate the benthic syst | e role of em. | | | | |
| 1 | 95019 | Distribution and Abundance of Forage Fish as Indicated by Puffin Diet Sampling | DOI | DOI | PWS KEN | NEW | \$271.3 | Potentially an extremely valuable project although puffins have limited distribution in PWS. This project needs to be further evaluated under the direction of the | | | |
| | | Abstract This project would use puf and geographic variation in the comp The project would provide information fish) may be limiting the recovery of harbor seals) | fin diet samplir osition of forag on to evaluate th a number of inj | ng as a mean e fish at seld the hypothesi ured resource | is to quant ected sites s that food ces (e.g, n | ify seasonal, within the s l limitation (nurres, murr | , annual pill area. forage elets and | Chief Scientist in the context of the many other proposals being advanced to study trophic interactions of forage fish. | | | |
| 2 | 95021 | Seasonal Movement and Pelagic Habitat Use by Common Murres from the Barren Islands | DOI | DOI | KEN | NEW | \$230.9 | Questions concerning whether useful results could be obtained in a short time period. Feasibility study should be completed before funding this project. Could | | | |
| | | Abstract. The project would use sate summer feeding areas and wintering a would investigate food availability to limiting the recovery of the Barren Is murre diving depths through external | llite transmitter treas of murres a murres and tes lands populatio y mounted dept | s on commo from the Bar t the hypoth n. The projo h recorders. | on murres rren Island esis that f ect would | to determine s colony. Th ood availabi also collect o | e both the he project lity is data on | be deferred for consideration in FY 96. | | | |

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|------|-------------|--|--|--|---|---|--|--|--|--|--|
| 3 | 95022 | Foraging Efficiencies at Temporary Food Patches | Scheel, PWS Science Center | DOI | PWS | NEW | \$183 1 | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the many other proposals being advanced to study trophic interactions of forage fish. Important topic but not | | | |
| | | Abstract: This project would collect from shore or from other research ve would examine foraging efficiencies context of community dynamics for | t foraging data, the ssels) on predator , population indi- fish eating birds | nrough obse rs feeding in ces, and foo and mamma | rvations (mixed-sp d web rela als. | from a small becies aggrega ationships in t | boat, ations and the | adequately addressed by this proposal. Meaure of efficiency proposed too simplistic. This type of wor may be valuable in the future in a more refined form | | | |
| 2 | 95023 | Food Web Relationships of Pelagic Species Exhibiting Long-term Decline | Duffy, Alaska Natural Heritage Program | DOI | PWS | NEW | \$133.2 | Needs further evaluation under direction of the Chief Scientist in the context of other proposals to address forage fish. Needs evaluation in context of projects using stable isotope analysis. Revised scope for this | | | |
| | | Abstract. This project would examine by the oil spill (common murre, mar their utility as environmental sample examined in relation to those of Paci such as Walleye pollock, that might fish, as predators or competitors. A would be used to construct simple ca | ne food webs of I beled murrelet, p rs (tufted puffin fic herring and o interact with eit nalysis of this da arbon-flow mode | PWS focusir bigeon guille and black-le ther forage f her the birds ata, together ls. | ng on diets emot) and egged kitti fish and to s, as comp with stab | s of seabirds c other birds se wake). Diets o the predator retitors, or the le isotope and | lamaged elected for would be y fish, e forage alysis, | project may be needed. Concern regarding collection of carcasses under federal law (MBTA). | | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | | |
|------|-------------|---|---|---|--|--|--|---|--|--|--|
| 2 | 95024 | Enhancement of Wild Pink Salmon Stocks | Reidel, Native Vıllage of Eyak | ADFG | PWS | NEW | \$184.0 | Proposal did not address potentially significant technical problems and genetic concerns. Project needs to be reviewed with Project 95069 (restoration of | | | |
| | | Abstract This project would enhance subsistence communities. Proposed to incubation and pen rearing of fry to use of local hire to maximize local en | e wild pink and o echniques includ achieve optimum conomic impact | chum salmo le streamsio survival. of project. | on stocks o le incubato Project also | f particular c rs for remote o proposes to | concern to e o make | salmon stocks of special importance to native cultures). Further consideration needed in context of other subsistence priorities. | | | |
| 1 | 95025A | Factors Affecting Recovery of Sea Ducks and Their Prey | DOI | DOI | PWS | NEW | \$415.1 | Proposal to address winter ecology of seabirds is important aspect not previously addressed. Possibly | | | |
| | | Abstract: This project would study friendly including harlequins, goldeneyes, scowintering ecology and ecosystem into breeding harlequins are failing due to throughout the winter. The project widesign of related studies of injured be | actors influencing ters, oldsqaws, b eractions. This p continued conta yould identify ma onthic invertebrate | g the recover uffleheads project wour mination fr ajor sea ducters. | ery of vario and mergar ald examine om oil or fo ck prey spe | ous sea ducks nsers with en e the possibil ood shortage cies to assist | s nphasis on lity that t in the | should focus effort on harlequins although inclusion scoters would address valuable issues. Need to coordinate or combine with Project 95427 (harlequin duck recovery monitoring). Questions concerning feasibility of proposed capture techniques. | | | |
| 1 | 95025B | Sea Otter Abundance and Distribution, Food Habits and Population Assessment | DOI | DOI | PWS | NEW | \$168.1 | Clear objectives consistent with the <i>Invitation</i> although project description needs some further detail. Well qualified proposers. Should possibly be | | | |
| | | Abstract This proposed project has reproductive rates and mortality; eval of sea otters as top-level predators. S of, the extent of sea otter recovery; fa and condition; and food habits of sea | three elements s luation of sea otto Specific accompl actors contributin a otters in areas o | urveys to e er body con ishments of ng to differe f PWS that | valuate abu dition and f the projecences in sea t vary in oil | indance, dist health, and e t include eva otter densiti ing and in de | integrated with Projects 95025H (effects of predatory invertebrates on clams), 95009C (trophic dynamics herring spawn and sea otters), 95087 (sea urchins as sea otter prey) and coordinated with Projects 95244 (seal/sea otter harvest assistance), 95075 (blue mussels), 95090 (mussel bed restoration) and 95159 (marine bird/sea otter survey). | | | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|---|---|--|--|---|--|
| 1 | 95025C | Pigeon Guillemots and River Otters as Bioindicators of Nearshore Ecosystem Health | Roby, UAF | DOI | PWS | NEW | \$189.2 | Clearly stated objectives pertaining to injured resources consistent with the <i>Invitation</i> . Reviewers impressed with linkage of two foragers using the same |
| | | Abstract: This project presents a ressignificance of contaminants present otters as indicators of environmental trophic level sentinels of bioavailab utilize biomarkers (biochemical and design | earch approach t in the environr l stress These to le contaminants cellular indicato | for assessing nent utilizin wo injured re such as oil. rs of exposu | g the biolog g pigeon g esources w The propo re and effe | gical and ecological and ecological and ecological and rullemots and rull be used as posed project work of the project work of | logical d river s upper would earch | habitat/prey. Effort to define bioindicator is valuable but may not be successful; proposal is responsible in its cautious approach. Should be coordinated with Project 95173 (recovery of pigeon guillemots) to realize possible cost efficiencies. |
| 3 | 95025D | Settlement Rates of Nearshore Invertebrates, Oceanic Processe and Population Recovery: Are They Linked? | DOI es | DOI | PWS | NEW | \$435.7 | Relationship to restoration objectives unclear. Some interesting ideas but proposal vague, not well defined, too general. No specific hypothesis to test. |
| | | Abstract: This project would address oceanographic) may be limiting the limiting settlement of larval forms a mussels, barnacles, clams) | the hypothesis recovery of som and possibly rec | that physica e intertidal a ruitment inte | I factors (i and subtida o these pop | including clu al organisms pulations (e.g | matic and by g., | |
| 2 | 95025E | Algal Competition Limiting Recovery in the Intertidal | Stekoll, UAI | F DOI | KEN | NEW | \$205.1 | A good proposal but very narrowly focused. Species to be addressed by project not regarded as a high priority |
| ī | Ĵ | Abstract. This project would examine whether the oil spill and associated of <i>Fucus</i> and other perennials that now as the dominant provider of food ar would build on prior research conce ecosystem. | ne the interrelation eleanup efforts have been approved to the annual the annual habitat in the sommer the community the communi | ionship of ce ave resulted ual <i>Alaria</i> fi lower interti unity structu | ertain algal in a year re rom return dal comm re of the lo | l species to as ound presenc ing to its natu unity. The p ower intertida | ssess e of ural state roject al | for restoration. Proposed study area/habitat type is unique. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|---|--|--|---|---|--|
| 2 | 95025F | Availability and Utilization of <i>Musculus</i> spp. as Food for Sea Ducks and Sea Otters | Dean, Coastal Resources Associates, Inc. | DOI | PWS | NEW | \$5.5 | Although potential cost-effectiveness is high, the methodology is unclear. Cost should be absorbed by another sea duck or sea otter project or possibly as part of a combined clam/mussel/oyster project. |
| | | Abstract: This project would examine that lives attached to eelgrass and alga attempt to determine whether this pote abundant at oiled sites, is being utilize whether prey availability is a limiting | e the utilization e) by sea ducks entially valuable ed by sea otters a factor in the rec | of Muscul and sea ott food source and/or sea of covery of se | us spp. (a ers in PW ce, which lucks as a ea ducks as | small mytili S. The study is generally r means of ex nd/or sea otto | d mussel / would more amining ers | |
| 3 | 95025G | Relation of Clam Population Structure to Recovery of Injured Nearshore Vertebrate Predators Abstract. This project would examine prey for sea otters in PWS, in an effor find explanations for the apparent fail area. This project would determine th assess the effects of clam abundance, s | Jewett, UAF and Van Blaricom, NBS e the status and t to better asses ure of sea otters e current status size structure an | DOI dynamics of s the recover of injured of d recruitme | PWS of clam por ery status in some p clam resou nt dynami | NEW pulations, the of sea otters parts of the of rces in PWS cs on the rec | \$208.5 e primary and to il spill and overy of | Substantial methodology questions concerning key proposal assumptions and study design. A basic clam biology investigation Proposal does not address issue of sediments Possible that elements of this proposal could be redefined and/or integrated with a revised nearshore/shellfish project. [Note. This project proposal was revised since initial review in response to the above comments and also incorporated elements of what was formerly project 95094 (now withdrawn).] |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|---|--|---|--|---|--|---|--|--|
| 1 | 95025H | Effects of Predatory Invertebrates on Nearshore Clam Populations in PWS | Van Blarıcom, NBS | , DOI | PWS | NEW | \$123.4 | Affords opportunity to investigate two injured resources (clams and sea otters) and their interrelationship as predator and prey. Important that | | |
| | | Abstract: The project would examine on clams, the primary prey for sea otto of sea otters and to find explanations spill area. The project would examin predatory invertebrates are contributin in some portions of PWS. | the effects of in ters in PWS, in a for their apparen the hypothesis the hypothesis to the lack of | an effort to an effort to at failure to s that high recovery of | predators (better asse recover in rates of cla f clam and | sea stars, snai ess the recove some parts o m consumpti sea otter pop | ils, crabs) ery status of the on by ulations | investigators on projects addressing higher trophic lev predators (sea otters) help define issues of importance to be addressed by project. Should possibly be integrated with 95025B (sea otter abundance, food habits). | | |
| 3 | 95025J | Primary Productivity as a Factor in the Recovery of Injured Resources in Prince William Sound | Stekoll, UAF | DOI | PWS | NEW | \$397.0 | Relationship of project to specific restoration objectives not well defined. Questions regarding methodology and sampling techniques. Questions regarding utility of isotope analysis. Project needs to | | |
| | | Abstract: The project would examine ecosystem of PWS and determine the of injured intertidal and subtidal spect understanding how fixed carbon is mo carbon flow is altered by seasonal eve | The project would examine the production and flow of fixed carbon in the ne n of PWS and determine the importance of benthic primary productivity in the l intertidal and subtidal species. Results of the project would lay the foundation iding how fixed carbon is moved through the PWS nearshore system and how ow is altered by seasonal events. | | | | rshore recovery 1 for his | be reevaluated in the context of all other projects proposing the use of stable isotope analysis under the direction of the Chief Scientist. | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|--------|-------------|---|---|---|--|--|---|--|
| 1 | 95026 | Hydrocarbon Monitoring: Integration of Microbial and Chemical Sediment Data | ADEC, Institute of Arctic Biology, UA | ADEC F | ALL | NEW | \$146.9 | Analysis of previously collected data sets (chemical and microbiological). Strong proposal. Responsive to <i>Invitation</i> . |
| | | Abstract: The project would use exist hydrocarbon pollutants and existing of hydrocarbon fractions; establish upper and help establish a natural rate of re inexpensive microbial analyses as pro- comments that microbiology and che | sting data sets of chemistry data to er and lower esti- covery of oiled edictors of oil re emistry data show | n marine sed o estimate fie mates of per- sediments; re sidue; and re uld be synthe | liment mid eld rates of sistence of efine a too espond to p esized. | crobial respondent biodegradat these hydrocol of using rel previous peer | nses to ion for carbons latively r review | |
| 2 | 95027 | Kodiak Shoreline Assessment: Monitoring Surface and Subsurface Oil | ADEC | ADEC | KOD | NEW | \$447.8 | Important to ensure coordination with subsistence community outreach Projects 95052 (community involvement and traditional knowledge), 95279 |
| , , | | Abstract: The project would determine the subsurface of selected shorelines used to: determine whether recovery brought subsurface oil to the surface affecting shoreline activities; determine beaches need additional treatment. The assessment although it may result in | ine the extent, or of the Kodiak A is proceeding at ; help local peop ine the origin an Chis project is ex identification o | (subsistence restoration project), and 95428-CLO (subsistence planning). Opportunities to phase project should be further reviewed. Last assessment outside of PWS was 1990. | | | | |

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| Project Title | D | Lead | | | | |
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| · · · · · · · · · · · · · · · · · · · | Proposer | Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
| lation Survey of Bald Eagl WS | es DOI | DOI | PWS | NEW | \$48.7 | Recommended frequency of bald eagle population surveys 1s every 5 years; survey was last done in 1991. |
| act The project would determ lations with 1982 data and 198 eagles and alleviate concern cro | If approved, could be integrated with Project 95030 (productivity of bald eagles). | | | | | |
| uctivity Survey of Bald es in PWS | DOI | DOI | PWS | NEW | \$81.9 | DOI has proposed two bald eagle projects: monitoring productivity (95029) and monitoring population |
| | alation Survey of Bald Eagle WS ract The project would determ lations with 1982 data and 198 eagles and alleviate concern cre suctivity Survey of Bald es in PWS | alation Survey of Bald Eagles DOI WS ract The project would determine the bald eag lations with 1982 data and 1989-91 data. This eagles and alleviate concern created by the susp fuctivity Survey of Bald DOI es in PWS | Ilation Survey of Bald Eagles DOI DOI WS DOI ract The project would determine the bald eagle population lations with 1982 data and 1989-91 data. This survey would eagles and alleviate concern created by the suspected reduction luctivity Survey of Bald DOI Boot DOI easin PWS DOI | Itation Survey of Bald Eagles DOI DOI PWS WS DOI PWS ract The project would determine the bald eagle population size in PV lations with 1982 data and 1989-91 data. This survey would help to c eagles and alleviate concern created by the suspected reduction in prey uctivity Survey of Bald DOI DOI PWS es in PWS | Itation Survey of Bald Eagles DOI DOI PWS NEW WS ract The project would determine the bald eagle population size in PWS and complations with 1982 data and 1989-91 data. This survey would help to confirm the receipes and alleviate concern created by the suspected reduction in prey availability. Inuctivity Survey of Bald DOI DOI PWS NEW Inuctivity Survey of Bald DOI DOI PWS NEW | Ilation Survey of Bald Eagles DOIDOIPWSNEW\$48.7WSractThe project would determine the bald eagle population size in PWS and compare 19951995lations with 1982 data and 1989-91 data. This survey would help to confirm the recovery of eagles and alleviate concern created by the suspected reduction in prey availability.\$48.7uctivity Survey of BaldDOIDOIPWS\$81.9es in PWSFWS\$81.9 |

Reproductive Success as a 95031 DOI DOI PWS NEW \$444.8 Highly responsive to Invitation. Clearly articulated **Factor Affecting Recovery of** relationship to restoration objective for marbeled **Murrelets in PWS** murrelets. Well qualified proposer. Abstract. The project would investigate whether low reproductive success is limiting the recovery of marbled murrelets in PWS and, if so, whether food limitation or predation are responsible. The study would examine annual differences in murrelet productivity parameters relative to prey abundance in PWS focusing on chick provisioning rates and reproductive success.

Abstract The project would re-survey nest occupancy and productivity of bald eagles in PWS

and contrast the results with productivity parameters found to be "normal" in studies of coastal

Alaska eagle populations. The survey would be used to evaluate whether bald eagles are recovering as predicted based on population modeling. An identical productivity survey was

funded by the Trustee Council in 1989-91

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long-lived birds; therefore, more likely to see decline in

productivity than in population.

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|--------|-------------|---|---|---|--|--|--|--|--|--|--|
| 1 | 95033 | Kittiwakes as Indicators of Forage Fish Availability | DOI | DOI | PWS KEN | NEW | \$198.5 | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the | | | |
| | | Abstract: The project would examin populations in PWS, which can serv with forage fish studies, this project may be limiting recovery of injured r fish as prey | e the relative a e as an indicato would help ado esources (seabi | vailability of t or of other sea lress the issue rds and harbo | food for bl bird speci of wheth r seals) th | lack-legged k ies. In conju er food availa at depend on | kittiwake nction ability forage | interactions of forage fish Should review this project proposal in relation to Project 95320Y (variation in local predation on hatchery fry). | | | |
| 2 | 95038 | Symposium on Seabird Restoration | Harrison, Pacıfic Seabird Grou | DOI | ALL | NEW | \$74.4 | Potentially of great value although lack of proceeding or publication of results is a problem. Proposer shou consider conducting such a symposium as part of a | | | |
| | | Abstract: This project would support but not limited to, species recognize symposium would be to identify cos | rt the cost of a ed as injured by t-effective met | regular Pacific Seabird Group annual meeting. | | | | | | | |
| 1 | 95039 | Common Murre Productivity Monitoring | DOI | DOI | KEN | Cont'd | \$154.2 | Directly responds to Invitation. | | | |
| ۰ ۰ | | Abstract: The project would obtain a common murres in the Barren Island set required to determine whether co work is an extension of 1993-1994 s data analysis of FY 94 field work. | logy of i-year data e proposed riting and | | | | | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | | | |
|------|-------------|--|---|--|--|---|---|---|--|--|--|--|
| 1 | 95041 | Introduced Predator Removal from Islands - Follow-up Surveys | DOI | DOI | OUT | Closeout | \$66 5 | Predator removal is generally effective. Proposal will allow measurable results to be obtained. Budget should | | | | |
| | | Abstract This project would involve assess the effectiveness of a predator r (Project 94041). Populations of black depressed due to the presence of introc increases in black oystercatchers and This project would also support the re | follow-up surv removal project c oystercatchers luced foxes. Suppleon guillem port writing ar | veys on Sime t funded by t s, guillemots urveys will b nots as a resu nd data analy | onof and he Truste and othe e conduct lt of the e sis of FY | Chernabura I e Council in I r seabirds hav ed to docume elimination of 94 field worl | slands to FY 94 ve been nt foxes k | be reviewed for possible reduction. | | | | |
| 4 | 95042 | Five-year Plan to Remove Predators from Seabird Colonies | Harrison, Pacific Seabird Grou | DOI | OUT | NEW | \$75.0 | Raises legal issue (some of the species addressed by the project are not recognized as injured) and policy issues (work area is outside spill area and planning effort is port of permet accept recognibility) | | | | |
| | | Abstract. This project would produce squirrels and other introduced mamma and recommendations made for their r plan would be outside the spill area. | part of normal agency responsibility). | | | | | | | | | |
| 3 | 95043A | Cordova Cutthroat Trout Habitat Abstract: This project would support the City of Cordova, the State of Alas habitat and develop a restoration or en take the lead in facilitating meetings of develop a work plan for specific areas. | USFS work by the C ka and the Eya hancement pro f these groups | USFS Cordova Rang k Corporatio ogram. The C and other int | PWS ger Distru- n to ident Cordova H erested p | Cont'd ct in collabora ify degraded Ranger Distric arties in order | \$22.7 ation with cutthroat et would r to | Need to address how the project would evaluate the result of efforts on more than a qualitative level. | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|--|---|---|--------------------------------|---|
| 6 | 95043B | Carry-forward: Cutthroat and Dolly Varden Rehabilitation in Western PWS | USFS | USFS | PWS | Carry | \$108.6 | Reauthorization of project initially approved in FY 94 NEPA compliance to be completed in FY 94. |
| | | Abstract In FY 94 the Trustee Coun improved instream habitat for salmon bypasses, spawning channels and mal throughout the spill area Some of th would reauthorize the effort started in | cil allocated \$7 a, cutthroat trout king other impro- nese projects we a FY 94 within t | 55.0 (Projec and Dolly ovements to re not comp he same buc | cts 94043 a Varden by some 14 a pleted in F lget approv | and 94139) to constructing madromous v Y 94. This p yed last year | o g waterways project | |
| 1 | 95044 | <i>In Situ</i> Formation and Ecotoxicity of Hydrocarbon Degradation Products Produced by Ultramicrobacteria | Button, UAF | NOAA | PWS | NEW | \$135.1 | Novel issue to be addressed. Need for further review of budget Potential for collaboration with other projects needs further examination. |
| | | Abstact: This project would examine that this metabolism may have on gen respond to oil pollution. | the metabolism neral ecosystem | ı of oıl by п functions a | narine bact and how high | eria and the organism | effects ms may | |
| 3 | 95045 | Green Island Intertidal Restoration Monitoring | Juday and Foster, UAF | USFS | PWS | NEW | \$26.4 | Methodology and objectives vague. Would duplicate some of work previously authorized by the Trustee |
| | | Abstract: This project would initiate natural recovery of biological diversit ecosystems of outer PWS impacted t monitoring (not funded by the Trustee control (unoiled site) at Hinchinbrool the rate and degree of recovery from t | Council (e.g, project 94086) | | | | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | | |
|------|-------------|---|---|--|---|--|--|---|--|--|--|
| 3 | 95046 | Long-term Record in Tree Rings of Climatic Features | Juday, UAF | NOAA | ALL | NEW | \$153.6 | Proposal presents novel approach to gathering historical data, but utility to on-going ecosystem | | | |
| | ť | Abstract: This project would sample a long-term chronology and proxy of project would calibrate tree growth co century in order to determine the clim climate record back in time | tree-rings from climatic condit ompared to instr natic sensitivity | a variety of tions over th ument-based of the trees a | sites in the last 2 to climate read then e | e spill area 4 centuries ecords durin ktend the inf | to develop The g the 20th erred | research not well established. Relationship to specific restoration objectives not clear. If proposal could be refocused to address a specific priority restoration concern, it might be of greater utility. | | | |
| 3 | 95047 | Seal Contamination Abstract: See notes. | McKee | ADNR | PWS | NEW | | Proposal incomplete. A lack of information precludes meaningful consideration. | | | |
| 1 | 95048 | Historical Analysis of Sockeye Salmon Growth | Ruggerone, Natural Resources Consultants | ADFG | ALL | NEW | \$99.2 | Innovative proposal to address damage and recovery of sockeye Appears cost-effective Some technical questions need clarification such as statistical power of proposed methodology. Scope of work questions. | | | |
| | | Abstract: This project would, as part scale growth measurements to invest oil spill from systems affected by the Lake, Chignik Lake) as compared to River, Crescent Lake, Black Lake, ar to determine the relative magnitude o a result of overescapement or the pre- of sockeye growth. | Investigators are of high quality. | | | | | | | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | | |
|------|---|---|---|-----------------------------|-----------------------------|--------------------------------|-------------------|---|--|--|--|
| 3 | 95049 | Independent Review of Restoration and Monitoring Projects | Ruggerone, Natural Resources Consultants | ADFG | ALL | NEW | \$31.9 | This proposed project would duplicate work already approved by the Trustee Council and implemented through the work of the Chief Scientist and the peer reviewers. A Request for Proposals (RFP) for | | | |
| | ~ | Abstract This project proposes to prove valuation of salmon monitoring and a Council. | ovide consulting restoration proje | expertise i ects propose | n the inder ed to or fur | bendent revie Ided by the 7 | ew and Frustee | interested, the proposer of this project could respond | | | |
| 4 | 95050 | A Test of Sonar Accuracy in Estimating Escapement of Sockeye Salmon | Ruggerone, Natural Resources Consultants | ADFG | KEN OUT | NEW | \$79.3 | Policy issue Sonar is a standard tool used by ADF&G. Ensuring its accuracy is a part of normal agency management for the department. Equipment proposed for testing is soon to be obsolete. | | | |
| | | Abstract This project would test the a develop a correction factor that could | | | | | | | | | |
| 1 | 95051 | Large-scale Coded Wire Tagging of PWS Herring | June, Natural Resources Consultants | ADFG | PWS | NEW | \$231.9 | Proposal provides strong link to restoration. Potentially important part of effort to understand herring stocks. Multi-year project commitment. Need | | | |
| | Abstract: This project would provide for large-scale installation of coded-wire tags and recovery in order to help fishery managers better target fishery harvests and provide information about the components of differing herring stocks. Project would also provide information about growth, fecundity and migration patterns of herring. | | | | | | | to look further at technique, and ensure resources are adequate to meet objectives. Recovery of data (coded tags) needs further consideration. | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|--|--|--|--|--|---|
| 1 | 95052 | Community Involvement and Use of Traditional Knowledge | ADNR | ADNR | ALL | NEW | \$230.5 | Need to coordinate with other community involvement efforts including Projects 95027 (shoreline |
| | - | Abstract: The objective of this projectudes by making use of unique local important and/or facilitating feed back recognition that local residents may be questions, there is presently no form | ect would be to a al knowledge, inc ck of study result have traditional k al mechanism to | ssist researd corporating : s to study a nowledge th facilitate th | chers to in research ai rea resider hat could h he exchang | volve local p ims that are l hts. While th help answer r he of informa | people in locally here is a research ation | assessment), 95279 (subsistence food safety testing), 95428-CLO (subsistence planning). Proposal needs further consideration in context of other subsistence priorities. |
| 4 | 95053 | Cordova's Mini-Imaginarium | Trowbridge, PWS Science Center | ADNR | PWS | NEW | \$62.6 | Raises legal issue. Does not address an injured resource or service damaged by the spill. |
| | | Abstract: This project would suppor Cordova including realistic displays spills/hazardous waste problems, imp conservation and other topics The p promote educated decision-making for | t the planning ar and hands-on act pact response me roject would enc or all ages. | rium in s, oil nergy WS and | | | | |
| 3 | 95055 | Prehistoric Ecological Baseline for PWS | USFS | USFS | PWS | NEW | \$256.1 | Relationship to specific restoration objectives not well established. Regarded as a low priority at the April |
| | | Abstract. The objective of this projection decadal and millennial time scales the degrees of contemporary species record the oil spill. The project would be a perform the past using information on cord glaciation and tectonic events and | 1994 science management workshop. If proposal could be refocused to address a specific high priority restoration concern it might be of greater utility. | | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|--|--|---|--|---|---|
| 2 | 95057 | Movement of Larval and Juvenile Fishes within PWS Abstract: This project would investig of fish with an emphasis on forage fis the Project 95320/PWS System Inves and marine mammal studies by follow through PWS to identify areas of aggre | Norcross, UAF ate the distribution sh species That stigation studied ving patches of regation used a | NOAA ution, abunda e project wor s and the oth f herring and as juvenile nu | PWS nce and di ild attemp er various other larv rseries. | NEW spersal of lan t to fill a gap forage fish, al fishes on t | \$328 1 rval stages p between seabird transit | Further clarification of the specific restoration objectives of this project needed. Further consideration needed in the context of other forage fish projects as well as relationship to 95320T (juvenile herring growth) Appears to be dependent upon certain oceanography portions of Project 95320 (PWS System Investigation) Clarification of sampling scale and design needed. |
| 2 | 95058 | Restoration Assistance to Private Landowners Abstract: This project would provide to minimize the impacts of on-going a services. | USFS information as or proposed ac | ADFG nd assistance cuvities as the | ALL to private by relate to | NEW landowners injured reso | \$423.7 who seek burces or | This project should be scaled back to a more modest initial effort based on a more complete assessment of demand. |
| 4 - | 95060 | Spruce Bark Beetle Infestation Impacts on Injured Fish and Wildlife Species of the <i>Exxon</i> Valdez Oil Spill | ADFG | ADFG | PWS KEN | NEW | \$213.9 | Policy issue. Proposed project appears to consist of normal agency responsibilities |
| | | Abstract: This project would provide bark beetle infestation within the rang spill injured species The project wou the injured species, evaluate whether injured species habitats, identify species evaluate the impacts of these critical | information d ge of habitats p ild determine t the current or p ific critical hab habitats resulti | , , , , , , , , , | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|--------------|--|---|--|---|---|---|--|
| 2 | 95062 | River Otter Recovery Monitoring Abstract This project would continue assessment study phase for one more y used to assess recovery. This project y additional otter protection (e.g., modif | ADFG the monitorin year to establish would provide a fication of trapp | ADFG g of latrine s n an index of information bing seasons | PWS sites begur f otter abur for assessi) | NEW during the d adance that c ng the need f | \$55 9 lamage an be for | Damage to river otters by EVOS substantiated but magnitude of injury unclear. Latrine site information would provide limited, but potentially cost-effective, insights into recovery. Sample size is small. If approved, possibly integrate with Project 95025C (pigeon guillemots and river otters as bioindicators) |
| 1 | 95064 | Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in PWS Abstract: This project would gather d and genetic relationships of harbor sea counts to determine whether recovery continuing Seals would be instrument movements, diving and haulout. | ADFG ata on the distri ils in PWS Th is occurring or nted with satell | ADFG button, abut e project ind whether the ite transmitt | PWS ndance, be cludes mor decline in ters to inve | Cont'd havior, food utoring and t harbor seals estigate habit | \$347.1 habits, rend is at use, | Project targets an injured resource important to subsistence communities Good potential to collaborate with other harbor seal projects (Projects 95001 and 95117-BAA). Strong technical merit and excellent qualifications of proposer Need to coordinate with subsistence community outreach efforts. |
| 4 | 95065 | PWSAC Pink Salmon Fry Mortality Abstract [.] This project would investig occurred at the Cannery Creek Hatche 1994 at both the AFK hatchery and ag | Olsen, PWS Aquaculture Corporation ate the abnorm ry in 1992 and ain at the Cann | ADFG ally high pi the cause fo ery Creek h | PWS nk salmon or a similar atchery | NEW fry mortality ly high morta | \$59.6 y that ality in | Raises legal issue. Indications from legal counsel are that the proposed use of settlement funds to support hatchery operations could require an EIS prior to a final determination of whether the project would be legally permissible. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
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| 2 | 95069 | Restoration of Salmon Stocks of Special Importance to Native Cultures | ADFG | ADFG | PWS KEN | NEW | \$665.7 | Technical merit and effectiveness need further review. Concerns about genetic impacts Proposal should be combined with Project 95024 (enhancement of wild |
| Abstract Project would enhance wild pink salmon stocks of particular concern to subsistence pink stocks). communities Approximately eight stocks would be targeted for FY 95 In addition to instream techniques, incubation of stocks at hatcheries to improve egg to fry survival and other techniques utilizing hatcheries would be considered | | | | | | | | |
| 3 | 95071 | Monitoring Nearshore Fish Species for Persistence of Oil Exposure and Ecotoxicological Effects | NOAA | NOAA | PWS KEN AKP | NEW | \$231 0 | Substantial concerns about the essential concept of the proposal. The utility of the methods is uncertain. |
| ζ. | | Abstract This project would support subtidal ecosystem to ascertain biolo The study is intended to identify geog allow a determination of the rate of re 1993, and allow for the determination compartment of the PWS and Kenai/ | nearshore posure. continuing; 992 - 1 | | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|---|---|---|---|---|---|---|--|--|
| 3 | 95073 | Impact of Killer Whale Predation on Harbor Seals in PWS | NOAA | NOAA | PWS | NEW | \$228 2 | Methodology regarding stable isotopes would not clearly yield desired results The proposed research would likely provide interesting results but would not | | |
| | | Abstract: This project would investi potential impact of killer whale pred collection of biopsy samples from re stable isotope analysis to determine on marine mammals versus fish. The energetics of killer whales. | gate killer wha ation on PWS sident and tran the fraction of e project would | le predation w harbor seals sient killer w the PWS kille d include stud | with a focu The proje hale popul er whale p ies to dete | is on determi ct would inv ations and th opulation that ermine popula | ining the olve ie use of at preys ation | appear to get at the issue of how many seals were being taken by killer whales This project needs further consideration in context of all other projects involving stable isotope analysis | | |
| 1 | 95074 | Herring Reproductive Impairment | NOAA | NOAA | PWS | Cont'd | \$407.2 | Important attempt to determine if there are persistent, heritable reproductive impacts to herring in view of | | |
| | | Abstract: This project would investig by exposure to oil A combination of measurements from herring in the fit During FY 94, the project goal was to impairment of larvae with reduced st eggs as well as larvae. | recent run failures. Responsive to <i>Invitation</i> . Strong technical merit Needs further assessment in the context of other projects proposed to address herring | | | | | | | |
| Cat. | Project No. | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|---|--|---|--|--|---|
| 2 | 95075 | Population Structure of Blue Mussels in Relation to Levels of Oiling and Densities of Vertebrate Predators | NOAA | NOAA | PWS | NEW | \$197 5 | Project unfocused. Significant questions concerning methodologies More focused project of reduced scope might have value in coordination with 95025B (sea otter abundance, food habits). Possible that elements of this proposal could be redefined and/or integrated |
| | | Abstract This project would measure populations at oiled and unoiled loca otter, harlequin duck, black oystercat between the contamination monitoring predator interactions in the nearshore | tions and relate cher) densities ng and cleanin ecosystem. | ce, size distrib e the measurer This project g of mussel be | oution, and nents to k is intende eds and th | d growth of n nown predato ed to bridge th e investigatio | nussels in or (sea ne gap ns into | with a revised nearshore/shellfish project |
| 1 | 95076 | Effects of Oiled Incubation Substrate on Survival and Straying of Wild Pink Salmon | NOAA | NOAA | ALL | NEW | \$179 9 | Proposal responsive to restoration needs, addresses important ecotoxicological issue Proposer should provide more background on similar work. |
| | | Abstract: This project would expose salmon to migrate to the Gulf of Ala used to determine the effect on stray adults Additionally, the study would incubation environment, stock; and c | pink salmon t ska. The expo ing, marine su d attempt to de oded wire tagg | to oil during in osure to oil du irvival, and ga etermine the in ging. | ncubation ring egg 1 mete v1ab ifluences | and then rele neubation we ility of return on straying be | ase these ould be ing ehavior of | - |
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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|---|---|---|---------------------------------------|---|---|--|--|--|
| 3 | 95077 | Recreation Impacts in PWS: Human Impacts as a Factor Constraining Long Term Ecosystem Recovery | Ford, National Outdoor Leadership School | ADNR | PWS | NEW | \$117.0 | Proposed project's relationship to restoration of injured resource not well established Proposal lacks strong rationale regarding the need to investigate human impacts to ecosystem health. Without further documentation of injury to be addressed, project appears | | |
| | | fishermen and hunters and whether th recovery. The project would attempt determine the tolerance of specific eco processes altered as a result of user day | ey are a factor ir to qualify and qu osystem types to sturbance. | a constrainin antify use a user impac | ng long-te and impac t, and exa | rm ecosystem t from recreat mine ecosyste | ionists, em | to be a low priority. | | |
| 3 | 95078 | Culture, History, and Ecosystems: Assessment of Cultural/Historical Strategies to Building Long-term Understanding of Ecosystems in the Oil Spill Area | DOI | DOI | ALL | NEW | \$166.7 | Novel approach to provide long-term perspective on ecological processes but not clear how useful this cou be in meeting restoration objectives. Need to first identify long-term, historic data needs this project cou address. If refocused to address specific high priority | | |
| | | Abstract: This project would investig historical research as sources of long- processes that may be affecting the re traditional Native Alaskan knowledge specific ability to shed light on causa and populations of injured species | stigate the potential for archaeological, ethnographic and ng-term comparative data for understanding the ecosystem e recovery of injured biological resources Archaeological sites dge, and the historical record would be evaluated for their usal factors that might explain current downturns in the health | | | | nd tem tical sites, eir ne health | Appears most useful in preparation for future spills See Project 95055. | | |

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|------|---|--|---|---|--|---|------------------------------------|---|--|--|
| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
| 4 | 4 95079 Pink Salmon Restoration Van Hyning, ADFG PWS NEW \$1500 Rat Through Small-scale Hatcheries NERKA, Inc., that Aquabionics hat Inc det | | | | | | | | Raises legal issue. Indications from legal counsel are that proposed use of settlement funds to support hatchery operations could require an EIS prior to a final determination of whether the project would be legally | |
| | | bstract. This project would develop a hatchery capable of producing 10 million pink salmon by by 1999 at South Bay, Perry Island and to study the effects of incrementally increasing roduction of hatchery fish on wild stocks. | | | | | | | | |
| 4 | 95080 | Fleming Spit Recreation Area Enhancements | The Cordova Sporting Club | ADNR | PWS | NEW | \$1,365.0 | Proposal has merit because Fleming Spit was injured by cleanup workers (mentioned in the Draft Restoration | | |
| | | Abstract: This project would include Fleming Spit area, a dredge and fill p clean-up of the area including remova facilities. | acquisition of cr roject to improve l of a derelict bas | itical lands e existing s rge, and ad | and tidela molt relead dition of a | nds in the in se ponds, a ; variety of re | nmediate general ecreational | Plan). However, proposal needs to be reworked to more clearly be responsive to spill damage | | |
| 4 , | 95082 | "Mor-Pac Hill" Campground Improvements | The City of Cordova | ADNR | PWS | NEW | [´] \$360.0 | Raise's legal issue. The proposal to improve a campground originally built to house oil spill workers | | |
| | | Abstract. This project would provide Campground by the City of Cordova bathroom/shower facility and enclosu | that now suffers from lack of maintenance is not a proposal for the restoration of the natural resources of services provided by those resources injured by the spill. | | | | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
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| 4 | 95084 | Odiak Camper Park Expansion | The City of Cordova | ADNR | PWS | NEW | - \$266 0 | Raises legal issue The proposal to improve a campground is not a proposal for the restoration of the | | |
| | | Abstract This project would provide Park by the City of Cordova. Improv 58 RV spaces and the addition of utili sites and landscaping. | for the expansion ements would not ties at each site | on and impr nclude expr along with | ovement of t ansion of t playgroun | of the Odiak he RV park d areas, addi | Camper from 18 to itional tent | natural resources or services provided by those resources injured by the spill | | |
| 4 | 95085 | Cordova Historical Marine Park | Cordova Planning and Harbor Commission | ADNR | PWS | NEW | \$196 5 | Raises legal issue. A marine historical park for display of salvaged fishing boats would not be natural resource restoration. | | |
| | | Abstract: This project would provide vintage fishing vessels which have be previous decades for commercial or su | for the acquisit en built and/or ibsistence harve | ion, restorat used by the st | tion and in Cordova f | terpretive dis ishing fleet o | splay of during | | | |
| 1 | 95086A | Coastal Habitat Intertidal Monitoring and Experimental Design Verification | Stekoll, UAF | ADFG | PWS | Cont'd | \$892 6 | Valuable to revisit sites from 1991 but project in need of revised scope of effort Objectives 1(b) and (c) should be dropped and budget reduced accordingly | | |
| | | Abstract: This project would revisit to was designed to measure ecosystem ecommunity. The FY 95 effort would damaged species: percent cover, abund quantified in all habitats A second co "after, control-impact pairs" design us | the Coastal Hab ffects of the oil revisit the CHI dance, biomass omponent of the sed by the CHIA | itat Injury A spill and clo A sites and and density proposed p A study | Assessmen eanup in th assess the of key spe project wor | t Study (CH te nearshore recovery rat cies would b uld be to value | IA) that te of be udate the | (retrospective analysis of methodology does not warrant expense; its main contribution would be to prepare for future spills). Question continued need for statisticians Must decide which geographic areas and habitat types would be appropriate to monitor | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|---|--|--|---|--|
| 3 | 95086B | Population Dynamics of Eelgrass and Associated Fauna Abstract. This project would examin populations of eelgrass and invertebra to a determination of the necessity for continuation of community dynamics | Stekoll, UAF e factors that ma tes within the ea r, and appropriat studies in the c | ADFG ay inhibit th elgrass com te design of, coastal habit | PWS e recovery munity. 7 restoration at. | Cont'd y of subtidal The project wo on activities a | \$78 3 ould lead s a | Need for this project in FY 95 not well established in proposal. Should be reexamined following fundamental review of progress on intertidal work to date. Not recommended unless needed by sea otter studies or report on 1993 field work is finished and substantiates the need for further work. |
| 1 | 95086C | Herring Bay Monitoring and Restoration Studies Abstract: This project would continuintertidal invertebrates and algal component of the state of the | Highsmith, UAF e investigations munities. The p among invertebr ons would addres e damaged inter nity structure is intertidal species, other species. | ADFG into the dar project would rates and alg ss whether: tidal commu- limited by re , including the | PWS nage of th d investig ae for deta dominant unity; prea ecruitmen he effects | Cont'd te shallow sul ate important ermining facto competitors a lators are limit processes; a of damaged s | \$904.2 otidal and ors that and ated by nd pecies | Important on-going work However, need to finish current studies before initiating new ones Any additional work in FY 96 should be considered on basis of completed reports from prior and on-going studies. Recommend narrowing project to finish work underway and reduce budget accordingly. |

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| Cat. | Project No. | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|------|-------------|--|---|---|---|--|---|--|--|
| 1 | 95087 | Relation of Sea Urchin Population Structure to Recovery of Injured Nearshore Vertebrate Predators | Jewett, UAF | ADFG | PWS | NEW | \$48.8 | Project should possibly be integrated with Projects 95025B (sea otter abundance, food habits), 95009C (trophic dynamics: herring spawn and sea otters), 95025H (predatory invertebrates on clams) under | |
| | | Abstract. The project would examine PWS and examine the availability of a addressed by the project are whether s an increase is related to a lack of sea of is a potential food source for recovering | changes in the sea urchins as f ea urchin popul otter predation; ng sea otter pop | distribution food for sea of lations are in and whether pulations. | and abun otters. Sp creasing an increa | dance of sea u pecific issues in PWS; whet sing urchin po | to be to be ther such opulation | direction of Chief Scientist in consultation with investigators working on sea otters Needs clarification relative to other predator projects Potentially important if redesigned. | |
| 1 | 95089 | Information Management System | Executive Director's Office | Executive Dırector's Office | ALL | Cont'd | \$590.7 | This project transitions the Oil Spill Public Information Center (OSPIC) into a comprehensive system for the management, integration and public | |
| | | Abstract This project proposes to fur began with the establishment of the C repository for information generated a also be the first step in a multi-year ef program and geographical/database to the information developed through the | rther develop an Dil Spill Public as a result of th ffort to develop allow scientist e restoration eff | n information Information e Exxon Vala an interactiv s, managers a fort. | n manage Center in dez oil sp ve, multi- and the ge | ment system n September ill. This proj media compu eneral public a | that 1990 as a ect would iter access to | dissemination of information and research results obtained through the Trustee Council process | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
| 1 | 95090 | Mussel Bed Restoration and Monitoring in PWS and Gulf of Alaska | NOAA, ADEC | NOAA | PWS KEN | Cont'd | \$438.8 | Important to follow up on prior work to determine effectiveness of techniques being used. Questions regarding need to go outside of PWS for restoration. | | |
| | | Abstract This project would monitor during 1994, monitor natural recover Alaska, provide logistical and staff su in PWS (which index copepod popul and analysis costs for the field work of | r oil concentrat y levels of unre upport for comp ations) This p completed in 19 | ions in muss estored beds i prehensive sa project will a 994 (Project) | el beds an in PWS, K impling of lso suppor 94090) | d sediments (enai, and the mussels for t the report | restored e Gulf of pristane writing | Further consideration of this proposal needed in the context of other clam, mussel and sea urchin projects | | |
| 1 | 95092 | Recovery Monitoring of PWS Killer Whales | NOAA | NOAA | PWS | Cont'd | \$110.0 | Same basic proposal as 95013 (killer whale monitoring), but with narrower focus. NOAA and | | |
| | | Abstract This project would continu individual identification of killer wha structure and integrity within the AB j trends in abundance for the AB pod w | e a killer whale les within the A pod, and detern vithin PWS. | e monitoring AB pod; dete nination of k | effort inc rmination iller whale | luding count of killer what reproductiv | ing and ale pod e rates and | North Gulf Oceanic Society should collaborate on single killer whale monitoring project if possible. Questions regarding 20-year duration and sampling methods | | |
| 4 | 95093 | PWSAC: Restoration of Pink Salmon Resources and Services | Olsen, PWS Aquaculture Corporation | ADFG | PWS | NEW . | \$1,690.3 | Raises legal issue. Indications from legal counsel are that proposed use of settlement funds to support hatchery operations could require an EIS prior to a final | | |
| | | Abstract [•] The purpose of this project services to subsistence, commercial, a area Restoration methods would inci facilities, research into biological inter wild stocks, integrated monitoring of restoration, and collaboration of partir activities | t is to rehabilitative recreational and lude direct restributed direct restributed eractions, partice the fitness of siners to restore H | ate injured with a the injured with a series or a series or a series or a series of the series of th | and salmon and comr ogh use of ic effects of s and then grating and | stocks and a nunities in the available fish of cultured sate progress too l coordination | restore he PWS h cultural almon on ward g | determination of whether the project would be legally permissible. | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|--|---|--|---------------------------------------|--|
| 3 | 95095 | Quantification of Stream Habitat for Harlequin Ducks and Anadromous Fish Species from Remotely Sensed Data | Podolsky, Avian Systems, Inc | ADNR | ALL | NEW | \$88.0 | Questions regarding the proposed application of remote sensing (whether a sufficiently distinct "signature" for harlequin habitat can be identified) |
| | , | Abstract: This project would analyze potential harlequin nesting streams in system, the distribution of historical of fundamental goal of this project woul harlequins in support of land acquisition | aerial photos ar the spill area r current harleg d be to prioritiz on efforts. | nd satellite i With the aic juin nests w ze sites in te | magery to l of a geog ill be inco rms of the | ordentify and graphical info rporated. The ir potential t | d map ormation he to support | - |
| 3 | 95096 | Restoration of Murres by Way of Social Attraction and Predator Removal | Podolsky, Avian Systems, Inc | DOI | ALL | NEW | \$167.0 | Concept is not without merit. However, quality of proposal is low does not show command of literature and makes many assumptions. Insufficient |
| | | Abstract. This project would investig sound playback and presentation of de common murres This project would | ate the potentia coys or models include work b | l utility of a) at location oth within a | attraction s that wound and outside | trials (vocalı: Ild provide ha e the spill are | zation abitat for ea. | information to fully evaluate proposal. |
| 3 | 95097 | Restoration of Murres by Way of Transplantation of Chicks: A Feasibility Study | Podolsky, Avian Systems, Inc. | DOI | ALL | NEW | \$176 0 | Concept is not without merit. However, quality of proposal is low does not show command of literature and makes many assumptions. Insufficient |
| | | Abstract: This project would conduct ascertain whether transplantation and employ in restoration efforts for comm | information to fully evaluate proposal. | | | | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|------|-------------|--|--|--|--|---|--|---|--|
| 3 | 95098 | Identification of Seabird Feeding Areas from Remotely Sensed Data | Podolsky | DOI | ALL | NEW | \$74.0 | Concept is not without merit. However, quality of proposal is low does not show command of literature and makes many assumptions. Insufficient | |
| | | Abstract This project would collect a abundance of seabirds within foraging measure productivity of the ocean wit AVHRR and/or Landsat data; and exa ocean productivity. | and analyze ex g distance of isl hin foraging di mine the degre | isting inform lands and sho stance of the to which se | ation abor ores impac se islands abird disti | at the distributed by the of and shore us button correction | ution and l spill, ing lates with | information to fully evaluate proposal. | |
| 3 | 95099 | Murrelet Vocalization in Conjunction with Artificial Nests: A Possible Means of Attraction to Habitat | Podolsky | DOI | ALL | NEW | \$77 0 | Concept 1s not without merit. However, quality of proposal 1s low does not show command of literature and makes many assumptions. Insufficient information to fully evaluate proposal. | |
| | | Abstract: This project would investig murrelets can be attracted to vocalizat whether murrelets can be attracted to, playback. | ate and conduc ion playbacks (, or will use, ar | t experiments or other relev- tificial nests | s to detern ant sounds with or w | nine whether s and determ 1thout vocali | marbled ine zation | | |
| 1 | 95100 | Administrative Budget | Executive Director's Office | ALL ` | ALL | Cont'd | \$3,600 0 | Reflects a more than 30% reduction in costs from FY 94 authorized. | |
| | | Abstract [.] This project would provide information and science program man Executive Director's Office and Opera Restoration Work Force and the Chie process. | for the on-goi agement effort ations, the Pub f Scientist cont | ng, overall ad t This project lic Advisory tract includin | dministrat at includes Group, the g the scien | ton, public funding for e multi-ageno ntific peer rev | the cy view | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|---|---|---|--|--|--|--|--|--|
| 5 | 95102-CLO | Closeout: Murrelet Prey and Foraging Habitat in Prince William Sound | DOI | DOI | PWS | Closeout | \$63 8 | Closeout of prior year work. Budget needs further review. | | |
| | | Abstract. This project would suppor report for FY 94 Project 94102 | t the cost of ana | lyzing projec | et data and | d preparation | of a final | | | |
| 1 | 95105 | Kenai River Ecosystem Restoration Pilot Enclosure Study | ADFG | ADFG | KEN | NEW | \$404 8 | Further clarification needed on interrelationship of this project to other major Kenai River sockeye projects 95255 (Kenai sockeye restoration) and 95258 (sockeye | | |
| | | Abstract This project would extend with emphasis on sockeye salmon enclosures in Skilak Lake to determi would be used to allow experimenta- to determine costs and benefits of a l escapement changes or nutrient additional second secon | l ongoing invest The project wou ne possible reste l manipulation c arger scale prog tions to simulate | igations of in ald initiate a pration strate of fish density ram such as of fish carcass | njury to the pilot restor- gies. The y and nutrichanging decomposition | ne Kenai Rivo pration project proposed en ments on a lin fry recruitme spition. | er system ct using iclosures nited scale ent through | 95255 (Kenai sockeye restoration) and 95258 (sockeye salmon overescapement) A comprehensive review of the Kenai River sockeye restoration effort is needed. | | |
| 1 | 95106 | Subtidal Monitoring: Eelgrass Communities | Jewett, UAF | ADFG | PWS | NEW | \$200.4 | History of other spills demonstrates long lasting effects on soft sediment environments. Data suggests that | | |
| | | Abstract: This project would reexam assess the recovery of eelgrass comm and biomass of dominant taxa betwee (control) sites would be studied. | nine sites previo nunities by spati en paired (oiled | follow-up to FY 93 study needed. | | | | | | |

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| Cat. | Project No. | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|--|---|---|-----------------------------------|--|
| 4 | 95107 | Subtidal Site Verification Abstract. This project proposes to te demonstrate that the site selection pro- inherent differences among oiled and | Jewett, UAF st the ability to ocess used produ control paired s | ADFG match oiled uced no biase tudy sites | PWS and contr as that ma | NEW rol sites and t y have result | \$56.2 to ed in | Proposal is duplicative of 95086A [see 95086A General Objectives 1(b) and (c)]. Focus on preparation for future oil spill or disturbance raises legal concern. Retrospective analysis of methodology does not warrant expense. |
| 5 | 95110-CLO | Closeout: Habitat Protection and Acquisition Abstract: This project would comple acquisition during 1994, including th FY 94 Project 94110 | ADNR te the evaluatio e Small Parcel I | ADNR n of lands no Process, and | ALL ominated preparatio | Closeout for possible h on of a final r | \$143.9 nabitat report for | Further examination of budget needed. Proposed budget includes 84.0 that will be carried forward from FY 94, and 60.0 in FY 95 funds. Project funds three months of the work group in FY 95. |
| 3 | 95111 | Sustainable Rockfish Yield Abstract This project would compile relative rockfish population size and that assures recovery of damaged rock | ADFG e and analyze ex composition wi kfish stocks and | ADFG tisting data a th a goal of o long-term so | ALL nd condu developin ustainable | NEW ct surveys to g a managem yield | \$222.6 estimate nent plan | Not a high priority. Further work on rockfish should await final report on earlier studies Proposal would seem to fall within the purview of normal agency responsibility. |
| 3 | 95112 | Rockfish Restoration Objective Abstract. This project would synthes recovery objective and making recom (such as marine reserves/refuges) are | ADFG size existing dat imendations on needed to meet t | ADFG a on rockfisl whether mon the defined o | ALL h with the nitoring o bjectives. | NEW goal of deve r restoration | \$53 7 cloping a activities | Not a high priority Further work on rockfish should await final report on earlier studies. Proposal would seem to fall within the purview of normal agency responsibility. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | ' New or Cont'd. | FY 95 Cost | Notes | |
|------|-------------|---|---|--|---|--|--|--|--|
| 3 | 95113 | Energetics of Intertidal Fish: The Connection between Lower and Upper Trophic Levels | Barber, UAF | ADFG | PWS KEN | NEW | \$392 5 | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the many other proposals being advanced to study trophic | |
| | | Abstract: This project would investig the intertidal area of PWS utilized by would include determination of the set the crescent gunnel and the tidepool s species; and determination of the ener- fish species. | gate the bioenerg pigeon guillem easonal energy co sculpin; determin rgy content of m | getic aspect ots and rive ontent of th nation of th ajor prey sp | s of three : er otters. I e high coc e prey iten pecies of th | fish species in Project object kscomb prick ns of these th nese three into | nhabitıng ives kleback, ree fish ertidal | nteractions of forage fish with particular emphasis on relationship to other proposed pigeon guillemot studies. Project not sufficiently driven by questions pertaining to predators. | |
| 3 | 95114 | Eelgrass Community Structure Restoration Assessment Using Stable Isotope Tracers Abstract: This project would contribu dynamics of eelgrass beds in PWS T nutrogen to trace transfers of carbon a | Kline, PWS Science Center ute to an interdis The project woul nd nitrogen betw | ADFG ciplinary et d use stable veen trophic | PWS ffort focus e isotope r c levels | NEW ed on food we atios of carbo | \$145.1 eb on and | Objectives of this project need to be integrated with those other projects involving stable isotopes under the direction of the Chief Scientist. Issues addressed by this project are of a lower priority than those proposed in other projects. | |
| 1 | 95115 | Sound Waste Management Plan | PWS Economic Development Council | ADEC | PWS | NEW | \$352.2 | Not yet reviewed by legal counsel. Proposal needs to address relationship to injured resources and services, rather than preparation for future spills. Should further review relationship to 95417 (waste oil facilities). | |
| | | Abstract: This project would fund the efficient and cost-effective regional of preventing pollution that might other further stress or delay recovery of inj allow natural recovery to proceed with | · , | | | | | | |

| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|--|--|--|--|--|
| 4 | 95116 | Restoration of Intertidal Oiled Mussel Beds by Nondestructive Manipulation/Flushing with PES-51 Abstract: This project proposes to tes (PES-51) to remove residual oil in m | Rog, PES Services AK, Inc t the effectivene ussel beds that i | ADEC ess of using may be affect | PWS a specific cting intert | NEW chemical age idal commu | \$453 2 ent nuties. | Proposal as written raises policy issue (use of public funds to support non-competitive private product testing). Idea may be appropriate for a competitive RFP on various alternative cleanup methods for remaining oiled situations (not just mussel beds and not just PES-51) See Project 95266. |
| 1 | 95117-BAA | Harbor Seals and EVOS: Blubber and Lipids as Indices of Food Limitation Abstract This project would utilize b The project proposes to analyze both determine whether there has been a sh and after the oil spill | Castellini, UAF lubber analysis historical as we aift in harbor sea | NOAA methods to all as content al body conc | ALL test body aporary blu lition betw | NEW status of hard ibber sample een the time | \$94 4 bor seals as to before | Potential opportunities for collaborative effort and cost efficiencies between this project and Projects 95001 (condition and health of harbor seals) and 95064 (monitoring, habitat use and trophic interactions of seals) must be addressed |
| 1 | 95118-BAA | Diet Composition, Reproductive Energetics and Productivity of Seabirds Damaged by the <i>Exxon Valdez</i> Oil Spill Abstract: This project would investig energetics and productivity of fish-ea guillemots and black-legged kittiwaka preferred (high lipid/energy content) comparative biochemical composition implications for seabird reproductive forage fish prey resources | Roby, UAF ate the effects o ting seabirds in es as bioindicato fish in PWS. Th and physiologi success as a res | NOAA f diet compo PWS. The pros of the dis he project w ical condition sult of the var | PWS osition on a project wo tribution a ould provion of forag rying nutr | NEW the reproduct uld focus on nd abundance de informati e fishes and itional qualit | \$140.6 tive pigeon e of on on the y of | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the many other proposals being advanced to study trophic interactions of forage fish. Peer reviewers thought very highly of this project; strong technical merit. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|--|--|---|---|--|--|
| 3 | 95119-BAA | Food Limitation on Recovery of Injured Marine Bird Populations | Sydeman, Point Reyes Bird Observatory | NOAA | OUT | NEW | \$124 9 | Good technical proposal addressing limitation on seabird recovery. However, focus on California data may not provide useful information for Alaska birds. |
| | | Abstract: This project proposes a two alcid diet and at-sea foraging ecology and application of population models of population growth to specific dem proposed work utilizes a unique 24-y Bird Observatory (PRBO) on the Far | o part investigat in relation to de to predict populographic and pr ear time series of allon Islands an | ion involvir mographic j ilation recov ey availabil of alcid ecol d in the Gul | ng (1) a ret parameters very and es ity pattern ogy collec f of the Fa | rospective ar , and (2) dev timate the se s. The core of ted by the Po rallones off (| nalysis of elopment insitivity of the vint Reyes Califorma | |
| 1 | 95120-BAA | Proximate Composition and Energetic Content of Selected Forage Fish Species in PWS Abstract. This project would assess, species important to various mamma murre, harlequin duck, marbled murr of models which may yield reasons f on seasonal and annual changes in th PWS The study would provide the b many species in PWS | Worthy, Texas A&M University on a seasonal ar lian and seabird relet, pigeon gui or the lack of re- ne proximate con background data | NOAA nd annual ba predators (s llemot). The covery. The nposition of for future st | PWS asis, the va sea otter, h is data wor e focus of t f the major tudies of fo | NEW lue of major arbor seal, co ild allow dev his research forage fish s bod web dyna | \$43.0 prey ommon velopment would be species in amics of | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the many other proposals being advanced to study trophic interactions of forage fish. Project needs to demonstrate a close relationship with other projects including 95163 (forage fish) and 95320U (somatic and spawning energetics of herring and pollock). Strong qualifications of proposer |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|---|---|---|--|---|---|---|--|--|
| 2 | 95121 | Stable Isotope Ratios and Fatty Acid Signatures of Selected Forage Fish Species in PWS | Worthy, Texas A&M University | NOAA | PWS | NEW | \$48.1 | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the many other proposals being advanced to study trophic | | |
| | | Abstract This project would provide which are the prey of marine mamma necessary for future studies of food we species (whales, seals, birds and fish) analysis and stable isotope-fatty acid | baseline diet, er ls and birds in P eb dynamics año The project w analysis | nergy, and the PWS in order decology of vould make | ophic leve r to provid food resor use of isot | l data of fisl e backgrour urces used b ope analysis | h species nd data by many s, fatty acid | project need to be integrated into other projects involving stable isotopes under the direction of the Chief Scientist. Utility of fatty acid studies needs careful assessment. | | |
| 3 | 95122 | Mapping Potential Nesting Habitat of Marbled Murrelets in PWS Using Geographic Databases | DeVelice | USFS | ALL | NEW | \$167.5 | Benefits to restoration efforts beyond large parcel evaluation process needs further articulation. This project would use data collected in Trustee Council funded studies in FY 92-93 to characterize nesting | | |
| | J | Abstract This project would extend p murrelets in the spill area The propo models previously developed (DeVel would be linked to geographic databas potential nesting habitat of marbled m preparation of maps to provide a futur options | rior research that sed work would ice, et al. 1994 a ses of vegetation nurrelets in PW re means of eva | at characteri d apply the c and Kuletz, n and physic S The pro- luating habi | zed nesting conceptual et al. 1994 cal site char ject would tat protect | habitat of r and quantit) These ma racteristics r result in the on and acqu | marbled ative odels regarding e uisition | habitat and to develop model to predict nesting habitat that could be used by private Indowners. | | |
| 4 | 95123 | Tatitlek Community Store | Komkoff, Tatıtlek IRA Councıl | ADFG | PŴS | NEW | \$300 0 | Raises legal issue. Not restoration of a natural resource upon which the subsistence service depends. | | |
| | | Abstract This project would fund the for the Native Village of Tatitlek. | inity store | | | | | | | |
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| | APPENDIX A | - Summary Information | | | | | | Page A - 39 | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|--|--------------------------------|---------------------------|-------------------------------|---------------------------|---|
| 4 | 95124A | Tatitlek Mariculture Development Project | Daisy, Tatitlek IRA Councıl | ADFG | PWS | NEW | \$109.5 | Raises legal issues Clarification regarding the project's natural resource restoration objectives is needed. |
| | | Abstract: This project would, togethe and operation of a mariculture facility | r with Project 9 for the Native | 5124B, fund Village of T | l the devel atitlek. | lopmenț, con | struction | , |
| 4 | 95124B | Tatitlek Mariculture Development Project - Capital Outlay | Daisy, Tatıtlek IRA Council | ADFG | PWS | NEW | \$405.0 | Raises legal issues. Clarification regarding the project's natural resource restoration objectives is needed. |
| - | | Abstract: This project would, togethe and operation of a mariculture facility | r with Project 9 for the Native | 5124A, fund Village of T | l the deve `atitlek. | lopment, co | nstruction | |
| 4 | 95125 | Tatitlek Sockeye Salmon Release Program | Komkoff, Tatitlek Traditional Councıl | ADFG | PWS | NEW | \$39.0 | Raises legal issues. Proposed as a replacement resource for subsistence. Questions regarding injured resource (sockeye) being replaced. Technical concerns regarding potential impacts to wild stocks, source of |
| | | Abstract: This project would fund ren Native Village of Tatitlek. | note release soci | keye project | s at variou | is locations n | ear the | brood stock and potential for disease. |
| 1 | 95126 | Habitat Protection and Acquisition Support | ADNR | ADNR | ALL | Cont'd | \$1,099.5 | Further consideration of budget needed (possible lapse of some FY 94 funds). |
| | | Abstract: This project provides fundi and acquisition efforts of the Trustee this support effort during FY 95. | ng for the activ Council. The b | ities necessa pudget for th | iry to supp is project | oort habitat p assumes con | protection npletion of | |
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| Cat. | Project No | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|------------|--|--|---------------------------------|--------------------------|--------------------------------|---------------------|---|
| 4 | 95127 | Tatitlek Coho Salmon Release Program | Komkoff, Tatitlek Traditional Council | ADFG | PWS | NEW | \$39.0 | Raises legal issues. Proposed as a replacement resource. Technical merit appears high. |
| | | Abstract: This project would fund the Solomon Gulch Hatchery to create a ratitlek. | production and remote release c | l release of 5 oho fishery | 50,000 col near the N | no salmon sr Iative Village | polt at the e of | |
| 4 | 95128 | Teaching Subsistence Practices and Values Abstract: This project would provide | Callaway, NPS funding for a sp | DOI birit camp wi | PWS here youn | NEW g people fror | \$69.0 m PWS | Raises legal issues. Does not address natural resource restoration (direct restoration of service without restoration of resource). |
| | | communities would learn how to harv under the guidance of elders and other | experienced ind | l distribute a lividuals. | variety o | f subsistence | resources | ł |
| 4 | 95129 · | Tatitlek Fish and Game Processing Center and Smokery | Komkoff, Tatitlek IRA Council | ADFG | PWS | NEW | \$515.5 | Raises legal issue Relationship to restoration of natural resource unclear |
| | | Abstract: This project would fund the processing-storage-smokery facility i | design and cons n the Native Vi | struction of a llage of Tati | a year-rou tlek. | nd fish and g | ame | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | ['] FY 95 Cost | Notes |
|------|-------------|--|--|---|--|---|---------------------------------------|--|
| 4 | 95130 | Mental Health Center | Vlasoff, Chugachmuit and Copper Mountain Foundation | ADFG | ALL | NEW | \$106.1 | Raises legal issue. Relationship to restoration of natural resource unclear. |
| | | Abstract. This project would provide would be based on the cultural values access to counseling to Native and no associated with the the loss of lifesty drug and alcohol abuse. | for the developr s of the Native po on-Native people le since the oil s | nent of a Me eople and we on delayed pill, and the | ental Heal ould provi grief, pos issues sur | th healing ce ide training ir t traumatic st rrounding inc | nter that n and ress creased | - , |
| 1 | 95131 | Clam Restoration (Nanwalek, Port Graham, Tatitlek) | Nanwalek and Port Graham Village Councils | ADFG | PWS KEN CI | NEW | \$445.0 | This could potentially be a valuable project to restore clams if success of culture technique is demonstrated first on a pilot project basis Benefits would be greatest if project could restore injured clam beds. |
| | | Abstract. This project would develop populations for subsistence use in the part of this project would enable the to provide the needed quantities of se villages. | the technology e Nanwalek/Port Qutekcak hatche edstock for deve | and begin to Graham and ry of the Qu loping popu | reestabli d the Tati- tekcak Na lations of | sh local clam tlek areas A tive Tribe of clams near N | major Seward lative | Long-term cost of project needs consideration (\$2.25 million). Extent of required NEPA analysis not clear. |

| Cat. | Project No. | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|---|---|--|---|--|
| 2 | 95132 | Port Graham and Nanwalek Subsistence Baseline | Port Graham Village Council, Nanwalek Village Council | ADFG | PWS | NEW | \$518.7 | Questions about scope of project (service area) and expense. Trustee Council previously indicated that 1994 would be last year of subsistence food testing (Project 94279) Budget needs examination. Relationship to Project 95279 (subsistence restoration project) needs further consideration. |
| | | Abstract: This project would support data on all subsistence salmon fishin Graham and Nanwalek. This project information to the residents of Port in their traditional harvest areas. The exposure for comparison in the eve | rt a subsistence for ng and shellfish-g t would provide s Graham and Nan he project would a nt of another oil a | oods testing gathering are pecific, detai walek on the also provide spill. | program t as used by iled and co safety of a baseline | o establish bay the people of proprehensive subsistence r of hydrocarb | aseline of Port e resources oon | ~ |
| 2 | 95133 | English Bay River Sockeye Salmon Subsistence Project | Kvasnikoff, Nanwalek Traditıonal Council | ^C ADFG | KEN | NEW | \$147.2 | Technical questions regarding effectiveness of proposed methods, the potential impact of competition and genetic impacts. Clarification needed regarding status of on-going project effort and alternative funding |
| | | Abstract This project would provid increase the local sockeye run. Spe sockeye eggs for incubation at the H English Bay lakes for rearing, and r hold-over smolt in the English Bay | ans to Bay s in he | sources. | | | | |

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| – Cat. | Project No | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|-----------|------------|--|--|--|--|---|--|---|
| 4 | 95134 | Chenega Bay Mariculture Development Project | Evanoff, Chenega Bay IRA Councıl | ADFG | PWS | NEW | \$184 3 | Raises legal issues. Clarification regarding the project's intended natural resource restoration objectives is needed. |
| | | Abstract: This project would fund the and technical assistance to support an | e cost of equipm nd expand the Ch | ent purchase nenega Bay | es and pers Maricultur | sonnel for m re Project | arketing | , |
| 4 | 95135 | Subsistence Harvest Support | Chenega Bay Village IRA Councıl | ADFG | PWS | NEW | \$50.0 | Raises legal issues Unclear how proposed project restores natural resource. This project was previously funded by DCRA. |
| | • | Abstract: This project would provide fishing. Funds would be used to hire hunters on a specified number of trip safety. | funds to offset t larger diesel po s in order to cov | the increased owered boats er a larger a | l cost of st s for the pu rea more e | ubsistence hurpose of tra efficiently wi | unting and nsporting ith greater | |
| 4 | 95136 | Skin Sewing Crafts Restoration | Callaway, NPS | DOI | PWS | NEW | \$29.9 | Raises legal issues Unclear how proposed project restores natural resource |
| | | Abstract. This project would support Bay, Tatitlek, Port Graham, Nanwald subsistence related service. | t skin sewing wo ek, Cordova, and | orkshops in 1 Valdez as | the comm a means of | unities of Cl f sustaining | henega this | |

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| Cat. | Project No. | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|--|---|--|--|--|--|--|--|--|
| 1 | 95137 | Prince William Sound Salmon Stock Identification and Monitoring Studies | ADFG | ADFG | PWS | Cont'd | \$277.5 | Provides substantial opportunity to track success of restoration efforts and improve management of chum and sockeye stocks. Could contribute to life-history | | |
| | | Abstract: This project would support hatchery stocks of chum, sockeye, co contributions of hatchery and wild st used by fishery managers to more sel harvest levels. | the recovery of who and chinook ocks to the fish ectively target l | f coded wire that will pro- ery. Information hatchery stoo | tags from ovide info ation from cks in orde | previously ta rmation on th this project r to sustain h | agged he relative would be higher | models of these species. | | |
| 1 | 95138 | Elders/Youth Conference | Fall, Subsistence Division | ADFG | ALL | NEW | \$85.8 | Potentially valuable project if conference focused on transfer of knowledge that will contribute to the recovery of injured natural resources Project could | | |
| | | Abstract: This project would promot spill area through a conference that w area communities. Conference goals communities and the subsistence skill The role of traditional knowledge in the Proceedings would be published and a | e the recovery of rould involve el would focus or ls which have be informing peop a video produceo | of subsistenc ders, youth a i identifying een affected le about the i | e uses of 1 and other r the comm and need t spill's effe | natural resound epresentative on experience o be strength cts would be | rces of the es of spill es of lened. explored. | possibly be designed to facilitate exchange of traditional knowledge between subsistence community residents and agency/scientific researchers Project description needs to be reworked to establish clear project objectives that will contribute to the restoration of natural resources upon which subsistence services depend. | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|---|---|--------------------------|----------------------------------|-------------------------|---|
| 2 | 95139A | Spawning Channel - Port Dick Creek | ADFG | ADFG | KEN | Cont'd | \$33.2 | Funding for this project was provided in FY 94 as part of Project 94139 but was deferred by ADFG pending |
| | | Abstract. This project would constru (lower Kenai Peninsula) to accelerate | ict a pink and e and restore s | chum spawni almon stocks | ng channe lost to the | l at Port Dick local seine fl | < Creek leet. | further review of the cost-benefit ratio. During FY 94, some funds from this project were reallocated to address herring disease effort (project 94320S). Project still has support among Kenai commercial fishermen and should be reviewed in light of limited restoration options for this region |
| 5 | 95139B | Closeout: Otter Creek/Shrode Creek Instream Restoration | USFS | USFS | PWS | Cont'd | \$5.2 | Closeout and report writing for Otter Creek and Shrode Creek work funded in FY 94 as part of project 94139. |
| | - | Abstract This project would provide activities at Otter Creek (Knight Islar FY 94 as part of project 94139 (salm | e for the comp nd) and Shrode non instream re | letion of final Creek (weste estoration). | reports of rn PWS) (| n instream re hat were aut | storation horized in | |
| 2 | 95139C | Montague Riparian Rehabilitation | USFS | USFS | PWS | NEW | \$46.2 | Proposal needs further clarification regarding injured resources and restoration objectives to be addressed by |
| | | Abstract: This project is a continuat (authorized for 2 years by the Truster fund the monitoring and evaluation of measures on Montague Island design erosion and restore natural flows and | 4139 ect would tion o prevent | project. | | | | |

APPENDIX A - Summary Information

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | |
|------|-------------|--|--|---|--|--|---|---|--|--|
| 3 | 95139D | Salmon Instream Habitat and Stock RestorationPink Creek and Horse Marine Barrier Bypass Development | ADFG | ADFG | KOD | NEW | \$61.5 | Low technical merit. Unless maintained, improvements may not yield desired results. Questions regarding incremental benefits to area salmon runs. Benefit/cost needs further examination | | |
| | | Abstract. This project would expand two additional salmon instream resto injured salmon spawning habitat by of bypasses at Horse Marine Creek (| d upon efforts in ration projects. T providing access Kodiak) and at Pi | tiated in FY These projectory to existing ink Creek (A | 94 (Proje ets are des habitat the Afognak) | ct 94139) to igned to repl rough the co | include ace onstruction | | | |
| 4 | 95140 | Subsistence Skills Program | Olsen, Valdez Native Association | ADFG, | PWS | NEW | \$36.7 | Raises legal issues Unclear how proposed project restores natural resource. | | |
| | | Abstract: This project would provid subsistence skills, communication be Classes would be provided in variou Native drumming and dancing. Supp as potlatches, as well as storytelling | e funding for pro etween the gener s activities, inclu port would also b by elders | ograms to su ations and t ding surviv e provided | apport the to promote al skills, c for comm | passing on o community arving, bead unity gatheri | of healing. ing and ings, such | - | | |
| 4 | 95141 | Afognak Island State Park Interim Support | ADNR | ADNR | KOD | NEW | \$309 4 | Raises policy issue (normal agency management responsibilities). | | |
| | | Abstract. This project would provide interim support for management until such time as the state can secure monies for that purpose. Most of the request would support movement of overburden back onto nine miles of road surface to hasten revegetation of some existing logging roads This is in addition to the requirement that the seller stabilize road surfaces. | | | | | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|------|-------------|--|--|---|---|---|---|---|--|
| 2 | 95159 | Surveys to Determine Additional Oil Spill Effects and Recovery of Marine Bird and Sea Otter Populations in PWS | DOI | DOI | PWS | Cont'd | \$426 8 | Recommended frequency of monitoring is every 3 years; last surveys were done under this project in winter 1994 Could be deferred until 1996, although there is also a concern that the FY 94 survey was | |
| (| | Abstract. This project would support distribution and abundance of marine compared to data collected prior to the abundance in PWS. | t the continuati birds and sea of e spill to ascert | on of small to otters in PWS ain trends in t | boat surve These p marine bir | ys to monito ost-spill data d and sea ott | or the a will be ter | winter only (not in summer) and that each year additional species have been found to occur in lesser numbers in oiled areas than in unoiled areas. Questions of statistical power of survey methods. | |
| 1 | 95163 | Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species | NOAA | NOAA | PWS KEN | Cont'd | \$1,294.6 | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the many other proposals being advanced to study trophic | |
| | | Abstract. This project would continue on the distribution, abundance and av sandlance, capelin, macrozooplanktom harbor seals, pigeon guillemots, marb pink salmon) Diet overlap and prey This information (trophic position and the basic structure of future ecosystem | e an effort initiality of im ailability of im a, squid) to pred led murrelets, selection amond iniche overlagen models | ated in FY 9- portant prey datory species common mur og forage fish among spec | 4 (Project species (e s affected res, black species w ies) would | 94163) cond g, herring, by the oil sp -legged kitti 'ill also be ei be used to o | centrating pollock, ill (i.e, wakes and xamined. establish | many other proposals being advanced to study fromic interactions of forage fish. Project scope may need to be reduced in light of slow start up of 1994 pilot study Coordination of hydroacoustics work in 95320N is essential. | |
| 6 | 95165 | Carry-forward: PWS Herring Genetic Stock Identification | ADFG | ADFG | PWS | Carry | \$105.4 | This project was authorized at 62 2 in FY 94 but not implemented due to failure of the PWS herring run. | |
| | , | Abstract: This was a pilot project fun genetics of PWS herring populations stocks The goal is to be able to disti- target on healthy stocks. The project continued in FY 95 without any new a | ided in FY 94 i that could help nguish among was delayed in additional func | ntended to pro- minimize has stocks, so th or FY 94 It is ling. | rovide info arvest pres at harvest s proposec | information on the pressures on injured vests can be managed to osed that the project be | | FY 95 budget for 95165 will carry forward FY 94 funds. (RFP may be issued before end of FY 94 that will encumber FY 94 funds for herring stock identification.) | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|------|--------------|--|---|---|---|--|--|--|--|
| 1 | 95166 | Herring Natal Habitats Abstract: This project would provid monitor the recovery of the PWS h about the survival of eggs as well a previous oil spill damage assessment Abundance estimates from this proj | ADFG de a direct measu erring populatio as information the nt results and im- plect would be use | ADFG are of Pacific I n. This proje- nat would assi prove the und ed to set comm | PWS herring ab ct would p st in the m lerstanding mercial ha | Cont'd undance in o provide infor nterpretation g of long terr rvest strategi | \$512.8 order to crnation of m damage. ies. | Need to coordinate with 95320T (juvenile herring growth). Need to clarify project cost and participation of project personnel | |
| 1 | 95173 | Factors Affecting Recovery of PWS Pigeon Guillemot Populations Abstract. This project would conti (Project 94173) and build upon an (Project 93034) and damage assess attempt to determine whether food, limiting the recovery of pigeon gui analysis of data and report writing | DOI nue the FY 94 p extensive survey nent work (Bird predation, direc illemots in PWS of FY 94 work | DOI ageon guillen y of pigeon gu Study 9). Th tot toxicity fror This projec | PWS not recove nillemot co e FY 95 v n oil or ad t would a | Cont'd ry monitorin olonies in PV vork effort w lult mortality lso support t | \$408 8 ng effort WS yould y is the | This project needs to be further evaluated under the direction of the Chief Scientist in the context of the many other proposals being advanced to study trophic interactions of forage fish. | |
| 1 | 95191A | Investigating and Monitoring O Related Egg and Alevin Mortalities Abstract: This project, together wi pink salmon eggs and alevins in PV mortality by examining survival of | oil ADFG th 95191B, cont WS The projec eggs and fry in | ADFG tinues to invest t would contin oiled and uno | ALL stigate mo nue to inv iled strear | Cont'd ortality rates o estigate pink ns. | \$265.0 of wild c salmon | A critical, on-going study effort (together with 95191B) to evaluate the possibility of long-term, heritable damage to salmon Already extensively peer reviewed in prior years. | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|---------------|---|--|--|---|---|---|--|
| 1 | 95191B | Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study | NOAA | NOAA | ALL | Cont'd | \$331.0 | A critical, on-going study effort (together with 95191A) to evaluate the possibility of long-term, heritable damage to salmon. Already extensively peer |
| | , | Abstract This project continues an that oil contamination during incube damage. (See also 95191A) | experimental, l ation can result | aboratory-bas in functional | ed effort sterility a | to test the hyperial test the hyperial test the hyperial test is a result of the hyperial test is a result of t | pothesis inheritable | reviewed in prior years. |
| 5 | 95199-CLO | Institute of Marine Science - Seward Improvements EIS | ADFG | ADFG | ALL | Closeout | \$45.9 | Project would close out the EIS process for the Institute of Marine Science improvements at Seward. |
| | | Abstract [•] This project would close Statement (EIS) for the proposed ex of Marine Science in Seward The p analysis needed to develop a recomm approriate and legally permissible to up to \$25 million. The Trustee Com October 1994 | out the process pansion and im project would p nendation regar o support propo uncil is likely to | for preparation provement of rovide for the ding the use of sed improvem to consider this | on of the F research completion f settlements with s recomm | Environmenta facilities at th on of consulta nt funds that an estimated endation in la | al Impact the Institute ation and would be cost of ate | , , , |
| 3 | 95200 | Public Access | USFS | USFS | PWS | NEW | \$50 2 | Link to restoration vague. The state portion of this |
| | | Abstract Phase I of this project wo access public lands and publication of the project would support the ma | ould support the of this informa rking of easeme | identification tion in atlases ents | and map for publi | ping of easer c distributior | nents to n. Phase II | project proposal has already been funded from other sources. For remainder of project, benefits to injured resources or services unclear Brief project description no longer accurately describes proposed project activity Proposed project is linked to access issue being discussed by the Trustee Council as part of habitat protection and acquisition efforts. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | F¥ 95 Cost | Notes |
|------|-------------|--|---|--|--|--|---|---|
| 1 | 95244 | Seal and Sea Otter Cooperative Subsistence Harvest Assistance Abstract. Project would work coope subsistence harvests of harbor seals a species, and to identify ways to reduce effort Also proposed is an information including subsistence users, about cur- populations. | ADFG ratively with sind sea otters and the these impact ional program rrent status and | ADFG ubsistence hun nd other factor ts. This project that would be that would be trends in har | PWS KEN nters to a rs on the r ct would used to i bor seal a | Cont'd ssess the imp recovery of th continue FY nform the pu nd sea otter | \$89.9 bact of hese 94 project iblic, | Proposal appears well-prepared, cost effective. Should be integrated with sea otter Projects 95159 (bird and sea otter survey), 95025B (sea otter abundance and distribution) as well as other community outreach efforts. Proposal needs further consideration in context of other subsistence priorities. Need to ensure close coordination with projects 95001 (condition and health of harbor seals) and 95064 (monitoring, habitat use and trophic interactions of seals). |
| 1 | 95255 | Kenai River Sockeye Restoration Abstract. Project would continue the River stocks in mixed stock Cook In season is in progress This project is Kenai River stocks, as well as among would allow fishery managers to targ stocks | ADFG collection of g let fisheries an designed to al g Kenai, Kasilo get the fisheries | ADFG genetic stock i d to monitor l llow fisheries of and Susitna s most efficien | KEN informati harvest of manager a River st htly while | Cont'd on to identify various stoc s to distingui ocks. This e protecting K | \$645.0 y Kenai cks while csh within ffort Kenai | Last year of field work for project (report writing in FY 96) Further clarification needed on relationship of this project to other major Kenai River sockeye projects 95105 (Kenai River ecosystem pilot enclosure study) and 95258 (sockeye salmon overescapement) as well as review of entire Kenai River sockeye effort |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|------|-------------|---|--|---|---|---|---|--|--|
| 1 | 95258 | Sockeye Salmon Overescapement | ADFG | ADFG | KEN KOD | Cont'd | \$998.1 | Future funding should depend upon completion and comprehensive assessment of past work A phase-out | |
| | | Abstract. This project would continue spawning overescapements on the pro- impacted sockeye ecosystems in the attributes (number, age, size) of both normal escaped sockeye nursery lake production and returns, and develop a of the decline and potential restorative and the Kenai Peninsula. | te examination o ogeny and assoc spill area. Prop resident and mi s; investigate ef a pilot research p e actions The s | of the effects viated foragin osed studies grant juvenile fects of over project to dete studies would | of the lar ag habitat i would est e sockeye escapemen ermine exp 1 be locate | ge 1989 sock n nursery lak imate biologi in overescap at on normal perimentally d on Kodiak | eye tes of cal ed and smolt the cause Island | schedule research less frequently Further clarification needed on relationship of this project to other major Kenai River sockeye projects 95105 (Kenai River ecosystem pilot enclosure study) and 95255 (Kenai sockeye restoration) | |
| 3 | 95259 | Restoration of Coghill Lake Sockeye Abstract: This project would continu years), to restore the natural product of liquid fertilizer, the project would levels, primary and secondary produc fertilization; and estimate the effect of ratio. | ADFG the fertilization, r ivity of Coghill support the inve- ction and plankto of fertilization of | ADFG ecommendec Lake in PW3 estigation of on species co n lake carryin | PWS I for one s S. In addit the respondent of the respondent omposition ing capacity | Cont'd ockeye life cy tion to the ap use of the lak as a result o y and smolt-to | \$333.0 ycle (5 oplication e nutrient f o-survival | Questions about technical feasibility Needs further review Effectiveness of fertilizer in this lake is uncertain ADFG extremely concerned that if Coghill Lake fishery does not recover, these stocks may be designated as endangered. Coghill Lake sockeye problems predate EVOS Restoration of sockeye is considered a replacement resource for commercial and recreational fisheries in PWS. | |
| 2 | 95266 | Shoreline Assessment and Oil Removal Abstract: This project would fund a remove residual oil from 3 - 6 beacher restoration This project would also Project 94266. | ALL competitive Re es in western PV fund the data an | ADEC quest for Pro VS that have halysis, and re | ALL oposal (RF been iden oport writi | Cont'd P) soliciting tified as in ne ng costs of F | \$1,411.1 bids to eed of Y 94 | Budget should be reviewed for possible reduction. Includes report writing and completion of prior year project (94266). Some alternative funding may be available. | |

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| Cat. | Project No | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|------------|---|---|---|--|--|---|--|
| 1 | 95272 | Chenega Chinook Release Program | Olsen, PWS Aquaculture Corporation | ADFG | PWS | Cont'd | \$47.2 | Potential for cost recovery in long-term. May be eligible for criminal funding. |
| | | Abstract This project would continued smolt in Crab Bay (western PWS). Smolt with the goal of eventually est Bay. Project intended to provide a result with benefits to commercial and sport | ue a FY 94 proj The FY 95 effor tablishing a retu eplacement resou rt fishermen in a | ect involvin t would con rn of 2,000 urce for the s addition to s | g the relea tinue the r adult chin subsistence ubsistence | elease of chinoo elease of chi ook salmon e users of Chi users | k salmon nook to Crab enega, | |
| 2 | 95279 | Subsistence Restoration Project Abstract: This project would continue safety to communities in the spill are Newsletter would report information context for subsistence users The p of abnormal resources from subsisten findings of the scientists to subsisten of additional samples in FY 95 for for closeout costs for some FY 94 work | ADFG ue efforts to com ea through a Su on other restor roject would als nce users to biol ace users. The p pood safety hydro | ADFG nmunicate in bsistence Re ation projec so put in pla logists/patho proposed pro ocarbon testi | ALL aformation estoration ts, putting ce a system plogists for ject does no ng. The p | Cont'd n on subsister Newsletter information n for getting r study and re- not propose c roject would | \$241 6 nce food The into samples eport the collection support | Need to coordinate with other community outreach projects including 95027 (shoreline assessment), 95052 (community involvement and use of traditional knowledge), 95428-CLO (subsistence planning) and the Trustee Council's public information program. Cost seems high. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|--------|-------------|--|--|---|---|---|--|---|--|
| 5 | 95285-CLO | Closeout: Subtidal Sediment Recovery Monitoring | NOAA | NOAA | KEN | Closeout | \$121 0 | This is a closeout project to complete work initiated in FY 94. | |
| , , | | Abstract. This project would determin hydrocarbons from the <i>Exxon Valdez</i> Gulf of Alaska, compare the hydrocard PWS at comparable depths; compare the PWS with concentrations from sample sediments; and complete analysis of s | the composition oil spill in intro- bon concentration nydrocarbon concerts es at the same ediments coll | sition and con- ertidal and sub- tions of subtic concentrations e locations in lected in PWS | centration btidal sed lal sedime of subtid 1989 to a in July 1 | n of petroleum iments (0-10) ents outside a al sediments of ssess recover 993. | n Om) in the nd inside putside ry of those | * | |
| 1 | 95290 | Hydrocarbon Data Analysis, Interpretation, and Database Maintenance for Restoration and NRDA Environmental Samples Associated with the <i>Exxon</i> <i>Valdez</i> Oil Spill | NOAA | NOAA | ALL | Cont'd | \$163.4 | Ongoing hydrocarbon interpretation and support services. Provides valuable technical support to many project investigators. | |
| | : | Abstract This project would continue the data archival and interpretive services regarding hydrocarbon sampling and data management by the Auke Bay Lab. This project would make a large and complex hydrocarbon database available to principle investigators, resource managers and the public. This project would apply and extend hydrocarbon interpretation methods and archival of data developed in NRDA assessments to samples analyzed for the restoration effort and insure the comparability of analytical and interpretive results with those of the NRDA effort. | | | | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|--|--|--|--|--|---|
| 1 | 95320A | Salmon Growth and Mortal.ty Abstract This project would contine Investigation (Project 94320). This p juvenile pink salmon among years (I evaluate the carrying capacity of PW techniques for estimating pink salmo | ADFG ue work initiat particular sub-j 1989-1995), tr S for juvenile on mortality w | ADFG and In FY 94 a project would ack the migrat salmon and ot ithin the PWS | PWS as part of compare tion of jur her age 0 study are | Cont'd the PWS Syst growth rates venile salmor fish and deve ca | \$267 8 tem of i in PWS, lop | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94. FY 95 proposal continues first year effort A peer review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October. [Note. This sub-project is integrated with Project 95320B (CWT), a project with policy/legal concerns] |
| 4 | 95320B | PWS Pink Salmon Stock Identification and Monitoring (CWT) Abstract As initially proposed, this recovery and analysis, provide inseas stocks to enable management of the o damaged wild stocks The project w Alevin Mortality study (95191) [N was initially proposed by the sponsor associated with the FY 94 work effor | ADFG project would, on estimates o commercial fis ould also prov ote The scop ing agency to a t] | ADFG through the u f the composition hery in order ide information e of this proje address data re | PWS use of larg tion of mi to minimi on to the F ct has bee ecovery an | Cont'd e scale coded xed hatchery- ze adverse in Pink Salmon I en revised fro nd report writ | \$84.3 I wire tag -wild npacts to Egg and m what ing | As initially proposed, this project raises policy issue (normal agency responsibility) Also, possible legal issue since this project involves hatcheries Indications from legal counsel are that proposed use of settlement funds to support hatchery operations could require an EIS prior to a final determination of whether the project would be legally permissible Possible that funding will be available from other sources. [Note. The scope of this project has been revised from what was initially proposed by the sponsoring agency to address data recovery and report writing associated with the FY 94 work effort.] |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|------|-------------|--|--|---|---|---|--|---|--|
| 4 | 95320C | Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in PWS | ADFG | ADFG | PWS | Cont'd | \$642 2 | High technical merit (otolith marking may be superior to CWT) Also, legal issue since this project involves hatcheries Indications from legal counsel are that proposed use of settlement funds to support hatcheries | |
| | - | permit mass otolith thermal marking application of this technology Additi otolith marking of wild pink salmon t | at four PWSA ionally, the pro- fry using tetra | C hatcheries oject would id cycline | in PWS a dentify a f | nd support the easible method | od for | could require an EIS prior to determination of whether project is legally permissible. Also, policy issue regarding whether proposal is within normal agency responsibility | |
| 2 | 95320D | PWS Pink Salmon Genetics Abstract This project would define to in order to better direct harvest manager ather than species-specific, basis The risk assessment and genetic monitoring restoration and enhancement Genetic electrophoresis | ADFG he genetic stru ement decision e project woul ag of supplement data would be | ADFG acture of pink ns made for re d also provid ental program e collected us | PWS c salmon s estoration e informat is to guide ing the tec | Cont'd tocks in the s on a stock-sp tion needed for stock-specifi chniques of al | \$227 0 pill area ectfic, or genetic ic lozyme | Peer reviewer felt more information is needed to fully evaluate the study design Technical aspects needs further examination. | |
| 1 | 95320E | Juvenile Salmon and Herring Integration Abstract This project would continu Investigation (Project 94320). This p variations in predation upon juvenile p the mechanisms that cause variation i predators (distribution, abundance, sp migratory pathway The sub-project System Investigation sub-projects. Th platforms including the oceanography | ADFG articular sub-p pink salmon af n predation 7 ecies, and size will also colle us sub-project | ADFG ed in FY 94 a project would ffects survival fhis would in composition ct samples fo t supports ves s | PWS as part of determine l and woul clude the l) along th or a variety ssel charte | Cont'd the PWS Syster to what exter d identify and identification e juvenile sale of the other rs for shared p | \$943.1 tem ent d describe of fish mon PWS research | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94. FY 95 proposal continues first year effort. A peer review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October. Expansion of predator study to include herring should go forward in cost-effective manner. | |

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| Cat. | Project No. | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|----------------|---|--|---|---|--|---|--|
| 1 | 95320G | Phytoplankton and Nutrients Abstract. This project would contin Investigation (Project 94320). This provide nutrient and phytoplankton of on the PWS food web The project relation to zooplankton production a | McRoy, UAF ue work initiated particular sub-pro- lata to help evalu would examine v nd oceanographic | ADFG In FY 94 a oject would ate the influ ariations in conditions. | PWS as part of t focus on p ience of pl phytoplar | Cont'd he PWS Sys primary prod hytoplankton ukton produc | \$239 3 tem uction and dynamics tion in | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94 FY 95 proposal continues first year effort. A peer review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October. |
| 1 | 95320 册 | Role of Zooplankton in the PWS Ecosystem Abstract [•] This project would contin Investigation (Project 94320). This hypothesis that levels of predation of the amount of macrozooplankton pre large populations of macrozooplank predation). The project would suppor distribution and composition of PW physical oceanography component of | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94. FY 95 proposal continues first year effort. A peer review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October | | | | | |
| 1 | 95320I(1) | Isotope Tracers - Food Web Dependencies in PWS Using Stable Isotopes (Marine Mammals and Birds) Abstract: This project would analyz occur with increasing trophic levels t in PWS. The trophic relationships of of this project on an opportunistic b | Schell, Institute of Marine Science tussue samples o describe food so f sea birds and ce pasis. | ADFG and use shi burces and p staceans wo | PWS fts in stabl prey depen uld also be | Cont'd le isotope rat dencies of ha e investigated | \$115.4 tios that arbor seals d as part | Strong technical merit and demonstrated understanding of technical issues involved. Objectives of this project need to be integrated with other projects involving stable isotopes under the direction of the Chief Scientist |

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| 1 953: | 201(2) Te | | | | Loc. | Cont'd. | Cost | Notes |
|----------------|-----------------------|---|---|-----------------------------------|------|---------|---------|---|
| | 201(2) 15 Fi | otope Tracers - Food Webs of sh | Kline, UAF | ADFG | PWS | Cont'd | \$79 4 | Objectives of this project need to be integrated with other projects involving stable isotopes under the direction of the Chief Scientist |
| | In sh an all | vestigation (Project 94320). This p offs in stable isotope ratios that occ d predation relationships among sp of the other PWS System Investig | articular sub-pi ur with increasi ecies in PWS. gation sub-proje | s and use sources virtually | | | | |
| 3 953 2 | 201(3) Pt Sp | rchase of Isotope Radio Mass pectrometer | Schell, Institute of Marine Science | ADFG | PWS | NEW | \$257 4 | Need for equipment not well substantiated by proposal. Need to examine all projects that propose the use of isotope analysis in order to develop consistent approach to the use of this technique. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|---|---|--|---|---|--|
| 1 | 95320J | Information Systems and Model Development Abstract This project would contin Investigation (Project 94320). This appropriate for the PWS System Invest to achieve the program's objectives. technical support to other PWS Syst descriptive modeling; numerical mode for on-line analysis and visualization collected, used and understood. | Patrick, PWS Science Center ue work initiated particular sub-pro- estigation effort a This sub-project em Investigation deling; support w i tools to provide | ADFG d in FY 94 a oject would nd develop provides for efforts thro vith sampling the means | PWS as part of t provide a the model: or overall d bugh field g technolo by which | Cont'd he PWS Syst n information ing resources ata managen data commun gues, and pro- various data o | \$836.2 tem n system needed nent and nications; oviding can be | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94. FY 95 proposal continues first year effort. A peer review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October. Important to ensure successful accomplishment of sub-project objectives prior to expansion |
| 4 | 95320K | PWSAC: Experimental Fry Release Abstract. This project would suppor each at the WHN and AFK hatcheric part of an effort to investigate the po during early marine residence. This | Olsen, PWS Aquaculture Corporation at the rearing of 8 es in PWS to 1.5 ssible influence project would be | ADFG 8 million ea gram live v of fry size a coordinated | PWS rly emergi veight for s a determ d with con | Cont'd ng pink salm release in mic mant of surv ponents of th | \$47.3 non fry d-June as ival ne PWS | Raises legal issue. Indications from legal counsel are that the proposed use of settlement funds to support hatchery operations could require an EIS prior to a final determination of whether the project would be legally permissible. |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|---|---|--|--|--|---|---|
| 1 | 95320M | Observational Physical Oceanography in PWS and the Gulf of Alaska Abstract. This project would continu Investigation (Project 94320) This p oceanographic structure of PWS inclu processes within PWS and the Gulf o forcing (wind, storms, long term temp determine how these relationships act species within PWS, and investigate to climatic cycles and events. | Salmon, PWS Science Center he work initiated particular sub-pro- ading the space/tr f Alaska; investi perature changes) to retain/dispers arge and fine sca | ADFG in FY 94 a oject would ime variabili gate relatio and wind a se food reso ale oceanog | PWS as part of the investigation investigati | Cont'd he PWS Syst te the physica ospheric and ween atmosp ncy driven cur ecologically in actures and ma | \$577 8 em l oceanic heric rrents; nportant ajor | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94 FY 95 proposal continues first year effort A peer review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October Need to ensure that this sub-project is more closely coordinated with other bird, forage fish projects |
| 1 | 95320N | Nearshore Fish Abstract: This project would continu Investigation (Project 94320). This pr macrozooplankton distribution and bi predator distribution /biomass in real with research on other birds, mamma plankton/nekton/predator populations currents and bottom morphology; and herring into the nearshore rearing area | Thomas, PWS Science Center he work initiated articular sub-pro omass in real tin time using hydro ls and fishes to t aggregate in cyc determination o as and adult spay | ADFG in FY 94 a oject would ne using hy oacoustics; test the hyp clic patterns of the relative wining popu | PWS as part of the second seco | Cont'd the PWS Syst escription of ics, description n of this sub- at fic locations of hent of juveni WS. | \$635 2 em on of fish project due to le Pacific | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94 FY 95 proposal continues first year effort A peer review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October Coordination of hydroacoustics work in Project 95163 is essential. |
| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | | | |
|------|-------------|---|--|---|--|---|---|--|--|--|--|
| 1 | 95320Q | Avian Predation on Herring Spawn | USFS | USFS | PWS | Cont'd | \$99 0 | This sub-project, as part of the PWS System Investigation, was extensively peer reviewed in FY 94. | | | |
| | | Abstract This project would continu Investigation (Project 94320). This p egg loss to avian predators such as gla surfbirds. | e work initiat articular sub- _I aucous-winged | ed in FY 94 a project would d gulls, surf so | attempt to attempt to coters, bla | he PWS Syst determine h ck turnstones | tem erring s and | review of first year progress will take place in the fall of 1994 with information presented to Trustee Council in late October. | | | |
| 1 | 95320S | Disease Impacts on PWS Herring Populations (competitive solicitation under State of Alaska two-step, RFQ-RFP process) | ADFG | ADFG | PWS | Cont'd | \$379.9 | Five responses have been received as a result of the herring disease project solicitation Under state law, these responses must be evaluated confidentially. Project needs to be assessed as part of a comprehensive | | | |
| | | Abstract This project would attempt in the size of the PWS Pacific herring environmental causes. This project is Multi-Step Procurement Process Th because Requests for Proposals have <i>Restoration Projects for Fiscal Year</i> . | to determine t g population in designed to b e actual design been solicited 1995 (May 199 | he epizootiolo acluding micro be implemented of this project as part of the 94). | ogy of disc obial, anth ed through et has yet e Invitation | ease associate ropogenic ar the State of to be determin to Submit | ed decline nd Alaska ined | herring restoration effort A decision regarding whether to proceed with funding for a herring disease project is anticipated to be made by the Trustee Council in late October [Note. FY 95 cost for this project is estimate only.] | | | |
| 1 | 95320T | Juvenile Herring Growth and Habitat Partitioning | ADFG | ADFG | PWS | NEW | \$340.3 | Addresses an injured resource of critical concern to commercial fisheries. Proposal concept is strong, | | | |
| | | Abstract: This project would investigate what may be causing the failure of herring runs in PWS by investigating the dynamics of larval and juvenile herring The proposed project, together with other investigations being undertaken as part of the PWS System Investigation, would attempt to describe the relative importance of zooplankton abundance, oceanic conditions, habitat requirements, and density dependent predation in determining large fluctuations in herring abundance. | | | | | although more complete evaluation of technical merit would require additional information Needs to be assessed as part of a comprehensive herring restoration effort | | | | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes | |
|------|-------------|--|--|---|--|---|-----------------------------|--|--|
| 1 | 95320U | Somatic and Spawning Energetics of Herring and Pollock | Paul, UAF | ADFG | ALL | NEW | \$99 4 | Clarification of specific restoration objectives needed. Project needs to be evaluated in the context of, and possibly integrated with, other herring projects 95074 | |
| | | Abstract. This project would focus of forage fish species in the spill area | n the seasonal s - Pacıfic herrıng e herrıng and he bhic interactions | omatic ener and walley rring reprod (food webs | gy cycles e pollock ductive bio s) involvin | of two impor The project logy and pro g pollock. | rtant would vide | (herring reproductive impairment); 95163 (forage fish), 95320E (salmon herring integration), 95320N (nearshore fish); 95320T (juvenile herring growth), 95120 (energetic composition of selected forage fish), 95166 (herring natal habitats) and 95121 (isotope and fatty acid signatures of selected forage fish) | |
| 3 | 95320V | Herring Predation by Humpback Whales in PWS | Matkin, North Gulf Oceanic Society | ADFG | PWS | NEW | \$279 8 | Proposed project appears very expensive relative to potential benefit of data. The information that wou be collected by this proposal was not regarded as a | |
| | | Abstract. This project would examine resource for humpback whales in PW significant impact on the recovery of humpbacks would be developed and a | e whether Pacıfi S and whether p Pacific herring model of whale | c herring an redation by Estimates predation v | te a season humpbacl of herring vould be co | ally importar (whales may consumption constructed. | nt food / have a n by | substantial priority. Proposal can be deferred for future consideration | |
| 1 | 95320Y | Variation in Local PredationScheel, PWS ADFGPWS NEW\$161.2 Potentially valuable informationRates on Hatchery-Released FrySciencehatchery stocks. Could complenCenterstudy information. Should revie | | | | | | Potentially valuable information on avian predation on hatchery stocks. Could complement fish predation study information. Should review this project proposal | |
| | | Abstract This project would support the collection of data on the size, composition, behavior and duration of foraging aggregations of birds (and mammals, if appropriate) at salmon hatchery release sites. | | | | | | in relation to Project 95033 (kittiwakes as indicators of forage fish). Apparently depends on large-scale hatchery production Budget needs scrutiny. | |

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| Cat. | Project No. | . Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|--|--|---|---|--|--|
| 6 | 95417 | Carry-forward: Waste Oil Disposal Facilities | ADEC | ADEC | ALL | Carry | \$232.2 | Relationship to 95115 (PWS waste management plan) should be further reviewed |
| | | Abstract. This project would fund a create waste oil recycling or disposal of this project is to allow natural reco pollution. NEPA compliance require continue this effort without additional | pilot program, programs in covery to proceed ments were recoll funding | using a Requ ommunities o l without the cently comple | est for Pr of the spill added inte sted. The | oposals proc area. The erference of 1 FY 95 proj | cess, to objective marine ect would | |
| 5 | 95422-CLO | Closeout: Restoration Plan EIS/Record of Decision | USFS | USFS | ALL | Closeout | \$20 0 | Completes EIS process for the <i>Draft Restoration Plan</i> (November 1993) Record of Decision (ROD) is |
| | | Abstract This project would suppor (EIS) process for the <i>Draft Restoration</i> anticipated in late October. | t the completio on Plan (Noven | n of the Envi nber 1993). F | ronmenta Record of | l Impact Sta Decision (R | tement OD) is | anticipated in late October |
| 1 | 95424 | Restoration Reserve | ALL | ALL | ALL | Cont'd | \$12,000.0 | Provides long-term support for restoration activities. |
| | | Abstract This project calls for an ad (Authorization for an initial \$12 mill Trustees in January 1994.) | lditional \$12 m ion allocation t | illion deposit to the Restora | into the lation Rese | Restoration l erve was mad | Reserve. de by the | |

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| Cat. | Project No. | Project Title | Proposer | Lead Agency | Loc. | New or Cont'd. | FY 95 Cost | Notes |
|------|-------------|--|---|---|--|--|--|---|
| 1 | 95427 | Harlequin Duck Recovery Monitoring | ADFG | ADFG | PWS | Cont'd | \$226.9 | Continuation of ongoing work Should be contingent upon successful completion of field methodology |
| | | Abstract [•] This project would contin abundance, distribution and age-sex May/June breeding bird surveys, doc abundance through brood and moltin PWS to correlate habitat parameters analysis) document continued expose impairment through blood and tissue | the harlequin du structure of the cument annual h ng surveys; clas s with eastern P sure of sea duck te sampling. | ck recovery n e pre-nesting p aarlequin prod sify streams a WS, and (pen s to oil and pl | nonitoring population uction and und shoreli ding 1993 nysiologic | in order to d in PWS three l post-breedin ine habitats in results of co al links to rep | ocument ough g n western ntaminant productive | project from FY 94. Opportunity to integrate or combine with Project 95025A (recovery of sea ducks) needs further consideration. |
| 5 | 95428-CLO | Closeout: Subsistence Planning Project Abstract: This project would fund to to work with spill area subsistence of relating to injured subsistence resour | ADFG the completion of communities to rces and service | ADFG of a project st identify come s. | ALL arted in F munity ne | Closeout Y 94 (Project eds and prior | \$100 1 t 94427) ities | Need to coordinate with other community outreach efforts including Projects 95027 (shoreline assessment), 95052 (community involvement and traditional knowledge), 95279 (subsistence restoration project) Proposal needs further consideration in context of other subsistence priorities. There may be significant unexpended FY 94 funds from the ADFG portion of this project. Budget needs review |
| 1 | 95505B | Data Analysis for Stream Habita Abstract: This project would complete establish the relationship between a rearing habitat. The proposed project fisheries management journal | at USFS lete data analysi erial photo chan ect also indicate | USFS is for an exist inel type inter s an intent to | ALL ing stream pretations publish re | NEW habitat data and spawnin soults in a pro | \$172 base to g and ofessional | Project would utilize existing data to evaluate stream typing and habitat evaluation from aerial photos |

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Appendix B

RESTORATION PROJECTS BY RESOURCE & SERVICE

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Appendix B

RESTORATION PROJECTS BY RESOURCE & SERVICE

Introduction

This appendix presents information about projects proposed for FY 95, organized in alphabetical order according to resource and service. The resources and services for which injuries have been documented are listed in Chapter 1, Page 3.

The goal of restoration is recovery of all injured resources and services. For each injured resource or service, the *Draft Restoration Plan* (November, 1993) expresses objectives to meet this goal and strategies to attain them. Objectives describe conditions that will indicate when a particular resource or service has recovered. Table B-1 summarizes the primary restoration strategies presented in the *Draft Restoration Plan*.

For each resource or service, the following information is presented:

- Recovery Status: The current condition of the resource or service.
- **Recovery Objective:** The definition of recovery for that resource or service.
- Proposed Projects: A list of projects proposed for that resource or service. In the following tables, there is information concerning the project number, title, the cost of the project, and one of the following six project types:
 - A = Administration, science management and public information;
 - GR = General Restoration;
 - H = Habitat protection and acquisition;
 - M = Monitoring;
 - R = Research; and
 - RR = Restoration Reserve.

Additionally, the evaluation category (1, 2, 3, 4, 5, or 6) is noted (for definitions of evaluation categories, see Chapter 1, page 5).

Most restoration projects are clearly associated with one or more injured resource or service. However, some projects serve almost all resources or services. These projects are discussed under the heading "Multiple-Resource Projects." The habitat protection and administration projects are examples of "Multiple-Resource Projects."

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Table B-1. Restoration Strategies from the Draft Restoration PlanPart A. Biological Resources

| Biological Resources | Primary Restoration Strategy (from Draft Restoration Plan) | | | |
|--|--|--|--|--|
| Recovering Resources Bald eagle Black oystercatcher Killer whale Sockeye salmon at Red Lk* | Primary Restoration Strategy Rely on natural recovery Monitor recovery Protect injured resources and their habitats | | | |
| Resources Not Recovering Common murre Harbor seal Harlequin duck Intertidal organisms Marbled murrelet Pacific herring* Pigeon guillemot Pink salmon* Sea otter Sockeye Salmon (Kenai & Akalura Systems)* Subtidal Organisms | Primary Restoration Strategy Conduct research to find out why these resources are not recovering Initiate, sustain, or accelerate recovery Monitor recovery Protect injured resources and their habitats | | | |
| Recovery Unknown Clams* Cutthroat trout Dolly Varden trout River otter Rockfish | Primary Restoration Strategy Rely on natural recovery Monitor recovery Protect injured resources and their habitats | | | |
| * These resources are also important for subsistence or commercial fishing. For these resources, waiting for natural recovery may significantly harm a community or industry, and the strategies for subsistence or commercial fishing also apply (see Part C of the table). | | | | |

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| Other Resources | Primary Restoration Strategy (from Draft Restoration Plan) |
|-----------------------------|--|
| Archaeology | Primary Restoration Strategy Repair spill-related injury to archaeological sites and artifacts Protect sites and artifacts from further injury and store them in appropriate facilities Protect injured resources and their habitats |
| Designated Wilderness Areas | Primary Restoration Strategy Any restoration strategy which aides recovery of injured resources, or prevents further injuries will assist recovery of designated wilderness areas. No strategies have been identified which benefit only designated wilderness areas without also addressing injured resources. |

Table B-1. Restoration Strategies from the Draft Restoration PlanPart B. Other Resources

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Table B-1. Restoration Strategies from the Draft Restoration PlanPart C. Services

| Services | Primary Restoration Strategy (from Draft Restoration Plan) |
|------------------------|--|
| Commercial Fishing | Primary Restoration Strategy Promote recovery of commercial fishing as soon as possible Protect commercial fish resources as soon as possible Monitor recovery |
| Recreation and Tourism | Primary Restoration Strategy Preserve or improve the recreational and tourism values of the spill area Remove or reduce residual oil if it is cost effective and less harmful than leaving it in place Monitor recovery |
| Passive Uses | Primary Restoration Strategy Any restoration strategy which aids recovery of injured resources, or prevents further injuries, will assist recovery of passive-use values. No strategy has been identified that benefits only passive uses, without also addressing injured resources. |
| Subsistence | Primary Restoration Strategy Promote recovery of subsistence as soon as possible Remove or reduce residual oil if it is cost effective and less harmful than leaving it in place Protect subsistence resources from further degradation Monitor recovery |

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RESTORATION PROJECTS BY RESOURCE AND SERVICE

Archaeological Resources

<u>Recovery Status</u>: Injury to archaeological resources stems from increased looting and vandalism of sites and artifacts, and erosion within and around the sites resulting from cleanup activities. In addition, archaeological artifacts may have been oiled. Injuries attributed to looting and vandalism still occur. These injuries diminish the availability or quality of scientific data and opportunities to learn about the cultural heritage of people in the spill area.

<u>Recovery Objective</u>: Archaeological resources will be considered recovered when spillrelated injury ends, and looting and vandalism are at or below pre-spill levels. Restoration cannot regenerate what has been destroyed, but it can prevent further degradation of sites as well as the scientific information that would otherwise be lost.

Proposed Projects:

| Cate- gory | Project No. | Project Title | Туре | FY95 Cost |
|---------------|----------------|--|--------|------------------|
| 1 | 95007A | Archaeological Site RestorationIndex Site Monitoring | М | \$386,300 |
| 1 | 95007B | Archaeological Site Restoration | GR | <u>\$116,000</u> |
| | | - | Total: | \$502.300 |

Two archaeological resource projects are proposed for FY 95. One project would "close out" efforts initiated in FY 94, including the preparation of heritage site protection plans and preparation of reports for site specific restoration work. Once heritage site protection plans are completed in May 1995, additional archaeological restoration projects may be proposed for FY 96. The proposed FY95 work would also stabilize and excavate an archaeological site in PWS and monitor other sites for continued vandalism and site erosion.

Bald Eagles

<u>Recovery Status</u>: Two hundred to 300 bald eagles may have been killed in the spill. However, population estimates made in 1989, 1990, and 1991 indicate that there may have been an increase in the PWS bald eagle population since the previous survey conducted in 1984. Productivity decreased in 1989, but appeared to have recovered by 1990.

<u>Recovery Objective</u>: Because population and productivity appear to have returned to prespill levels, bald eagles may have already recovered from the effects of the spill. Proposed Projects (Bald Eagles):

| Cate- | Project | | | FY95 |
|-------|---------|---|-------|-----------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95030 | Productivity Survey of Bald Eagles in PWS | М | \$81,900 |
| 2 | 95029 | Population Survey of Bald Eagles in PWS | Μ | \$48,700 |
| | | | Total | \$130,600 |

These proposed projects would monitor the recovery of bald eagles using surveys of population and productivity (reproductive success).

Black Oystercatchers

<u>Recovery Status</u>: Black Oystercatchers are recovering, although oystercatchers may still be exposed to hydrocarbons when feeding in intertidal areas.

<u>Recovery Objective</u>: Black oystercatchers will have recovered when Prince William Sound populations attain pre-spill levels and when reproductive success of nests and growth rates of chicks raised in oiled areas are comparable to those in unoiled areas.

Proposed Projects:

| Cate- gory | Project Number | Project Title | Туре | FY95 Cost |
|---------------|-------------------|--|--------|--------------|
| 1 | 95041 | Introduced Predator Removal from Islands- | GR | \$66,500 |
| | | Follow-up Surveys | | |
| 2 | 95159 | Surveys to Determine Additional Oil Spill Effects and | Μ | \$426,800 |
| | | Recovery of Marine Bird and Sea Otter Populations in PWS | | |
| 4 | 95042 | Five-year Plan to Remove Predators from Seabird Colonies | GR | \$ 75,000 |
| | | | Total: | \$568,300 |

Proposed FY 95 projects include a number of efforts such as a follow-up on a predator removal project initiated in FY 94, and a monitoring survey of marine birds and sea otters that could help assess black oystercatcher recovery status. Another proposed research effort that could benefit restoration of black oystercatchers is the multi-project research proposals addressing issues of recovery in nearshore ecosystems (see "What is limiting recovery in the nearshore ecosystems?" in Chapter 2).

Clams

<u>Recovery Status</u>: Littleneck clams and butter clams on sheltered beaches were killed by oiling and clean-up activities. In addition, growth appeared to be reduced by oil, but determination of sublethal or chronic effects is awaiting final analyses.

<u>Recovery Objective</u>: Clams will have recovered when populations and productivity have returned to levels that would have prevailed in the absence of the oil spill (pre-spill'data or non-oiled control sites).

Proposed Projects:

| Cate- gory | Project Number | Project Title | Туре | FY95 Cost |
|---------------|-------------------|--|-------|--------------------|
| 1 | 95025H | Effects of Predatory Invertebrates on Nearshore Clam | R | \$123,400 |
| | | Populations in PWS | | |
| 1 | 95131 | Clam Restoration | GR | \$445,000 |
| 3 | 95025G | Relation of Clam Population Structure to Recovery | R | <u>\$208,500</u> |
| | | of Injured Nearshore Vertebrate Predators | Total | \$776 ,9 00 |

Proposed FY 95 projects include an effort to develop the technology to reestablish local clam populations near subsistence communities as well as several projects that are part of a larger integrated study effort to understand the recovery of vertebrate predators in the nearshore ecosystem (see "What is limiting recovery in the nearshore ecosystem?" in Chapter 2).

Commercial Fishing

<u>Recovery Status</u>: Commercial fishing was injured through injury to commercial fish species and also through fishing closures. Continuing injuries to commercial fishing may cause hardships for fishermen and related businesses. Each year that commercial fishing remains below pre-spill levels compounds the injury to the fishermen and, in many instances, the communities in which they live and work.

<u>Recovery Objective</u>: Commercial fishing will have recovered when the population levels and distribution of injured or replacement fish used by the commercial fishing industry match conditions that would have existed had the spill not occurred. Because of the difficulty of separating spill-related effects from other changes in fish runs, the Trustee Council may use pre-spill conditions as a substitute measure for conditions that would have existed had the spill not occurred.

Proposed Projects (Commercial Fishing):

| Cate- | Project | | | FY95 |
|-------|---------|---|-------|------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95051 | Large-scale Coded Wire Tagging of PWS Herring | GR | \$231,900 |
| - 1 | 95076 | Effects of Oiled Incubation Substrate on Survival and | R | \$179,900 |
| | | Straying of Wild Pink Salmon | | |
| 1 | 95105 | Kenai River Ecosystem Restoration Pilot Enclosure Study | GR | \$404,800 |
| 1 | 95137 | PWS Salmon Stock Identification and Monitoring Studies | GR | \$277,500 |
| 1 | 95255 | Kenai River Sockeye Restoration | GR | \$645,000 |
| 1 | 95258 | Sockeye Salmon Overescapement | М | \$998,100 |
| 1 | 95320A | Salmon Growth and Mortality | R | \$267,800 |
| 1 | 95320E | Juvenile Salmon and Herring Integration | R | \$943,100 |
| 1 | 95320S | Disease Impacts on PWS Herring Populations | R | \$379,900 |
| | | (competitive solicitation under State of Alaska | | |
| | | two-step, RFQ-RFP process) | | |
| 1 | 95320T | Juvenile Herring Growth and Habitat Partitioning | R | \$340,300 |
| 2 | 95024 | Enhancement of Wild Pink Salmon Stocks | GR | \$184,000 |
| 2 | 95139A | Spawning Channel - Port Dick Creek | GR | \$33,200 |
| 2 | 95139C | Montague Riparian Rehabilitation | H | \$46,200 |
| 2 | 95320D | PWS Pink Salmon Genetics | GR | \$227,000 |
| 3 | 95006 | Paint River Pink Salmon Development | GR | \$173,900 |
| 3 | 95139D | Salmon Instream Habitat and Stock Restoration | GR | \$61,500 |
| | | Pink Creek and Horse Marine Barrier Bypass Development | | |
| 3 | 95259 | Restoration of Coghill Lake Sockeye | GR | \$333,000 |
| 4 | 95003 | Area E Commercial Salmon Permit Buyback Program | GR | \$11,735,000 |
| 4 | 95050 | A Test of Sonar Accuracy in Estimating Escapement | R | \$79,300 |
| | | of Sockeye Salmon | ~ | |
| 4 | 95065 | PWSAC Pink Salmon Fry Mortality | R | \$59,600 |
| 4 | 95079 | Pink Salmon Restoration Through Small-scale Hatcheries | GR | \$150,000 |
| 4 | 95093 | PWSAC: Restoration of Pink Salmon Resources and | GR | \$1,690,300 |
| | | Services | | |
| 4 | 95320B | PWS Pink Salmon Stock Identification and Monitoring | GR | \$84,300 |
| | | (CWT) | | |
| 4 | 95320C | Otolith Thermal Mass Marking of Hatchery Reared | GR | <u>\$642,200</u> |
| | | Pink Salmon in PWS | Total | \$20,167,800 |

Twenty four proposals that would directly or indirectly address the commercial fishing service have been submitted for consideration in FY 95, including 14 projects identified in Evaluation Category 1 or 2. Many of the projects listed above overlap with proposals to address specific injured resources such as pink salmon, sockeye salmon and Pacific herring. Several of these are research projects included within the PWS System Investigation effort initiated in FY 94 to investigate various natural and human factors that influence the health and recovery of pink salmon and herring stocks in PWS (see "What is causing the failure of PWS herring and pink salmon runs?" in Chapter 2).

Another focus of the proposals listed above involves restoration opportunities for sockeye salmon in the Kenai River and other river ecosystems damaged as a result of overescapement. Other proposals would address ecotoxicological issues (see "Are toxic effects of oil still constraining recovery of some resources?"). Several general restoration proposals involve efforts to help restore fisheries through improvements to the management of fishery resources (see "Stock separation projects for fisheries management" in Chapter 2). Some of the proposed projects would involve the direct manipulation of habitat -- such as construction of spawning channels or lake fertilization -- while others would involve the replacement of fishery resources through the establishment of new salmon runs--or the expansion of hatchery operations (see "Fish and shellfish enhancement and replacement projects" in Chapter 2). In a number of cases, an initial review identified significant legal or policy concerns associated with particular projects (see the "Notes" in *Appendix A: FY 95 Project Proposals--Summary Information* regarding specific projects). See also the projects proposed for Pacific herring, pink salmon, and sockeye salmon.

Common Murres

<u>Recovery Status</u>: Productivity of common murres shows signs of recovery at some injured colonies (Barren Islands, Paule Bay) but post-spill population counts are still lower than pre-spill estimates and show no sign of recovery.

<u>Recovery Objective</u>: Common murres will have recovered when population trends are increasing significantly at index colonies in the spill area and when reproductive timing and success are within normal bounds. (Normal bounds will be determined by comparing productivity data with information from other murre colonies in the Gulf of Alaska and elsewhere.)

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|---|--------------|--------------------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95039 | Common Murre Productivity Monitoring | M | \$154,200 |
| 1 | 95041 | Introduced Predator Removal from Islands - Follow-up Surveys | GR | \$66,500 |
| 2 | 95021 | Seasonal Movement and Pelagic Habitat Use by Common Murres from the Barren Islands | R | \$230,900 |
| 2 | 95023 | Food Web Relationships of Pelagic Species Exhibiting Long-term Decline | R | \$133,200 |
| 3 | 95096 | Restoration of Murres by Way of Social Attraction and Predator Removal | GR | \$167,000 |
| 3 | 95097 | Restoration of Murres by Way of Transplantation of Chicks: A Feasibility Study | GR | \$176,000 |
| 4 | 95042 | Five-year Plan to Remove Predators from Seabird Colonies | GR Total: | <u>\$75,000</u> \$1,002,800 |

A number of projects proposed for FY 95 directly or indirectly address common murres including a follow-up on a predator removal project initiated in FY 94, a productivity monitoring survey, a proposal to use satellite tracking devices to identify both summer and winter feeding areas and an investigation of food web relationships of pelagic feeding seabirds including murres. In addition to the specific projects noted above, there are a number of research proposals that would focus on issues surrounding forage fish resources that could have important implications for common murres (see "Is food limiting recovery of injured resources?" in Chapter 2).

Cutthroat Trout

<u>Recovery Status</u>: Cutthroat trout have grown more slowly in oiled areas than in unoiled areas. Insufficient data are available to determine whether they are recovering.

<u>Recovery Objective</u>: Cutthroat trout will have recovered when growth rates within oiled areas are comparable to those for unoiled areas.

Proposed Projects:

| Cate- | Project | • | | | FY95 |
|-------|---------|---|---|--------|------------------|
| gory | Number | Project Title | | Туре | Cost |
| 3 | 95043A | Cordova Cutthroat Trout Habitat | | GR | \$22,700 |
| 6 | 95043B | Carry-forward: Cutthroat and Dolly Varden | τ | GR | <u>\$108,600</u> |
| | | Rehabilitation in Western PWS | | Total: | \$131,300 |

Two projects have been proposed to address cutthroat trout resources by improving habitat. One is a continuation (or "carry forward") of general restoration work initiated in FY 94, but not yet completed, that would make physical habitat improvements to a number of individual stream or lake systems in PWS. These projects would replace sport fishing opportunities damaged by the oil spill.

Designated Wilderness Areas

<u>Recovery Status</u>: The oil spill delivered oil in varying quantities to the waters adjoining the seven areas within the spill area designated as wilderness (including wilderness study areas). Oil was also deposited above the mean high tide line in these areas. During the intense clean-up seasons of 1989 to 1990, hundreds of workers and thousands of pieces of equipment were at work in the spill area. This activity was an unprecedented imposition of people, noise, and activity on the area's undeveloped and normally sparsely occupied landscape.

<u>Recovery Objective</u>: Designated Wilderness Areas will have recovered when oil is no longer encountered in these areas and the public perceives them to be recovered from the spill.

Proposed Projects:

Many projects would help restore Designated Wilderness Areas by restoring injured resources within such areas. No projects that would only address Designated Wilderness Areas have been proposed for FY 95.

Dolly Vardén

<u>Recovery Status</u>: Dolly Varden have grown more slowly in oiled areas than in unoiled areas. Insufficient data are available to determine whether they are recovering.

<u>Recovery Objective</u>: Dolly Varden will have recovered when growth rates within oiled areas are comparable to those for unoiled areas.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|--|-------|-----------|
| gory | Number | Project Title | Туре | Cost |
| 6 | 95043B | Carry-forward Cutthroat and Dolly Varden | GR | \$108,600 |
| | | Rehabilitation in Western PWS | Total | \$108,600 |

A proposed continuation (or "carry forward') of general restoration work initiated in FY 94, but not yet completed, would address restoration of Dolly Varden through physical habitat improvements to a number of individual stream or lake systems in PWS. These improvements would replace sport fishing opportunities damaged by the oil spill.

Harbor Seals

<u>Recovery Status</u>: Harbor seal numbers were declining in Prince William Sound (PWS) before the spill. The oil spill caused population level declines and sublethal or chronic injuries to harbor seals. Following the spill, seals in the oiled area had declined 43%, compared to 11% in the unoiled area. Counts made during the molt at trend count sites in Prince William Sound during 1990-1993 indicate that numbers may have stabilized. However, counts during pupping have continued to decline. It is not known which counts are the best indicator of population status. If the conditions that were causing the population to decline before the spill have improved, normal growth may replace the animals that were lost. However, if conditions continue to be unfavorable, the affected population may continue to decline. Harbor seals are a key subsistence resource in PWS and subsistence hunting is both affected by and may be affecting harbor seal status.

<u>Recovery Objective</u>: Recovery will have occurred when harbor seal population trends are stable or increasing.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|-----------|--|--------|------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95001 | Condition and Health of Harbor Seals | R | \$172,800 |
| 1 | 95014 | Predation by Killer Whales in PWS. Feeding | R | \$177,600 |
| | | Behavior and Distribution of Predators and Prey | - | |
| 1 | 95064 | Monitoring, Habitat Use, and Trophic Interactions | R | \$347,100 |
| | | of Harbor Seals in Prince William Sound | | |
| 1 | 95117BA | A Harbor Seals and EVOS. Blubber and Lipids as Indices | R | \$94,400 |
| | | of Food Limitation | | |
| 1 | 95320I(1) | Isotope Tracers - Food Web Dependencies in PWS | R | \$115,400 |
| | | Using Stable Isotopes (Marine Mammals and Birds) | | |
| 3 | 95073 | Impact of Killer Whale Predation on Harbor Seals | R | <u>\$228,200</u> |
| | | in Prince William Sound | Total: | \$1,135,500 |

Harbor seals are the focus of six proposals for FY 95. Some of these projects focus directly upon the health and condition of harbor seals while others would examine the role of harbor seals in the ecosystem as a predator of other animals as well as a prey item. In addition to the specific projects noted above, there are a number of other research proposals that would focus on issues surrounding forage fish resources that could have important implications for harbor seals (see "Is food limiting recovery of injured resources?" and "What is causing the long-term decline in some marine mammals and seabirds?" in Chapter 2).

Harlequin Ducks

<u>Recovery Status</u>: There are indications of reduced densities of harlequins in the breeding season; a declining trend in the summer, post-breeding population; and very poor production of young in western Prince William Sound.

<u>Recovery Objective</u>: Harlequin ducks will have recovered when breeding and post-breeding season densities and production of young return to estimated pre-spill levels, or when there are no differences in these parameters between oiled and unoiled areas.

| Cate- | Project | | | FY95 |
|-------|---------|--|-------------|--------------------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95025A | Factors Affecting Recovery of Sea Ducks and their Prey | R | \$415,100 |
| 1 | 95427 | Harlequin Duck Recovery Monitoring | Μ | \$226,900 |
| 2 | 95005 | Harlequin Duck Abundance and Productivity in Western Cook Inlet | М | \$40,500 |
| 2 | 95025F | Availability and Utilization of Musculus spp. as Food for Sea Ducks and Sea Otters | R | \$5,500 |
| 2 | 95075 | Population Structure of Blue Mussels in Relation to Levels of Oiling and Densities of Vertebrate Predators | Μ | \$197,500 |
| .2 | 95159 | Surveys to Determine Additional Oil Spill Effects and Recovery of Marine Bird and Sea Otter Populations in PWS | Μ | \$426,800 |
| 3 | 95095 | Quantification of Stream Habitat for Harlequin Ducks and Anadromous Fish Species from Remotely Sensed Data | H Total: | <u>\$88,000</u> \$1,400,300 |

Proposed Projects:

Projects proposed for FY 95 include monitoring and research proposals that would assess the recovery status of harlequins as well as investigate aspects of their diet and winter ecology that may be limiting recovery. Some of the projects identified above that have particular relevance to harlequin ducks are part of a larger study effort that examines the recovery of several vertebrate predators in the nearshore ecosystem (see "What is limiting recovery in the nearshore ecosystem?" in Chapter 2).

5

Intertidal Organisms

<u>Recovery Status</u>: The lower intertidal zone and, to some extent, the middle intertidal zone are recovering. However, injuries persist in the upper intertidal zone, especially on rocky sheltered shores. Recovery of this zone appears to depend, in part, on the return of adult *Fucus* in large numbers.

<u>Recovery Objective</u>: Each intertidal elevation (lower, middle, or upper) will have recovered when community composition, population abundance of component species, age class distribution and ecosystem functions and services in each injured intertidal habitat have returned to levels that would have prevailed in the absence of the oil spill.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|---|------|-------------|
| gory | Number | Project Title | Type | Cost |
| 1 | 95009D | Survey and Experimental Enhancement of | R | \$188,900 |
| | | Octopuses in Intertidal Habitat | | |
| 1 | 95025C | Pigeon Guillemots and River Otters as Bioindicators | R | \$189,200 |
| | | of Nearshore Ecosystem Health | | |
| 1 | 95026 | Hydrocarbon Monitoring: Interation of Microbial and | М | \$146,900 |
| | | Chemical Sediment Data | | |
| 1 | 95086A | Coastal Habitat Intertidal Monitoring and | Μ | \$892,600 |
| | | Experimental Design Verification | | |
| 1 | 95086C | Herring Bay Monitoring and Restoration Studies | R | \$904,200 |
| 1 | 95087 | Relation of Sea Urchin Population Structure to Recovery | R | \$48,800 |
| | | of Injured Nearshore Vertebrate Predators | | |
| 1 | 95090 | Mussel Bed Restoration and Monitoring in PWS | Μ | \$438,800 |
| | | and Gulf of Alaska | | |
| 2 | 95009C | Trophic Dynamics and Energy Flow: Impacts of | R | \$217,300 |
| | | Herring Spawn and Sea Otter Predation on Nearshore | | |
| | | Benthic Community Structure | | |
| 2 | 95025E | Algal Competition Limiting Recovery in the Intertidal | R | \$205,100 |
| 2 | 95027 | Kodiak Shoreline Assessment: Monitoring Surface and | Μ | \$447,800 |
| | | and Subsurface Oil | | |
| 2 | 95075 | Population Structure of Blue Mussels in Relation to | R | \$197,500 |
| | | Levels of Oiling and Densities of Vertebrate Predators | | |
| 2 | 95266 | Shoreline Assessment and Oil Removal | GR | \$1,411,100 |
| 3 | 95009A | Trophics and Community Structure in the Intertidal | R | \$455,400 |
| | | and Shallow Subtidal | | |
| 3 | 95009B | Primary Productivity as a Factor in the Recovery of | R | \$218,900 |
| | | Injured Resources in Prince William Sound | | |
| 3 | 95009E | Community Structure of Mobile Foragers Using the | R | \$280,500 |
| | | Nearshore | | |

Proposed Projects (Intertidal Organisms continued):

| Cate- | Project | <i>f</i> | | FY95 |
|--------|---------------|---|-------------|---------------------------------|
| gory 🥤 | Number | Project Title | Туре | Cost |
| 3 | 95010 | Intertidal Fauna and Flora Species Composition, Abundance and Variability Relative to Physical | R | \$73,500 |
| 3 | 95025D | Habitat Controls Settlement Rates of Nearshore Invertebrates, Oceanic Processes and Population Recovery: Are They Linked? | R | \$435,700 |
| 3 | 95025J | Primary Productivity as a Factor in the Recovery of Injured Resources in Prince William Sound | R | \$397,000 |
| 3 | 95045 | Green Island Intertidal Restoration Monitoring | M | \$26,400 |
| 3 | 95086B | Population Dynamics of Eelgrass and Associated Fauna | R | \$78,300 |
| 3 | 95113 | Energetics of Intertidal Fish: The Connection between Lower and Upper Trophic Levels | R | \$392,500 |
| 3 | 95 114 | Eelgrass Community Structure Restoration Assessment Using Stable Isotope Tracers | R | \$145,100 |
| 4 | 95116 | Restoration of Intertidal Oiled Mussel Beds by Nondestructive Manipulation/Flushing with PES-51 | GR Total | <u>\$453,200</u> \$8,244,700 |

Twenty three FY 95 project proposals address intertidal organisms, including 12 that have been initially identified as Category 1 or 2 projects. The majority of these projects investigate various aspects of primary productivity, trophic relationships, energy flow, community structure and competition between organisms within the intertidal area in order to better understand the damages and opportunities for restoration of the intertidal ecosystem. Two of the proposed projects involve general restoration efforts to cleanse trapped oil from beach segments and mussel beds that may be a source of continuing injury.

Killer Whales

<u>Recovery Status</u>: Thirteen whales disappeared from one pod in Prince William Sound between 1988 and 1990. The injured pod is growing again.

<u>Recovery Objective</u>: Killer whales will have recovered when the injured pod grows to at least 36 individuals (1988 level).

Proposed Projects:

| Cate- | Project | | - | | |
|----------|---------|---|------|--------------|--|
| gory | Number | Project Title | Туре | Cost | |
| <u>1</u> | 95013 | Killer Whale Monitoring in PWS | M | \$113,700 | |
| 1 | 95014 | Predation by Killer Whales in PWS. Feeding | R | \$177,600 | |
| | | Behavior and Distribution of Predators and Prey | | | |
| 1 | 95092 | Recovery Monitoring of PWS Killer Whales | Μ | \$110,000 | |
| 3 | 95073 | Impact of Killer Whale Predation on Harbor | R | \$228,200 | |
| , | | Seals in PWS | Tota | 1: \$629,000 | |

Two of the proposed projects would monitor the recovery of killer whales in PWS while two others would investigate aspects of killer whale feeding ecology with an emphasis on killer whale interactions with harbor seals.

Marbled Murrelets

<u>Recovery Status</u>: It has been estimated that 8,000 to 12,000 murrelets may have been killed by the oil spill (about 5-10% of the current population in the affected area). Marbled murrelet populations in Prince William Sound were in decline before the spill. The oil spill probably increased the pre-spill rate of decline for this species in the spill area, although the incremental injury is difficult to estimate. The causes of the pre-spill decline are unknown.

<u>Recovery Objective</u>: Marbled murrelets will have recovered when population trends are increasing.

| Cate- | Project | | | FY95 |
|-------|---------|---|-------|-----------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95031 | Reproductive Success as a Factor Affecting | R | \$444,800 |
| | | Recovery of Murrelets in PWS | | r |
| 2 | 95023 | Food Web Relationships of Pelagic Species | R | \$133,200 |
| | | Exhibiting Long-term Decline | | |
| 2 | 95159 | Surveys to Determine Additional Oil Spill Effects | Μ | \$426,800 |
| | | and Recovery of Marine Bird and Sea Otter | | |
| | | Populations in PWS | | |
| 3 | 95099 | Murrelet Vocalization in Conjunction with | GR | \$77,000 |
| | | Artificial Nests: A Possible Means of Attraction | | |
| | | to Habitat | | |
| 3 | 95122 | Mapping Potential Nesting Habitat of Marbled | Н | \$167,500 |
| | | Murrelets in PWS Using Geographic Databases | | |
| 5 | 95102CL | O Closeout: Murrelet Prey and Foraging Habitat | R | <u>\$63,800</u> |
| | | in PWS | Total | · \$1,313,100 |

Proposed Projects:

In addition to the "closeout" of a FY 94 murrelet project effort, several proposals to address the status and recovery of marbled murrelets have been proposed including a research project that would examine murrelet reproductive success as influenced by diet and predation and another that would examine food webs of seabirds (including murrelets) exhibiting long-term decline. A general restoration project investigating the potential use of vocalization to attract murrelets to artificial nests has been proposed as well as a project that would attempt to map potential murrelet nesting habitat using GIS databases. In addition to the specific projects noted above, there are a number of other research proposals that would focus on issues surrounding forage fish resources that could have important implications for marbled murrelets (see "Is food limiting recovery of injured resources?" in Chapter 2).

Pacific Herring

<u>Recovery Status</u>: Pacific herring studies have demonstrated egg mortality and larval deformities. Populations may have declined, but there is uncertainty as to the full extent and mechanism of injury. However, the stocks and dependent fisheries in Prince William Sound are not healthy, as indicated by the low spawning biomass in 1993 and 1994 and the resultant elimination of the fisheries in those years.

<u>Recovery Objective</u>: Pacific herring will have recovered when populations are healthy and productive and exist at pre-spill abundances.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|----------------|--|--------|------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95051 | Large-scale Coded Wire Tagging of PWS Herring | GR | \$231,900 |
| 1 | 95074 | Herring Reproductive Impairment | R | \$407,200 |
| 1 | 95166 | Herring Natal Habitats | Μ | \$512,800 |
| 1 | 95320E | Juvenile Salmon and Herring Integration | R | \$943,100 |
| 1 | 95320N | Nearshore Fish | R | \$635,200 |
| 1 | 95320Q | Avian Predation on Herring Spawn | R | \$99,000 |
| 1 | 95320S | Disease Impacts on PWS Herring Populations | R | \$379,900 |
| | | (competitive solicitation under State of Alaska two- step, RFQ-RFP process) | | |
| 1 | 95320T | Juvenile Herring Growth and Habitat Partitioning | R | \$340,300 |
| 1 | 9532 0U | Somatic and Spawning Energetics of Herring and Pollock | R | \$99,400 |
| 2 | 95057 | Movement of Larval and Juvenile Fishes within PWS | R | \$328,100 |
| 3 | 95320V | Herring Predation by Humpback Whales in PWS | R | \$279,800 |
| 6 | 95165 | Carry forward: PWS Herring Genetic Stock | GR | <u>\$105,400</u> |
| | | Identification | Total: | \$4,362,100 |

Twelve projects have been proposed that specifically address herring. Most of these are research proposals included within the PWS System Investigation effort initiated in FY 94 to investigate various natural and human factors that influence the health and recovery of pink salmon and herring stocks in PWS (see "What is causing the failure of PWS herring and pink salmon runs?" and "Are toxic effects of oil still constraining recovery of some resources?" in Chapter 2). Others include a continuation of efforts authorized last year to provide a direct measure of PWS herring abundance to help manage harvests and a "carry forward" project from FY 94 involving herring genetic stock identification. Another project would provide coded wire tag data for use in managing the herring fishery.

Draft Work Plan

Passive Use

<u>Recovery Status</u>: Passive use of resources includes the appreciation of the aesthetic and intrinsic values of undisturbed areas, the value derived from simply knowing that a resource exists, and other nonuse values. Injuries to passive uses are tied to public perceptions of injured resources.

<u>Recovery Objective</u>: Passive uses will have recovered when people perceive that aesthetic and intrinsic values associated with the spill area are no longer diminished by the oil spill.

<u>Proposed Projects</u>: Any project that aids the recovery of injured resources or prevents further injuries will assist in the recovery of passive-use values. No FY 95 project proposals were submitted that address only passive use. Because the recovery of passive uses requires that people know when recovery has occurred, the availability of information to the public will continue to play an important role in the restoration of passive uses. In this way, the public information component of the Administration budget supports recovery of passive use values.

Pigeon Guillemots

<u>Recovery Status</u>: It has been estimated that between 1,500-3,000 pigeon guillemots may have been killed by the oil spill (perhaps 10-15% of the pigeon guillemot population in the Gulf of Alaska). The pigeon guillemot population in Prince William Sound was in decline before the spill. The oil spill probably increased the rate of decline for this species in the spill area, although the magnitude of the incremental injury is difficult to estimate. The causes of the pre-spill decline are unknown.

<u>Recovery Objective</u>: Pigeon guillemots will have recovered when populations are stable or increasing.

Proposed Projects (Pigeon Guillemots):

| Cate- | Project | J | | FY95 |
|-------|---------|--|-------|------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95025C | Pigeon Guillemots and River Otters as Bio- indicators of Nearshore Ecosystem Health | R | \$189,200 |
| 1 | 95041 | Introduced Predator Removal from IslandsFollow-up Surveys | GR | \$66,500 |
| 1 | 95173 | Factors Affecting Recovery of PWS Pigeon Guillemot Populations | R | \$408,800 |
| 1 | 95023 | Food Web Relationships of Pelagic Species Exhibiting Long-term Decline | R | \$133,200 |
| 2 | 95159 | Surveys to Determine Additional Oil Spill Effects and Recovery of Marine Bird and Sea Otter | R | <u>\$426,800</u> |
| | | Populations in PWS | Total | \$1,224,500 |

Projects proposed for FY 95 include continued efforts from FY 94 to monitor pigeon guillemots and also investigate whether food, predation or toxicity are limiting recovery. In addition to the specific projects noted above, there are a number of other research proposals that would focus on issues surrounding forage fish resources that could have important implications for pigeon guillemots (see "Is food limiting recovery of injured resources?" in Chapter 2).

Pro- Aller Contractor

Pink Salmon

<u>Recovery Status</u>: Pink salmon studies have demonstrated egg mortality, fry deformities, and reduced growth in juveniles. Populations may have declined, but there is uncertainty as to the full extent and mechanism of injury. However, there is evidence of continued damage in some stocks from exposure to oil, and there has been a precipitous decline to both wild and hatchery stocks of pink salmon in Prince William Sound since 1991.

<u>Recovery Objective</u>: Pink salmon will have recovered when populations are healthy and productive and exist at pre-spill abundance (an indication of recovery is when egg mortalities in oiled areas match pre-spill level or levels in unoiled areas.)

| Cate- | Project | | | FY95 |
|-------|---------|--|--------------------|-----------------|
| gory | Number | Project Title | Type | Cost |
| 1 | 95076 | Effects of Oiled Incubation Substrate on Survival and Straying of Wild Pink Salmon | R | \$179,900 |
| 1 | 95137 | Prince William Sound Salmon Stock Identification and Monitoring Studies | GR | \$277,500 |
| 1 | 95191A | Investigating and Monitoring Oil Related Egg and Alevin Mortalities | R | \$265,000 |
| 1 | 95191B | Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study) | R | \$331,000 |
| 1 | 95320A | Salmon Growth and Mortality | R | \$267,800 |
| 1 | 95320E | Juvenile Salmon and Herring Integration | R | \$943,100 |
| 1 | 95320N | Nearshore Fish | R | \$635,200 |
| 1 | 95320Y | Variation in Local Predation Rates on Hatchery- Released Fry | R | \$161,200 |
| 2 | 95024 | Enhancement of Wild Pink Salmon Stocks | GR | \$184,000 |
| 2 | 95069 | Restoration of Salmon Stocks of Special Importance to Native Cultures | GR | \$665,700 |
| 2 | 95139A | Spawning Channel - Port Dick Creek | GR | \$33,200 |
| 2 | 95320D | Prince William Sound Pink Salmon Genetics | GR | \$227,000 |
| 3 | 95006 | Paint River Pink Salmon Development | GR | \$173,900 |
| 3 | 95139D | Salmon Instream Habitat and Stock Restoration Pink Creek and Horse Marine Barrier Bypass Development | GR | \$61,500 |
| 4 | 95065 | PWSAC Pink Salmon Fry Mortality | R | \$59,600 |
| 4 | 95079 | Pink Salmon Restoration through Small-scale Hatcheries | GR | \$150,000 |
| 4 | 95320B | Prince William Sound Pink Salmon Stock Identification and Monitoring (CWT) | GR | \$84,300 |
| 4 | 95320C | Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in Prince William Sound | GR | \$642,200 |
| 4 | 95320K | PWSAC: Experimental Fry Release | R | <u>\$47,300</u> |
| | | | Total [.] | \$5,389,400 |

Proposed Projects:

Nineteen proposals that would directly or indirectly address pink salmon as an injured resource have been submitted for consideration in FY 95, including 12 projects identified in Evaluation Category 1 or 2. Many of the projects listed above are research projects included within the PWS System Investigation effort initiated in FY 94 to investigate various natural and human-controlled factors that influence the health and recovery of pink salmon and herring stocks in PWS (see "What is causing the failure of PWS herring and pink salmon runs?" in Chapter 2).

Additionally, there are a number of proposed projects that would investigate various aspects of the ecotoxicological effects of oil (see "Are toxic effects of oil still constraining recovery of some resources?"). Some of the proposed general restoration projects would directly manipulate habitat — such as construct spawning channels — while others would propose to provide information for use to improve management of the commercial fishery. Initial review identified significant legal or policy concerns associated with several of the proposed projects listed above (see the "Notes" in *Appendix A: FY 95 Project Proposals Summary-Information* regarding specific projects).

Recreation and Tourism

<u>Recovery Status</u>: The spill disrupted use of the spill area for recreation and tourism. Resources important for wildlife viewing include killer whales, sea otters, harbor seals, bald eagles, and various seabirds. Residual oil exists on some beaches with high value for recreation and it may decrease the quality of recreational experiences and discourage recreational use of these beaches. Closures on sport hunting and fishing also affected use of the spill area for recreation and tourism. Sport fishing resources include salmon, rockfish, Dolly Varden, and cutthroat trout. Harlequin duck are hunted in the spill area, although in some areas it has been restricted.

Recreation was also affected by changes in human use in response to the spill. For example, displacement of use from oiled areas to unoiled areas increased management problems and facility use in unoiled areas. Some facilities like the Green Island cabin and the Fleming Spit camp area were injured by clean-up workers.

<u>Recovery Objective</u>: Recreation and tourism will have recovered, in large part, when the fish and wildlife resources on which they depend have recovered, recreation use of oiled beaches is no longer impaired, and facilities and management capabilities can accommodate changes in human use.

Proposed Projects (Recreation and Tourism):

| Cate- | Project | | | FY95 |
|-------|---------|--|--------|------------------|
| gory | Number | Project Title | Туре | Cost |
| 2 | 95266 | Shoreline Assessment and Oil Removal | GR | \$1,411,100 |
| 3 | 95043A | Cordova Cutthroat Trout Habitat | GR | \$22,700 |
| 3 | 95077 | Recreation Impacts in PWS. Human Impacts as a | R | \$117,000 |
| | | Factor Constraining Long Term Ecosystem Recovery | | |
| 3 | 95200 | Public Access | H | \$50,200 |
| 4 | 95002 | Leave No Trace Education Program | GR | \$177,700 |
| 4 | 95016 | A Tribute to Prince William Sound | GR | \$161,000 |
| 4 | 95053 | Cordova's Mini-Imaginarium | GR | \$62,600 |
| 4 | 95080 | Fleming Spit Recreation Area Enhancements | GR | \$1,365,000 |
| 4 | 95082 | "Mor-Pac Hill" Campground Improvements | GR | \$360,000 |
| 4 | 95084 | Odiak Camper Park Expansion | GR | \$266,000 |
| 4 | 95085 | Cordova Historical Marine Park | GR | \$196,500 |
| 6 | 95043B | Carry-forward: Cutthroat and Dolly Varden Rehabilitation | GR | <u>\$108,600</u> |
| | | in Western PWS | Total: | \$4,298,400 |

Twelve proposals specifically pertaining to recreation and tourism services have been submitted for consideration in FY 95. One is a continuation (or "carry forward") of general restoration work initiated in FY 94 to make physical habitat improvements to a number of individual streams or lake systems in PWS to replace sport fishing opportunities damaged by the oil spill. In a large number of cases, initial review of the projects listed above identified significant legal or policy concerns associated with particular projects (see the "Notes" in *Appendix A: FY 95 Project Proposals-Summary Information* regarding specific projects). Although not specifically listed above, a number of restoration projects proposed to address other injured resources (such as salmon or sea otters) have significant implications for restoration of recreation and tourism services. That is, any project that aids the recovery of injured resources or prevents further injuries will assist recovery of recreation and tourism services.

River Otters

<u>Recovery Status</u>: River otters have suffered sublethal effects from the spill and continuing exposure to hydrocarbons.

<u>Recovery Objectives</u>: Indications of recovery are when habitat use, food habitat, and physiological indices have returned to pre-spill conditions.

Proposed Projects:

| Cate- gory | Project Number | Project Title | Туре | FY95 Cost |
|---------------|-------------------|--|-----------|--------------------------------|
| 1 | 95025C | Pigeon Guillemots and River Otters as Bioindicators of Nearshore Ecosystem Health | R | \$189,200 |
| 2 | 95062 | River Otter Recovery Monitoring | M Tota | <u>\$55,900</u> 1·\$245,100 |

Two proposed projects would monitor recovery of river otters, although the objective of one project includes investigation of the health of the nearshore marine ecosystem using river otters as a bioindicator (see "What is limiting recovery in the nearshore ecosystem?" in Chapter 2).

Rockfish

<u>Recovery Status</u>: Dead adult rockfish were recovered following the oil spill. Other rockfish were exposed to hydrocarbons and showed sublethal effects. Furthermore, closures to salmon fisheries increased fishing pressures on rockfish which may be affecting their population. However, the extent and mechanism of injury to this species are unknown.

Recovery Objective: Without further study, recovery cannot be defined.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|--------------------------------|--------|-----------------|
| gory | Number | Project Title | Туре | Cost |
| 3 | 95111 | Sustainable Rockfish Yield | GR | \$222,600 |
| 3 | 95112 | Rockfish Restoration Objective | GR | <u>\$53,700</u> |
| | | - | Total: | \$276,300 |

The projects proposed for FY 95 would document the nature and extent of injury to rockfish and the status of recovery work on the development of a rockfish management plan. Although both projects are consistent with the *Draft Restoration Plan*, they were initially identified as a low priority pending a final report on earlier work. There were also concerns that they may involve normal agency management.

Draft Work Plan

Sea Otters

<u>Recovery Status</u>: Sea otters do not appear to be recovering, but are expected to eventually recover to their pre-spill population. Exactly what population increases would constitute recovery is very uncertain, as there is no population data from 1986 to 1989, and the population may have been increasing in Eastern Prince William Sound during that time. In addition, only large changes in the population can be reliably detected with current measuring techniques. However, there are recent indications that the patterns of juvenile and mid-aged mortalities are returning to pre-spill conditions.

<u>Recovery Objective</u>: Sea otters will be considered recovered when population abundance and distribution are comparable to pre-spill abundance and distribution, and when all ages appear healthy.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|---|------------|---------------------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95025B | Sea Otter Abundance and Distribution, Food Habits and Population Assessment | R | \$168,100 |
| 1 | 95025H | Effects of Predatory Invertebrates on Nearshore Clam Populations in PWS | R | \$123,400 |
| 1 | 95087 | Relation of Sea Urchin Population Structure to Recovery of Injured Nearshore Vertebrate Predators | R | \$48,800 |
| 2 | 95009C | Trophic Dynamics and Energy Flow: Impacts of Herring Spawn and Sea Otter Predation on Nearshore Benthic Community Structure | R | \$217,300 |
| 2 | 95025F | Availability and Utilization of <i>Musculus</i> spp. as Food for Sea Ducks and Sea Otters | R | \$5,500 |
| 2 | 95075 | Population Structure of Blue Mussels in Relation to Levels of Oiling and Densities of Vertebrate Predators | R | \$197,500 |
| 2 | 95159 | Surveys to Determine Additional Oil Spill Effects and Recovery of Marine Bird and Sea Otter Populations in PWS | Μ | \$426,800 |
| 3 | 95025G | Relation of Clam Population Structure to Recovery of Injured Nearshore Vertebrate Predators | R Total | <u>\$208,500</u> \$1,395,900 |

Nearly all of the projects listed above are part of an integrated research proposal that would examine issues pertaining to the recovery of top-level vertebrate predators, such as the sea otter, in the nearshore ecosystem (see "What is limiting recovery in the nearshore ecosystem?" in Chapter 2). Another project would provide monitoring data to help assess the recovery status of sea otters.

Sockeye Salmon

<u>Recovery Status</u>: Sockeye salmon in Red Lake, Akalura Lake, and lakes in the Kenai River system declined in population because of adult overescapement. The Red Lake system may be recovering because the plankton has recovered, and fry survival improved in 1993. However, Akalura Lake and Kenai River lakes have not recovered: smolt production has continued to decline from these lakes. In the Kenai River lakes, for example, smolt production has declined from 30 million in 1989 to 6 million in 1990, and to less than 1 million in 1993.

<u>Recovery Objective</u>: Sockeye salmon in the impacted lakes will have recovered when populations are able to support overwinter survival rates and smolt outmigrations comparable to pre-spill levels.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|--|--------|-----------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95048 | Historical Analysis of Sockeye Salmon Growth | M | \$99,200 |
| 1 | 95105 | Kenai River Ecosystem Restoration Pilot | GR | \$404,800 |
| | | Enclosure Study | | |
| 1 | 95255 | Kenai River Sockeye Restoration | GR | \$645,000 |
| 1 | 95258 | Sockeye Salmon Overescapement | Μ | \$998,100 |
| 2 | 95133 | English Bay River Sockeye Salmon Subsistence | GR | \$147,200 |
| | | Project | | |
| 3 | 95139D | Salmon Instream Habitat and Stock Restoration | GR | \$61,500 |
| | | Pink Creek and Horse Marine Barrier Bypass Development | | |
| 3 | 95259 | Restoration of Coghill Lake Sockeye | R | \$333,000 |
| 4 | 95050 | A Test of Sonar Accuracy in Estimating | GR | \$79,300 |
| | | Escapement of Sockeye Salmon | | |
| 4 | 95125 | Tatitlek Sockeye Salmon Release Program | GR | <u>\$39,000</u> |
| | | | Total. | \$2,807,100 |

Several of the FY 95 proposed projects would continue on-going monitoring and research efforts to understand the damage caused by 1989 spawning overescapements into the freshwater ecosystems of the Kenai and Kodiak sockeye spawning and rearing systems as well as evaluate potential restoration options. This would include efforts such as the collection of genetic stock information to help identify individual stocks and permit better management of fishery harvests (see "Stock separation projects for fisheries management" in Chapter 2). Several of the other project proposals would involve general restoration efforts intended to replace or enhance commercial or subsistence sockeye resources. This includes a proposal to continue fertilization efforts at Coghill Lake in PWS, an expansion of a FY 94 salmon instream restoration projects to establish sockeye salmon runs near the communities of Tatitlek and English Bay for subsistence harvest. (A comprehensive review of sockeye restoration efforts will be conducted by the Chief Scientist in early October.)

Subsistence

<u>Recovery Status</u>: Subsistence users say that maintaining their subsistence culture depends on uninterrupted use of subsistence resources. The more time users spend away from subsistence activities, the less likely they will return to the activities. Continuing injury to natural resources used for subsistence may affect the way of life of entire communities.

<u>Recovery Objective</u>: Subsistence will have recovered when injured subsistence resources are healthy and productive and exist at pre-spill levels and people are confident that the resources are safe to eat. One indication that recovery has occurred is when the cultural values provided by gathering, preparing, and sharing food are reintegrated into community life.

Proposed Projects:

| Cate- | Project | - | | FY95 |
|-------|---------|--|------|-------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95009D | Survey and Experimental Enhancement of Octopuses in Intertidal Habitats | R | \$188,900 |
| 1 | 95131 | Clam RestorationNanwalek, Port Graham, Tatitlek | GR | \$445,000 |
| 1 | 95138 | Elders/Youth Conference | GR | \$85,800 |
| 1 | 95244 | Seal and Sea Otter Cooperative Subsistence Harvest Assistance | GR | \$89,900 |
| 1 | 95272 | Chenega Chinook Release Program | GR | \$47,200 |
| 2 | 95024 | Enhancement of Wild Pink Salmon Stocks | GR | \$184,000 |
| 2 | 95027 | Kodiak Shoreline Assessment: Monitoring Surface and Subsurface Oil | М | \$447,800 |
| 2 | 95069 | Restoration of Salmon Stocks of Special Importance to Native Cultures | GR | \$665,700 |
| 2 | 95132 | Port Graham and Nanwalek Subsistence Baseline | GR | \$518,700 |
| 2 | 95133 | English Bay River Sockeye Salmon Subsistence Project | GR | \$147,200 |
| 2 | 95266 | Shoreline Assessment and Oil Removal | GR | \$1,411,100 |
| 2 | 95279 | Subsistence Restoration Project | GR | \$241,600 |
| 3 | 95017 | Port Graham Coho Salmon Subsistence Fishery Restoration Project | GR | \$587,900 |
| 4 | 95123 | Tatitlek Community Store | GR | \$300,000 |
| 4 | 95124A | Tatitlek Mariculture Development Project | GR | \$109,500 |
| 4 | 95124B | Tatitlek Mariculture Development Project Capital Outlay | GR | \$405,000 |
| 4 | 95125 | Tatitlek Sockeye Salmon Release Program | GR | \$39,000 |
| 4 | 94127 | Tatitlek Coho Salmon Release Program | GR | \$39,000 |
| 4 | 95128 | Teaching Subsistence Practices and Values | GR | \$69,000 |
| 4 | 95129 | Tatitlek Fish and Game Processing Center and Smokery | GR | \$515,500 |
| 4 | 95130 | Mental Health Center | GR | \$106,100 |

Draft Work Plan

Appendix B

Proposed Projects (Subsistence continued).

| Cate- | Project | | | FY95 |
|-------|---------|---|--------|------------------|
| gory | Number | Project Title | Type | Cost |
| 4 | 95134 | Chenega Bay Mariculture Development Project | GR | \$184,300 |
| 4 | 95135 | Subsistence Harvest Support | GR | \$50,000 |
| 4 | 95136 | Skin Sewing Crafts Restoration | GR | \$29,900 |
| 4 | 95140 | Subsistence Skills Program | GR | \$36,700 |
| 5 | 95428CL | O Closeout: Subsistence Planning | GR | <u>\$100,100</u> |
| | | | Total: | \$7,044,900 |

Although not specifically listed above, a number of restoration projects proposed to address other injured resources — such as the salmon restoration projects or efforts relating to the restoration of herring or harbor seals — have significant implications for restoration of subsistence services. That is, any project that aids the recovery of injured resources important to subsistence or prevents further injuries to those resources will assist recovery of the subsistence service.

Twenty six projects that would address the subsistence service have been proposed, including 12 projects that have been identified as Category 1 or 2. These proposed projects vary widely. They include proposals that would provide information to subsistence users about the safety of subsistence foods; a shoreline assessment of oiled beaches in the Kodiak area; a project to continue efforts to cleanse beaches that remain contaminated with oil; and several proposals that would attempt to replace or enhance subsistence fishery, bivalve and octopus/chiton resources.

In a number of cases, initial review of the projects listed above identified significant legal or policy concerns associated with particular projects (see the "Notes" in *Appendix A: FY 95 Project Proposals Summary Information* regarding specific projects). Many of the subsistence projects were proposed by subsistence users in Prince William Sound and lower Cook Inlet through the Subsistence Planning Project initiated in FY 94. Although many of these proposals have demonstrated a need and local support, they do not always have a strong enough relationship to injured natural resources. The civil settlement and policy #5 in the *Draft Restoration Plan* require that a project to restore a service must do so by restoring, replacing or acquiring the equivalent of an injured resource. Some of these projects may qualify for funding from state criminal restitution funds. Others require additional information or need to have technical issues resolved before a final review can be conducted.

Subtidal Organisms

<u>Recovery Status</u>: Certain subtidal organisms, like eelgrass and some species of algae, appear to be recovering. Other subtidal organisms, like leather stars and helmet crabs, show little signs of recovery.

<u>Recovery Objective</u>: Subtidal communities will have recovered when the community composition, age class distribution, population abundance of component species, and ecosystem functions and services in each injured subtidal habitat have returned to levels that would have prevailed in the absence of the oil spill.

| Cate- | Project | | | FY95 |
|-------|---------|---|------------|---------------------------------|
| gory | Number | Project Title | Type | Cost |
| 1 | 95106 | Subtidal Monitoring: Eelgrass Communities | M | \$200,400 |
| 1 | 95026 | Hydrocarbon Monitoring: Integration of Microbial and Chemica Sediment Data | Μ | \$146,900 |
| 2 | 95009C | Trophic Dynamics and Energy Flow. Impacts of Herring Spawn and Sea Otter Predation on Nearshore Benthic Community Structure | R | \$217,300 |
| 2 | 95027 | Kodiak Shoreline Assessment: Monitoring Surface and Subsurface Oil | Μ | \$447,800 |
| 2 | 95266 | Shoreline Assessment and Oil Removal | GR | \$1,411,100 |
| 3 | 95009A | Trophics and Community Structure in the Intertidal and Shallow Subtidal | R | \$455,400 |
| 3 | 95009B | Primary Productivity as a Factor in the Recovery of Injured Resources in PWS | R | \$218,900 |
| 3 | 95009E | Community Structure of Mobile Foragers Using the Nearshore | R | \$280,500 |
| 3 | 95025J | Primary Productivity as a Factor in the Recovery of Injured Resources in PWS | R | \$397,000 |
| 3 | 95071 | Monitoring Nearshore Fish Species for Persistence of Oil Exposure and Exotoxicological Effects | R | \$231,000 |
| 4 | 95107 | Subtidal Site Verification | М | \$56,200 |
| 5 | 95285CL | O Closeout: Subtidal Sediment Recovery Monitoring | M Total | <u>\$121,000</u> \$4,183,500 |

Proposed Projects:

Twelve proposals were submitted that directly address subtidal resources. These include a "closeout" project from FY 94 and 5 other projects identified in Evaluation Category 1 or 2. These projects include a monitoring project to reexamine sites previously studied to assess recovery of eelgrass communities by comparing diversity and abundance of organisms between oiled and unoiled areas; an effort to investigate the contribution of marine invertebrates to food web complexity; and a continued effort to cleanse beaches that remain contaminated with oil. Other proposals would investigate various aspects of community structure energy flow and primary productivity and ecotoxicological effects in intertidal areas.

MULTIPLE RESOURCE/SERVICE PROJECTS

In addition to the project proposals reviewed above, there are several projects proposed for FY 95 that would address a variety of resources or services simultaneously. Rather than report the same discussion under most of the individul resources and services this section presents information on these "multiple resource/service projects" and discusses them in several groups, including:

(1) projects that would provide administrative services, technical assistance or serve a public information purpose for all projects;

(2) habitat protection and acquisition projects that would potentially benefit a variety of injured resources or services;

(3) research into forage fish as a critical element of the marine ecosystem with implications for many injured resources and services;

(4) projects associated with the PWS System Investigation that address multiple resources;

(5) pollution prevention projects that would prevent further injury to marine resources as a means of promoting recovery of various injured resources;

(6) other, miscellaneous "multiple resource or service project" proposals or services;

(7) improvements to the Institute of Marine Science at Seward to provide needed research infrastructure that can be used for investigations to address a variety of injured resources; and

(8) the Restoration Reserve.

For more specific information regarding these individual projects, see Appendix A: FY 95 Project Proposals — Summary Information.

Administration, Technical Assistance and Public Information

Five projects of this type have been proposed for FY 95, including the administration budget for Trustee Council operating activities; closeout funding to complete the environmental impact statement process for the *Draft Restoration Plan*; an information management proposal to continue and expand the Trustee Council's public information and data management efforts; and a proposal to provide independent review of restoration and monitoring projects.

| Cate- gory | Project Number | Project Title | Type | FY95 Cost |
|---------------|-------------------|---|--------|--------------|
| 1 | 95089 | Information Management System | A | \$590,700 |
| 1 | 95100 | Administration, Science Management and Public Information | Α | \$3,596,900 |
| 3 | 95049 | Independent Review of Restoration and Monitoring Projects | Α | \$31,900 |
| 5 | 95422CL | O Close-out Restoration Plan EIS/Record of Decision | Α | \$20,000 |
| | | | Total: | \$4,239,500 |

Proposed Projects (Administration, Technical Assistance and Public Information):

Habitat Protection and Acquisition

Six projects that address habitat protection and acquisition in one manner or another have been submitted. These include proposals that would provide technical support for efforts necessary to complete negotiations to purchase land, or interests in land, from willing sellers in the spill area (e.g., site inspections, title searches, appraisals, etc.); a project that would provide technical assistance to private landowners who may wish to reduce impacts to injured resources resulting from on-going or proposed development on their land; a project to provide interim support for Afognak State Park to oversee and implement efforts to revegetate certain roads; and other projects to develop information that could be used in habitat evaluations to help reduce impacts to injured resources. (The purchase costs of individual parcels or tracts of land are not reflected in these proposals and will be addressed by the Trustee Council separately.)

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|---|-------|-------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95126 | Habitat Protection and Acquisition Support | H | \$1,099,500 |
| 1 | 95505B | Data Analysis for Stream Habitat | Н | \$17,200 |
| 2 | 95058 | Restoration Assistance to Private Landowners | Н | \$423,700 |
| 4 | 95060 | Spruce Bark Beetle Infestation Impacts on Injured Fish and Wildlife Species of the <i>Exxon Valdez</i> Oil Spill | R | \$213,900 |
| 4 | 95141 | Afognak Island State Park Interim Support | GR | \$309,400 |
| 5 | 95110CL | O Close-out Habitat Protection and Acquisition | Н | \$143,900 |
| | | • | Total | \$2,207,600 |

Forage Fish Research

Several research projects proposed for FY 95 would investigate various aspects of the possible link between the lack of recovery of certain injured resources (especially marine birds and harbor seals) and forage fish. (See "Is food limiting recovery of injured resources?" in Chapter 2.)
Proposed Projects (Forage Fish Research):

| Cate- | Project | | | FY95 |
|-------|-----------|---|--------|------------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95019 | Distribution and Abundance of Forage Fish as Indicated | R | \$271,300 |
| | | by Puffin Diet Sampling | | |
| 1 | 95033 | Kittiwakes as Indicators of Forage Fish Availability | R | \$198,500 |
| 1 | < 95188BA | A Diet Composition, Reproduction Energetics and | R | \$140,000 |
| | | Productivity of Seabirds Damaged by the Exxon Valdez | | |
| | | Oil Spill | | |
| 1 | 95120BA | A Proximate Compositon and Energetic Content of Selected | R | \$43,000 |
| | | Forage Fish Species in PWS | | |
| 1 | 95163 | Abundance and Distribution of Forage Fish and their | R | \$1,294,600 |
| | | Influence on Recovery of Injured Species | | |
| 2 | 95057 | Movement of Larval and Juvenile Fishes within PWS | R | \$328,100 |
| 2 | 95121 | Stable Isotope Ratios and Fatty Acid Signatures of Selected | R | \$48,100 |
| | | Forage Fish Species in PWS | ~ | |
| 3 | 95119BA | A Food Limitation on Recovery of Injured Marine Bird | R | <u>\$124,900</u> |
| | | Populations | Total. | \$2,448,500 |

PWS System Investigation Research

Six multiple-resource projects associated with the PWS System Investigation project (95320) would investigate aspects of the PWS ecosystem that have implications for a wide variety of injured resources and services. (See "What is causing the failure of PWS herring and pink salmon runs?" in Chapter 2.)

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|-----------|---|-------------|---------------------------------|
| gory | Number | Project Title | Type | Cost |
| 1 | 95320G | Phytoplankton and Nutrients | R | \$239,300 |
| 1 | 95320H | Role of Zooplankton in the PWS Ecosystem | R | \$247,400 |
| 1 | 95320I(2) | Isotope Tracers - Food Webs of Fish | R | \$79,400 |
| 1 | 95320J | Information Systems and Model Development | R | \$836,200 |
| 1 | 95320M | Observational Physical Oceanography in PWS and the Gulf of Alaska | R | \$577,800 |
| 3 | 95320I(3) | Purchase of Isotope Radio Mass Spectrometer | R Total· | <u>\$257,400</u> \$2,237,500 |

Pollution Prevention

Two proposed projects, including one "carry forward" effort from FY 94, would seek to restore injured resources by reducing the injuries that would otherwise occur from improper disposal of oily and solid waste.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|--|--------|-----------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95115 | Sound Waste Management Plan | GR | \$352,200 |
| 6 | 95417 | Carry-forward: Waste Oil Disposal Facilities | GR | \$232,200 |
| | | | Total: | \$584,400 |

Other Miscellaneous Projects

Another set of miscellaneous projects that could potentially benefit multiple injured resources or services include a variety of research, monitoring and general restoration proposals as shown below.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|---|--------|-----------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95044 | In Stu Formation and Exotoxicity of Hydrocarbon | R | \$135,100 |
| | | Degradation Products Produced by Ultramicrobacteria | | |
| 1 | 95052 | Community Involvement and Use of Traditional Knowledge | GR | \$230,500 |
| 2 | 95018 | Partitioning of Primary Production Between Pelagic | R | \$219,200 |
| | | and Benthic Communities | | |
| 2 | 95038 | Symposium on Seabird Restoration | R | \$74,400 |
| 3 | 95022 | Foraging Efficiencies at Temporary Food Patches | R | \$183,100 |
| 3 | 95046 | Long-term Record in Tree Rings of Climatic Features | R | \$153,600 |
| 3 | 95055 | Prehistoric Ecological Baseline for PWS | R | \$256,100 |
| 3 | 95078 | Culture, History, and Ecosystems: Assessment of Cultural/ | R | \$166,700 |
| | | Historical Strategies to Building Long-term Understanding | | |
| | | of Ecosystems in the Oil Spill Area | | |
| 3 | 95098 | Identification of Seabird Feeding Areas from Remotely | GR | <u>\$74,000</u> |
| | | Sensed Data | Total: | \$1,492,700 |

Research Infrastructure Improvements

This proposed project would close out the process for preparation of the Environmental Impact Statement (EIS) for the proposed expansion and improvement of research facilities at the Institute of Marine Science in Seward. The project would provide for the completion of consultation and analysis needed to develop a recommendation regarding use of settlement funds that would be appropriate and legally permissible to support proposed improvements with an estimated cost of up to \$25 million. The Trustee Council is likely to consider this recommendation in late October 1994.

Proposed Projects:

s

| Cate- | Project | | FY95 |
|-------|--|------|----------|
| gory | Number Project Title | Туре | Cost |
| 5 | 95199CLO Institute of Marine Science Seward Improvements EIS | R | \$45,900 |

Restoration Reserve

One project (95424) would allocate \$12 million to the Restoration Reserve to provide funding for restoration activities over the long-term. The Trustee Council is considering making a yearly \$12 million allocation to the Reserve through 2001.

Proposed Projects:

| Cate- | Project | | | FY95 |
|-------|---------|---------------------|------|--------------|
| gory | Number | Project Title | Туре | Cost |
| 1 | 95424 | Restoration Reserve | RR | \$12,000,000 |

Exxon Valdez Oil Spill Trustee Council 645 "G" Street Suite 401 Anchorage, AK 99501-3451 Attn: Comments on Draft FY 95 Work Plan

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