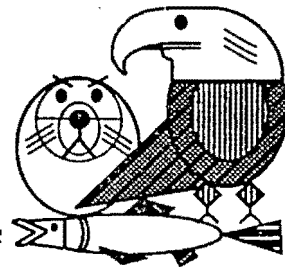


# Exxon Valdez Oil Spill Trustee Council

Restoration Office

645 G Street, Suite 401, Anchorage, Alaska 99501-3451

Phone: (907) 278-8012 Fax: (907) 276-7178



## MEMORANDUM

TO: Trustee Council Members

FROM: Sandra Schubert,  
Project Coordinator

THROUGH: Molly McCammon  
Executive Director

DATE: February 12, 1997

RE: Quarterly Project Status Summary -- December 31, 1996

RECEIVED  
FEB 12 1997

EXXON VALDEZ OIL SPILL  
TRUSTEE COUNCIL  
ADMINISTRATIVE RECORD

Attached is the *Exxon Valdez Oil Spill Project Status Summary* for the quarter ending December 31, 1996, for all projects funded by the Trustee Council during 1992, 1993, 1994, 1995, 1996, and 1997. The Summary focuses on the status of annual and final reports, and includes progress updates for FY 97 projects.

As of December 31, 1996, a total of 138 project reports had been peer reviewed and accepted by the Chief Scientist. Once accepted by the Chief Scientist, reports are submitted to the Oil Spill Public Information Center (OSPIC). As of December 31, 1996, 125 reports were available to the public through OSPIC and other libraries around the state. (See **Attachment C** for a list of libraries, and a list of reports available).

This memorandum summarizes the status of reports for each project year. **Attachment A** summarizes the status of reports by agency. **Attachment B** lists the reports that are significantly behind schedule. Reports are considered significantly behind schedule if (1) they have not yet been submitted to the Chief Scientist or were reviewed by the Chief Scientist, returned to the PI for revision longer ago than six months, and have not been revised and resubmitted to the Chief Scientist and (2) an extended due date has not been approved by the Restoration Office.

### Status of 1992 Project Reports as of December 31, 1996

A total of 60 projects were funded in the 1992 Work Plan. With very few exceptions, a final report -- that is, a report that is subject to peer review and approval by the Chief Scientist -- is required on each 1992 project. Some projects require more than one report. (NOTE: Reports

Trustee Agencies

State of Alaska: Departments of Fish & Game, Law, and Environmental Conservation

United States: National Oceanic and Atmospheric Administration, Departments of Agriculture and Interior

"in progress" are in peer review, are under revision by the PI in response to peer reviewer comments, or have been revised and are undergoing a second review by the Chief Scientist.)

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
59	64	18*	1

\* NOTE: This figure includes 9 more reports than it did in previous quarters. The report for Project FS11 will consist of 10 articles being prepared for the Canadian Journal of Fisheries and Aquatic Science. Each of these articles is now being tracked as a separate report.

#### **Status of 1993 Project Reports as of December 31, 1996**

A total of 37 projects were funded in the 1993 Work Plan. With some exceptions, a final report is required on each 1993 project. Some projects require more than one report.

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
19	21	5	2

#### **Status of 1994 Project Reports as of December 31, 1996**

A total of 42 projects were funded in the 1994 Work Plan. With some exceptions, a report that is subject to peer review by the Chief Scientist is required on each 1994 project. Some projects require more than one report.

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
28	31	6	0

#### **Status of 1995 Project Reports as of December 31, 1996**

A total of 66 projects were funded in the FY 95 Work Plan. With some exceptions, a report that is subject to peer review by the Chief Scientist is required on each 1995 project. Some projects require more than one report.

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
19	22	24	4

#### **Status of 1996 Projects as of December 31, 1996**

Annual reports (for continuing projects) or final reports (for completed projects) are due April 15, 1997 for all projects funded in the FY 96 Work Plan, unless an extended due date is agreed to by the Restoration Office. While I expect most reports to arrive on schedule (two have already been received), some extensions will likely be granted, particularly for final reports that are analyzing data from multiple years (e.g., Project 1258, Sockeye Salmon Overescapement). As it did last year, the *Invitation to Submit Restoration Proposals for FY 98* makes clear that FY 98 projects will not be authorized for any PI who has an overdue report.

#### **Status of 1997 Projects as of December 31, 1996**

October-to-December 1996 was the start-up quarter for most projects funded in the FY 97 Work Plan. A few projects have had a delayed start, due primarily to the time associated with execution of contracts. Examples are Project 97263/Port Graham Stream Assessment, for which contract negotiations between ADF&G, Port Graham Corporation, and the Kenai Economic Development District are still underway; and Project 97223/Publication of Sea Otter Data, for which contract negotiations between NOAA and Enhydra Research were delayed until December. The tentative schedule for the FY 98 work plan calls for Trustee Council action in early August, rather than at the end of August as it was this year. This will allow additional time for contract preparation prior to the beginning of the federal fiscal year, which I hope will reduce or eliminate contract-related delays in project start-up.

Project activity of interest this quarter includes: a TEK Advisory Group was established and two TEK specialists were hired (Project 97052B), an aerial survey of sea otters was conducted in Prince William Sound (Project 97025), thermal marks were applied to FY 96 pink salmon embryos at four hatcheries (Project 97188), nominations were solicited for a second round of projects designed to restore habitat along the Kenai River (Project 97180), and a contractor was selected to design the EVOS stations called for in the Sound Waste Management Plan (Project 97115).

In addition, at least one manuscript was accepted for publication (Project 96074): Iverson, S.J., K.J. Frost, and L.F. Lowry. Fatty acid signatures reveal fine scale structure of foraging

distribution of harbor seals and their prey in Prince William Sound, Alaska. Marine Ecology Progress Series. Twenty-five students were selected for participation in the Youth Area Watch project, Project 97210 (four from Tatitlek, three from Chenega Bay, four from Cordova, five from Valdez, two from Whittier, six from Seward, and one from Hinchinbrook Island). Some of the students participated in a physical oceanography cruise in December (Project 97320M). Others received AWL (age, weight, length) protocol training during the November/December juvenile herring cruises (Project 97320T).

### Conclusion

In brief, progress continues to be made toward completion and public availability of project reports. In total, 199 reports will be produced for projects funded in 1992, 1993, 1994, and 1995. As of December 31, 138 of these reports had been peer reviewed and accepted by the Chief Scientist and only 7 had not yet been submitted for peer review. Perhaps more importantly, 125 reports on studies funded by the Trustee Council are now available to the public through OSPIC.



## ATTACHMENT A

Summary of Project Report Status as of December 31, 1996

### 1992 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	0	2	2
ADFG	26	1	13	21	21
ADNR	1	0	0	1	1
DOI	33	0	5	28	25
NOAA	11	0	0	10	10
USFS	2	0	0	2	0
<b>TOTAL</b>	<b>84</b>	<b>1</b>	<b>18</b>	<b>64</b>	<b>59</b>

### 1993 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	1	1	1
ADFG	12	1	3	8	8
ADNR	0	0	0	0	0
DOI	9	1	1	7	6
NOAA	3	0	0	3	3
USFS	2	0	0	2	1
<b>TOTAL</b>	<b>28</b>	<b>2</b>	<b>5</b>	<b>21</b>	<b>19</b>

### 1994 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	1	0	0	1	0
ADFG	19	0	3	16	16
ADNR	2	0	0	2	2
DOI	6	0	2	4	3
NOAA	5	0	0	5	5
USFS	4	0	1	3	2
<b>TOTAL</b>	<b>37</b>	<b>0</b>	<b>6</b>	<b>31</b>	<b>28</b>

**ATTACHMENT A**  
**Summary of Project Report Status as of December 31, 1996**

**1995 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	4	1	1	2	1
ADFG	25	0	14	10	10
ADNR	1	0	0	1	1
DOI	6	1	3	3	2
NOAA	8	2	4	2	3
USFS	6	0	2	4	2
<b>TOTAL</b>	<b>50</b>	<b>4</b>	<b>24</b>	<b>22</b>	<b>19</b>

# ATTACHMENT B

## Reports Significantly Behind Schedule

Agency	Project Number	PI	Final or Annual	Project Title	Status of Report
DOI	MM6	Ballachey	Final	Sea otter	Due date extended to 1/31/97 (reports #2, 3, 16)
DOI	93006	Birkedahl	Final	Site specific archaeology	Never submitted
DOI	94266-1	Irvine	Final	Fate/persistence of oil	Peer reviewed and returned to PI for revision 4/8/95; due date for revision extended to 10/30/96; not received
DOI	95029	Schempf	Final	Bald eagles	Peer reviewed; returned to PI for revision 4/8/96
DOI	95038	PSG	Final	Pacific Seabird Group -- conference	Draft under review by contributors; expected to submit to Chief Scientist 11/96; not received
ADFG	B11	Rothe	Final	Harlequin duck damage assessment	Peer reviewed; returned to PI for revision 2/13/96
ADFG	FS01	Fried, Bue	Final	Spawning area injury	Never submitted; was expected 10/1/96; not received
ADFG	93033-1	Rothe	Final	Harlequin duck - Afognak habitat assessment/PWS production	Peer reviewed; returned to PI for revision 11/14/95
ADFG	93033-2	Rothe	Final	Harlequin duck restoration	Never submitted; waiting for contractor's (Fry) analysis
ADFG	94279	Miraglia	Final	Food safety testing	Peer reviewed; returned to PI for revision 6/12/96
ADFG	95166	Willette	Annual	Herring natal habitats	Peer reviewed; returned to PI for revision 6/10/96
DEC	93038	Was Piper; now who?	Final	Shoreline assessment	Peer reviewed; returned to PI for revision 1/26/96; was expected 11/96; not received
NOAA	95090	Babcock	Final	Mussel bed monitoring	Never submitted; was due 9/30/96; then expected 11/10/96; not received

**ATTACHMENT B**  
**Reports Significantly Behind Schedule**

NOAA	95121	Worthy	Annual	Fatty acid signatures of forage fish	Report submitted was incomplete so returned to PI (2/97); now waiting for submittal of complete draft
USFS	95007B	Yarborough	Final	Archaeological site restoration	Status unclear; only partial draft was submitted for peer review. Need to identify date for completion of draft

**OIL SPILL PUBLIC INFORMATION CENTER**

**645 G Street  
Anchorage, AK 99501  
(907) 278-8008  
(907) 265-9359 fax  
1-800-478-7745 Alaska  
1-800-283-7745 outside Alaska**

**Final Reports  
January 1997**

Attached is a list of published final reports for Natural Resource Damage Assessment Studies and Restoration Projects. Copies of these reports may be checked out from the Oil Spill Public Information Center. Copies are also available for viewing at the following libraries:

A. Holmes Johnson Library - Kodiak  
Alaska Historical Library - Juneau  
Alaska Resources Library - Anchorage  
Alaska State Library - Juneau  
Alaska Department of Environmental Conservation Library - Juneau  
Alaska Department of Fish and Game Habitat Library - Anchorage  
Auke Bay Fisheries Lab Library - Juneau  
Cordova Public Library - Cordova  
E.E. Rasmusson Library - University of Alaska, Fairbanks  
Kenai Community Library - Kenai  
Ketchikan Public Library - Ketchikan  
Kuskokwim Consortium Library - Bethel  
Library of Congress - Washington, D.C.  
National Library of Canada - Ottawa  
Northwest Community College Learning Resource Center - Nome  
Tuzzy Consortium Library - Barrow  
University of Alaska, Anchorage Consortium Library - Anchorage  
University of Alaska, Southeast Library - Juneau  
University of Washington Library - Seattle  
U.S. Fish and Wildlife Service Library - Anchorage  
Valdez Consortium Library - Valdez  
Z.J. Loussac Library - Anchorage

Copies of the final reports may be purchased from the following:

**Anchorage Copy Centers:**

Clay's Printing - (907) 561-6270  
TimeFrame - (907) 562-3822  
National Technical Information Service (NTIS) - (703) 487-4650

## FINAL REPORTS

January 1997

### Natural Resource Damage Assessment Studies

\* = new additions to this list.

#### Air/Water 3

Short, J.W. and P.M. Harris. 1996. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill I: Chemical sampling and analysis, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay, Alaska. (NTIS No. PB96-196951)

#### Air/Water 3 (Subtidal 3A)

Short, J.W. and P. Rounds. 1995. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill II: analysis of caged mussels, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3, Subtidal Study Number 3A), National Oceanic and Atmospheric Administration, Juneau, Alaska. (NTIS No. PB96-196969)

#### Archaeology 1

Reger, D.R., J.D. McMahan, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Archaeology Study Number 1), Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology, Anchorage, Alaska. (NTIS No. PB96-194659)

#### Bird 2

Klosiewski, S.P. and K.K. Laing. 1994. Marine bird populations of Prince William Sound, Alaska, before and after the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 2), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB97-112684)

#### Bird 3

Nyswander, D.R., C.H. Dippel, G.V. Byrd, and E.P. Knudtson. 1993. Effects of the *Exxon Valdez* oil spill on murre: a perspective from observations at breeding colonies, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 3), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB97-112700)

#### Bird 4

Bowman, T.D., P.F. Schempf, and J.A. Bernatowicz. 1993. Effects of the *Exxon Valdez* oil spill on bald eagles, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 4), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-204250)

#### Bird 6

Kuletz, K.J. 1994. Marbled murrelet abundance and breeding activity at Naked Island, Prince William Sound,

and Kachemak Bay, Alaska, before and after the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 6), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB97-112692)

#### Bird 7

Nishimoto, G. and G.V. Byrd. 1993. Effects of the *Exxon Valdez* oil spill on fork-tailed storm petrels breeding in the Barren Islands, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 7), U.S. Fish and Wildlife Service, Homer, Alaska. (NTIS No. PB97-112676)

#### Bird 9

Oakley, K.L. and K.J. Kuletz. 1994. Population, reproduction and foraging of pigeon guillemots at Naked Island, Alaska, before and after the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 9), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-204276)

#### Bird 12/Restoration Study 17

Andres, B.A. 1995. The effects of the *Exxon Valdez* oil spill on black oystercatchers breeding in Prince William Sound, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 12, Restoration Study Number 17), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-204292)

#### Coastal Habitat 1B

Babcock, M.B. and J.W. Short. 1996. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites within Prince William sound and the Guld of Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Coastal Habitat Study Number 1B), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska. (NTIS No. PB96-194824)

#### Fish/Shellfish 2

Sharr, S., B.G. Bue, S.D. Moffitt, A. Craig, and D.G. Evans. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 2), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska. (NTIS No. PB96-194840)

#### Fish/Shellfish 3

Sharr, S., C.J. Peckham, D.G. Sharp, L. Peltz, J.L. Smith, M.T. Willette, D.G. Evans, and B.G. Bue. 1996. Coded wire tag studies on Prince William Sound salmon, 1989-1991, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 3), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Anchorage, Alaska. (NTIS No. PB96-196936)

#### Fish/Shellfish 4

Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4, NMFS Component), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau,

Alaska.

Fish/Shellfish 4A

Willette, T.M., G. Carpenter, P. Shields, and S.R. Carlson. 1994. Early marine salmon injury assessment in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4A), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska. (NTIS No. PB96-194758)

Fish/Shellfish 5 (Restoration 90)

Hepler, K.R., P.A. Hansen and D.R. Bernard. 1994. Impact of oil spilled from the *Exxon Valdez* on survival and growth of Dolly Varden and cutthroat trout in Prince William Sound, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 5; Restoration Study Number 90), Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Alaska.

Fish/Shellfish 7B and 8B

Swanton, C.O., T.J. Dalton, B.M. Barrett, D. Pengilly, K.R. Brennan, and P.A. Nelson. 1993. Effects of pink salmon (*Oncorhynchus gorbuscha*) escapement level of egg retention, preemergent fry, and adult returns to the Kodiak and Chignik management areas caused by the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 7B and 8B), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Alaska.

Fish/Shellfish 18

Haynes, E., T. Rutecki, M. Murphy, and D. Urban. 1995. Impacts of the *Exxon Valdez* oil spill on bottomfish and shellfish in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 18), U.S. National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

Fish/Shellfish 22

Freese, J.L. and C.E. O'Clair. 1995. Injury to crabs outside Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 22), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska. (NTIS No. PB96-194782)

Fish/Shellfish 27

Schmidt, D.C., K.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. Kind, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. 1993. Sockeye salmon overescapement, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 27), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Soldotna, Alaska.

Fish/Shellfish 28

Geiger, H.J., W.D. Templin, J.S. Collie, and T.J. Quinn II. 1995. Run reconstruction and life history model, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 28), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau, Alaska. (NTIS No. PB96-208418)



#### Fish/Shellfish 30

DiCostanzo, C. and B.P. Simonson. 1993. Database management, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 30), Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau, Alaska.

#### Marine Mammal 1

Dahlheim, M.E. and O. von Ziegesar. 1993. Effects of the *Exxon Valdez* oil spill on the abundance and distribution of humpback whales (*Megaptera novaeangliae*) in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 1), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, Washington. (NTIS No. PB96-194634)

#### Marine Mammal 2

Dahlheim, M.E. and C.O. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 2), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, Washington. (NTIS No. PB96-194642)

#### Marine Mammal 5 (Restoration Study 73)

Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in Prince William Sound, Alaska, and adjacent areas following the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 5, Restoration Study Number 73), Alaska Department of Fish and Game, Wildlife Conservation Division, Fairbanks, Alaska. (NTIS No. PB96-197116)

#### Marine Mammal 6-1

Ballachey, Brenda. 1995. Biomarkers of damage to sea otters in Prince William Sound, Alaska following potential exposure to oil spilled from the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-1), U.S. Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-4

Bodkin, J.K., D.M. Mulcahy, C.J. Lensink. 1996. Age-specific reproduction in female sea otters (*Enhydra lutris*) from Southcentral Alaska: analysis of reproductive tracts, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-4), U.S. Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-5

Bodkin, J.L. and M.S. Udevitz. 1995. An intersection model for estimating sea otter mortality from the *Exxon Valdez* oil spill along the Kenai Peninsula, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-5), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194980)

#### Marine Mammal 6-7

DeGange, A.R., D.C. Douglas, D.H. Monson, and C.M. Robbins. 1995. Surveys of sea otters in the Gulf of Alaska in response to the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource

Damage Assessment Final Report (Marine Mammal Study Number 6-7), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-195003)

#### Marine Mammal 6-9

Doroff, A.M., and A.R. DeGange. 1995. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-9), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194972)

#### Marine Mammal 6-10

Lipscomb, T.P., R.K. Harris, R.B. Moeler, J.M. Pletcher, R.J. Haebler, and B.E. Ballachey. 1996. Histopathologic lesions associated with crude oil exposure in sea otters, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-10), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-11

Lipscomb, T.P., R.K. Harris, A.H. Rebar, B.E. Ballachey, and R.J. Haebler. 1996. Pathological studies of sea otters, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-11), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-12

Monnett, C. and L.M. Rotterman. 1992. Movements of weanling and adult female sea otters in Prince William Sound, Alaska after the *TV Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-12), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194899)

#### Marine Mammal 6-13

Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of female sea otters in Prince William Sound, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-13), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-195964)

#### Marine Mammal 6-14

Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of sea otters oiled and treated as a result of the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-14), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-196902)

#### Marine Mammal 6-15

Monson, D.H. and B. Ballachey. 1995. Age distributions of sea otters found dead in Prince William Sound, Alaska following the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-15), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194675)

#### Marine Mammal 6-17

Rebar, A.H., B.E. Ballachey, D.K. Bruden, and K.A. Kloecker. 1996. Hematology and clinical chemistry of sea otters captured in Prince William Sound, Alaska following the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-17), U.S. Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-18

Rotterman, L.M. and C. Monnett. 1991. Mortality of sea otter weanlings in eastern and western Prince William Sound, Alaska, during the winter of 1990-91, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-18), U.S. Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194998)

#### Marine Mammal 6-19

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AD	Administrative Director's Office	ALL	No report required.		
ARC1	Archaeological Survey	ADNR	Final report available to public at OSPIC.	<p>Reger, D.R., J.D. McMahon, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations.</p> <p>Four archaeological sites from which adequate collections and radiocarbon samples were obtained were sampled for sediments to test for presence of oil. Two sediment samples (Shuyak Island and Chenega Island) tested positive for oil. None of the sites yielded radiocarbon dates which appear to be significantly skewed from the expected age range. The results of the study show that reasonable dates can be obtained from the test sites despite presence of oil remains on the beach surface or in the case of two sites from within the cultural deposits. The results of the study are applicable to the sites studied and useful for management decisions based on broad general conclusions.</p>	
AW1	Surface Oil Maps	ADEC	Project terminated. DEC/NOAA overflight charts stored in Alaska Archives.	DEC/NOAA overflight charts stored in Alaska Archives.	
B02	Boat Surveys	DOI	Final report available to public at OSPIC.	<p>Klosiewski, S.P. and K.K. Laing. 1994. Marine bird populations of Prince William Sound, Alaska, before and after the Exxon Valdez oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Populations of 9 species or species groups (black oystercatcher, pigeon guillemot, cormorants, harlequin duck, loons, scoters, newgull, arctic tern, northwestern crow) declined more than expected in the oiled zone of Prince William Sound suggesting an oil effect. Most injured species were ecologically tied to intertidal or nearshore areas.</p>	Continued as 93045 and 94159.

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B03	Murres Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Nysewander, D.R., C.H. Dippel, G.U. Byrd and E.P. Knudtson. 1993. Effects of the T/V Exxon Valdez oil spill on murres: A perspective from observations at breeding colonies. U.S. Fish and Wildlife Service. Homer.</p> <p>Numbers were reduced, nesting was delayed, and productivity rates were far below normal at major colonies within the spill trajectory. Reproductive success improved slightly in 1991.</p>	Related to R11, 93022 and 94039.
B04	Eagles Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Bauman, T.D., P.F. Schempf, and J.A. Bernatowicz. 1994. Effects of the Exxon Valdez oil spill on bald eagles. U.S. Fish and Wildlife Service. Anchorage.</p> <p>Reproductive success of Prince William Sound bald eagles was significantly impaired in 1989, and nest failures were correlated with the distribution of crude oil on beaches. Although estimated direct mortality throughout the spill area was relatively large (about 300 - 900 eagles), no change in the population could be detected due to wide variation in population counts. The Prince William Sound eagle population was expected to return to its prespill level by 1993.</p>	
B06	Marbled Murrelets Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Kuletz, K.J. 1994. Marbled murrelet abundance and breeding activity at Naked Island, Prince William Sound, and Kachemak Bay, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>The marbled murrelet population at a site within the path of the oil (Naked Island) was lower in 1989 than in prespill years, but returned to normal in 1990. Murrelet numbers in Kachemak Bay where oiling was minimal did not change following the spill.</p>	Related to R15, 93051B and 94102.

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B07	Storm Petrels Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Nishimoto, M. and G.U. Byrd. 1994. Effects of oil from the T/V <i>Exxon Valdez</i> spill on fork-tailed storm petrels breeding in the Barren Islands, Alaska. U.S. Fish and Wildlife Service. Homer.</p> <p>At the largest storm-petrel colony within the spill trajectory (Barren Islands), no evidence of adverse effects to breeding petrels was found. Burrow occupancy rates were above average, nesting chronology was not delayed, and productivity was normal.</p>	
B08	Kittiwakes Damage Assessment Closeout	DOI	Draft report revised; resubmitted to Chief Scientist November 15, 1996.	<p>Irons, D.B. 1994. Effects of the <i>Exxon Valdez</i> oil spill on black-legged kittiwake colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The number of breeding pairs did not decline at colonies in the oiled area of Prince William Sound but reproductive success in 1989 was less than expected, apparently due to low hatching success. Reproductive success did not recover by 1992 but whether the decline was due to the spill is unknown.</p>	TS1
B09	Pigeon Guillemots Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Oakley, K.L. and K.J. Kuletz. 1994. Population, reproduction and foraging of pigeon guillemots at Naked Island, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The population at a major breeding site within the spill trajectory (Naked Island) declined by 50% compared to 1972-1973 levels. A long-term decline within Prince William Sound predated the spill and, therefore, the decline at naked Island could not be attributed totally to the spill. Reproduction was largely normal following the spill.</p>	93034 and 94173

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B11	Harlequin Ducks Damage Assessment Closeout	ADFG	Draft report peer reviewed; returned to PI for revision February 13, 1996.	<p>New statistical analysis of bile results indicates elevated hydrocarbon concentrations in western Prince William Sound and Kodiak birds, but also in eastern Prince William Sound birds, compared to Juneau samples. Concentrations correlate positively with proximity to the spill origin.</p>	Project conducted in conjunction with R71 and continued as 93033. Also related to B2, CH1B, TS1, R103, and 93036.
B12	Shorebirds Damage Assessment Closeout	DOI	The results of this project will be presented in two reports: (1) Final report on migrant shorebirds undergoing format review at OSPIC (2) Final report on black oystercatchers available to public at OSPIC.	<p>(1) Martin, P.D. 1993. Effects of the <i>Exxon Valdez</i> oil spill on migrant shorebirds using rocky intertidal habitats of Prince William Sound, Alaska, during Spring 1989. U.S. Fish and Wildlife Service, Anchorage.</p> <p>(2) Andres, B.A. 1994. The effects of the <i>Exxon Valdez</i> oil spill on black oystercatchers breeding in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>(1) Spring migrant shorebirds (surfbirds and black turnstones) escaped impacts because shorelines used by these species (particularly around Montague Island) were largely unoiled. (2) Black oystercatcher breeding was disrupted and hatching success reduced. Chicks raised on oiled beaches grew more slowly than chicks raised on unoiled beaches, perhaps due to ingestion of contaminated food.</p>	Related to R17, R103 and 93035.

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CH1A	Coastal Habitat Damage Assessment	USFS	Final report accepted by OSPIC; copies currently being made.	Highsmith, R.C., et al. Comprehensive assessment of coastal habitat. School of Fisheries and Ocean Sciences, UAF.  Serious and long-term lasting effects on intertidal algae. Recovery occurring but slow to none in upper intertidal habitat. Full recovery expected. Intertidal invertebrates indicate negative effects from spill. Intertidal fish findings were inconclusive.	Continued as R102, 93039 and 94086.
CH1B	Hydrocarbons in Mussels	NOAA	Final report available to public at OSPIC.	Babcock, M. NOAA. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites in PWS and the Gulf of Alaska.  <i>Exxon Valdez</i> oil is located in several sites. Reductions in hydrocarbons are seen at several sites in PWS over 1989.	R103
FS01	Spawning Area Injury	ADFG	REPORT OVERDUE. Was to be submitted to Chief Scientist by August 15, 1995; then expected October 1, 1996; now delayed to February 1997. [Note: Report will present findings from both FS01 and R60B.]	Fried, S. and B. Bue  Documented oil contamination of Prince William Sound pink salmon spawning area. Improved current and historic pink salmon escapement estimates which are necessary for accurate estimates of total wild returns. For preliminary results, see 1989, 1990 and 1991 NRDA Draft Status Reports.	Project conducted in conjunction with R60B.

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FS02	Pre-emergent Fry	ADFG	Final report available to public at OSPIC.	Sharr, S, B. Bue, et al. Injury to salmon eggs and pre-emergent fry in PWS. ADF&G.  Measured higher embryo mortalities in oil-contaminated streams than in unoiled streams.	Project conducted in conjunction with R60C; continued as 93002 and 94191.
FS03	Coded-Wire Tags Damage Assessment	ADFG	Final report available to public at OSPIC.	Sharr, S., et al. Coded wire tag studies on PWS salmon, 1989-91.  Unable to detect significant differences in survival to adults from fry emerging from oiled and control streams. Also unable to detect significant difference in survival of hatchery fish reared in oiled versus unoiled areas of Prince William Sound.	Project conducted in conjunction with R60A; continued as 93067, 93068, 94185, and 94320B.
FS04A	Early Marine Salmon Damage Assessment	ADFG	Final report available to public at OSPIC.	Willette, M., et al. Early marine salmon injury assessment in PWS. ADF&G  Detected reduced growth and survival of fry rearing in oiled areas in 1989. No significant differences in growth and survival between oiled and nonoiled areas in subsequent years. Rate of adult returns to unoiled hatcheries twice that of oiled hatcheries in 1990.	Related to most projects in 94320 (PWS System Investigation). FS1, FS2, FS3, FS4A, and FS4B measured oil damages to specific life stages. FS28 incorporated their results into a model to estimate population level damages.

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FS04B	Juvenile Pinks	NOAA	Final report available to public at OSPIC.	Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats. NOAA, NMFS, Auke Bay Lab, Juneau, AK.  Documented exposure and contamination of juvenile salmon in Prince William Sound. Contamination was associated with reduced growth. Ingestion of oil or oiled prey was route of contamination.	FS4A, AW3, and ST3A.
FS05	Dolly Varden Damage Assessment	ADFG	Final report available to public at OSPIC. Report includes data from R090.	Hepler, K.R., P. A. Hansen, D.R. Bernard. Impact of oil spilled from the <i>Exxon Valdez</i> on survival and growth of Dolly Varden and cutthroat trout in PWS, AK. ADF&G.  Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.	Combined with R90.

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FS11	Herring Injury	ADFG	The results of this project will be presented in 10 articles prepared for the Canadian Journal of Fisheries and Aquatic Science. In January 1997 it was decided that the articles will be peer reviewed by the Chief Scientist following their acceptance by the journal. All of the articles have been submitted to the journal and many have been accepted by the journal. The Chief Scientist is currently awaiting receipt of the accepted articles from the PI.	<p>(1) Brown, et al. Introduction to the studies of EVOS.</p> <p>(2) McGurk, et al. Egg-larval mortality.</p> <p>(3) Hose, et al. Sublethal effects of EVOS on embryos and larvae: cytogenetics, etc.</p> <p>(4) Kocan, et al. Sensitivity of embryos to PBCO.</p> <p>(5) Norcross, et al. Distribution, abundance of larval herring in Prince William Sound.</p> <p>(6) Kocan, et al. Reproductive success of herring.</p> <p>(7) Brown and Debeves. Effects of EVOS on survival of herring.</p> <p>(8) Marty, et al. Histopathology and cytogenetics.</p> <p>(9) Brown, et al. Pacific herring in Prince William Sound after EVOS.</p> <p>(10) Okihiro, et al. Adult histopathology.</p> <p>Adult herring migrating to the spawning grounds in 1989 were exposed to oil. Exposure to oil continued throughout 1989 and into 1990. Internal tissues were damaged but the short- and long-term effects are speculative. There may have been a short-term effect which inhibited egg deposition and a long-term reproductive impairment (reduced survival of offspring). Eggs were deposited in oiled areas in 1989. Larvae hatched from exposed embryos suffered reduced survival.</p>	Similar to 94166 (Herring Spawn Deposition). Also related to 94165 and 94320.
FS13	Effects of Hydrocarbons on Bivalves	ADFG	Draft report peer reviewed; returned to PI for revision September 26, 1996.		Clams are important prey for ducks, sea otters, river otters, and bears. This study is related to studies of these species and to 93017.

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FS27	Sockeye Salmon Overescapement	ADFG	Final report available to public at OSPIC.	<p>Schmidt, D.C., T.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. King, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. 1993. Sockeye salmon overescapement, <i>Exxon Valdez</i> Oil Spill State/Federal Natural Resource Damage Assessment Final Report, ADFG, Commercial Fisheries Management and Development Division, Soldotna, AK.</p> <p>Approximately ten to fifteenfold reduction in Kenai River smolt when compared to brood year 1987. Reduced smolt production from Akalura and Red Lakes, Kodiak Island. Reduced harvests for the Kenai are forecast for 1994 with returns below escapement levels possible for 1995 and 1996. Minimal harvests of Kenai River sockeye salmon are likely. Reduced harvests are forecast for Red and Akalura Lakes for 1994 through 1996.</p>	<p>Continued as 93002 and 94258. R53 acquired new information to facilitate management of anticipated reduced future runs. R113 examined potential for hatchery-reared fry in Red Lake, but forecasted returns make the project unfeasible.</p>
FS28	Run Reconstruction	ADFG	Final report available to public at OSPIC.	<p>Geiger, H., et al. Run reconstruction and life-history model.</p> <p>Estimated losses to adult populations from oil damages to early life stages at 2 to 3 million in 1990, and 40 to 70 thousand in 1991. Projected losses of 100 to 200 thousand adults in 1993 and 1994.</p>	<p>Through this project, results from FS1, FS2, FS3, FS4A and FS4B were incorporated into a model to estimate population level damage.</p>

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FS30	Database Management	ADFG	Final report available to public at OSPIC.	<p>DiCostanzo, C. and B.P. Simonson. 1993. Database management, <i>Exxon Valdez</i> Oil Spill Final Report, ADF&amp;G, Division of Commercial Fisheries, Juneau, AK.</p> <p>Software was written to provide access to fish harvest database using the ADFG commercial fisheries Wide-Area Network (WAN). Procedures were implemented to provide reports in numerous database, spreadsheet, and statistical formats. Documentation and guidelines for using the harvest database were completed. WAN capability is now available between Juneau, Cordova, Anchorage, Kodiak, Soldotna, and Homer.</p>	This database provides a repository for all NRDA and restoration projects information.
MM1	Humpback Whales Damage Assessment	NOAA	Final report available to public at OSPIC.	<p>Dalheim, M. and O. von Ziegesar. 1993. Effects of the <i>Exxon Valdez</i> oil spill on the abundance and distribution of humpback whales (<i>megaptera novaeangliae</i>) in Prince William Sound. NMFS, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, photographic analysis of PWS humpbacks revealed 59 whales identified in 119 encounters. In 1990, 66 whales were identified in 201 encounters. The number of humpbacks encountered per day was less in 1989 and 1990 than in 1988. Because of the difference in survey effort before and after the spill, it is difficult to determine whether there was a difference in the number of humpbacks using PWS. Regarding distribution of whales in PWS: In 1988 and 1990, more whales used the Lower Knight Island Passage than in 1989. Increased vessel and aircraft traffic and distribution of prey may have been contributing factors for the temporary redistribution of whales during 1989. Despite considerable research effort, only one PWS humpback was documented to move from PWS to southeastern Alaska during 1989.</p>	

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MM2	Killer Whales Damage Assessment	NOAA	Final report available to public at OSPIC.	<p>Dalheim, M. and C. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound, Kodiak Archipelago, and Southeast Alaska. National Marine Mammal Laboratory, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, 8 resident (143 killer whales) and 4 transient pods (34 whales) were documented in 89 encounters. In 1990, 9 resident pods (148 whales) and 4 transient pods (30 whales) were identified in 80 encounters. During 1991, 7 resident pods (105 whales) and 2 transient pods (14 whales) were identified in 54 encounters. Despite increased effort over these 3 years, the number of encounters appears to be decreasing. The missing animals were not seen near Kodiak Island or southeast Alaska. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the 1989-1991 period. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, 4.3% in 1991, and zero in 1992. Killer whale annual mortality rates are usually less than 2%.</p>	

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MM6 (1of3)	Sea Otter Damage Assessment	DOI	The results of this project will be presented in 19 reports -- 15 reports have been accepted by the Chief Scientist (14 are available to the public at OSPIC); 3 reports have been peer reviewed and returned to the PIs for revision; 1 report has been revised by the PI and resubmitted to the Chief Scientist.	(1) Ballachey, B.E. Biomarkers of damage to sea otters in PWS following potential exposure to oil spilled from the T/V <i>Exxon Valdez</i> . [Final report available to public at OSPIC.] (2) Ballachey, B.E. and D.M. Mulcahy. Hydrocarbon residues in tissues of sea otters ( <i>Enhydra lutris</i> ) collected from southeast Alaska. [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.] (3) Ballachey, B.E. and D. M. Mulcahy. Hydrocarbons in hair, livers and intestines of sea otters ( <i>Enhydra lutris</i> ) found dead along the path of the <i>Exxon Valdez</i> oil spill [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.] (4) Bodkin, J.L., D.M. Mulcahy and C. Lensink. Age-specific reproduction in female sea otters ( <i>Enhydra lutris</i> ) from southcentral Alaska: analysis of reproductive tracts. [Final report available to public at OSPIC.] (5) Bodkin, J.L. and M.S. Udevitz. An intersection model for estimating sea otter mortality from the <i>Exxon Valdez</i> oil spill along the Kenai Peninsula. [Final report available to public at OSPIC.]	Continued as 93043.

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MM6(2of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	(6) Burn, D.M. Boat-based population surveys of sea otters ( <i>Enhydra lutris</i> ) in PWS in response to the <i>Exxon Valdez</i> oil spill. [Report accepted by Chief Scientist; not yet at OSPIC.] (7) DeGange, A.R., D.C. Douglas, D.H. Monson and C. Robbins. Surveys of sea otters in the Gulf of Alaska in response to the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.] (8) Doroff, A.M. and J.L. Bodkin. Sea otter foraging behavior and hydrocarbon levels in prey following the <i>Exxon Valdez</i> oil spill in PWS, Alaska [Draft report revised by PI; resubmitted to Chief Scientist January 13, 1997.] (9) Doroff, A.M. and A.R. DeGange. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.] (10) Lipscomb, T.P., R.K. Harris, R.B. Moeller, J.M. Fletcher, R.J. Haebler and B.E. Ballachey. Histopathologic lesions associated with crude oil exposure in sea otters. [Final report available to public at OSPIC.] (11) Lipscomb, T. P., R.K. Harris, A.H. Rebar, B.E. Ballachey and R.J. Haebler. Pathological studies of sea otters. [Final report available to public at OSPIC.] (12) Monnett, C. and L.M. Rotterman. Movements of weanling and adult female sea otters in PWS after the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.]	

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MM6(3of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	(13) Monnett, C. and L.M. Rotterman. Mortality and reproduction of female sea otters in PWS. [Final report available to public at OSPIC.] (14) Monnett, C. and L.M. Rotterman. Mortality and reproduction of sea otters oiled and treated as a result of EVOS. [Final report available to public at OSPIC.] (15) Monson, D.H. and B.E. Ballachey. Age distributions and sex ratios of sea otters found dead in PWS following the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.] (16) Mulcahy, D.M. and B.E. Ballachey. Hydrocarbon residues in tissues of sea otters ( <i>Enhydra lutris</i> ) collected following the <i>Exxon Valdez</i> oil spill. [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.] (17) Rebar, A.H., B.E. Ballachey, D.L. Bruden and K.A. Kloecker. Hematology and clinical chemistry of sea otters captured in PWS following the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.] (18) Rotterman, L.M. and C. Monnett. Mortality of sea otter weanlings in eastern and western PWS during the winter of 1990-91. [Final report available to public at OSPIC.] (19) Udevitz, M.S., J.L. Bodkin and D.P. Costa. Detection of sea otters in boat based surveys in PWS. [Final report available to public at OSPIC.]	

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# Exxon Valdez Oil Spill Project Status Summary

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R011	Murre Recovery Monitoring	DOI	Final report available to public at OSPIC.	<p>Dragoo, D.E., G.V. Byrd, D.G. Roseneau, D.A. Dewhurst, J.A. Cooper, and J.H. McCarthy. 1994. Population levels and reproductive performance of murre based on observations at breeding colonies four years after the T/V <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Homer</p> <p>Numbers of murre breeding at major colonies within the trajectory remained lower in 1992. Breeding chronology was delayed. Productivity at the Barren Islands was higher than in other postspill years, but still lower than normal. Productivity at Puale Bay was normal.</p>	Continued as 93022 and 94039. Also related to B3.
R015	Marbled Murrelet Restoration Study	DOI	<p>The results of this project will be presented in two reports:</p> <p>(1) Final report available to public at OSPIC.</p> <p>(2) Final report available to public at OSPIC.</p>	<p>(1) Kuletz, K.J., D.K. Marks, and N.L. Naslund. 1994. At-sea abundance and distribution of marbled murrelets in the Naked Island area, Prince William Sound, Alaska, in Summer, 1991 and 1992. U.S. Fish and Wildlife Service, Anchorage</p> <p>(2) Kuletz, K.J., N.L. Naslund, and S.K. Marks. 1994. Identification of marbled murrelet nesting habitat in the <i>Exxon Valdez</i> oil spill zone. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Using ground search techniques, 10 tree nests were found on Naked Island in 1991 and 1992. Nest trees were in stands of high volume and size class trees, and upland activity of murrelets throughout Prince William Sound was highest in such stands.</p>	Continued as part of 93051 and 94505 (closeout).

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R047	Stream Habitat Assessment	ADFG	Final report available to public at OSPIC.	<p>Kuwada, M. and K. Sundet. 1993. Stream Habitat Assessment Project: Afognak Island. ADF&amp;G.</p> <p>About 250 km of shoreline and 260 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on Afognak Island, resulting in discovery of 167 anadromous streams totaling about 56 km. Stream habitat parameters and upper extents of anadromous distribution were documented, and streams were mapped by GPS.</p>	Continued as part of 93051 and 94505 (closeout). Supported evaluation of land for habitat protection.
R053	Kenai River Sockeye Salmon Restoration	ADFG	Final report available to public at OSPIC.	<p>Tarbox, K., et al. Kenai River sockeye salmon restoration.</p> <p>Successful collection of baseline and fishery samples for genetic stock identification. Unsuccessful in choosing new adult in-river hydroacoustic equipment. Successful hydroacoustic enumeration of returning adult salmon in Upper Cook Inlet.</p>	R59 analyzed genetic samples collected by this project.
R059	Genetic Stock Identification	ADFG	Annual report peer reviewed; available to public at OSPIC.	<p>Seeb, J. and L. Seeb. Assessment of genetic stock structure of salmonids. ADF&amp;G. June 1993.</p> <p>Genetic data were collected during 1992 from spawning populations contributing to mixed-stock harvests of sockeye salmon in Cook Inlet. These data can be used to estimate the presence of Kenai River stocks in mixed-stock areas of Upper Cook Inlet.</p>	R53 collected spawning samples.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R060A/B	Prince William Sound Pink Salmon	ADFG	R060A: Final report available to public at OSPIC. R060B: Findings will be presented in report being prepared under Project FS01.	R060A: Sharr, S., et al. Coded wire tag studies on PWS salmon, 1992. R060B: See FS01.  R060A: The CWT program helped reduce the commercial harvest on damaged pink salmon populations by providing fishery managers with timely inseason fishery stock composition estimates. R060B: The escapement project provided improved pink salmon escapement information which was essential for the precise fisheries management required to protect damaged wild stocks.	Continued as 93067, 94184 (report preparation) and 94320B. Also related to R60C, which monitors and investigates mechanisms for oil damage to early life stages of pink salmon populations.
R060C	Pink Salmon Egg/Fry	ADFG, NOAA	The results of this project will be presented in two reports: (1) ADFG report available to public to OSPIC. (2) NOAA findings included in annual report prepared under 94191. See 94191 for status.	(1) Sharr, Samuel and C. Peckham. 1994. Coded wire tag studies on Prince William Sound salmon, 1992. ADFG (2) See 94191.  (1) Persistence of elevated mortalities among embryos in oiled streams versus those in unoiled streams suggests genetic damage. (2) Oil exposures completed for 1992 and 1993 brood years. All 1992 brood pinks died from bacterial kidney disease by June 1994. Spawning of 1993 brood expected in September 1995, with survival of progeny to be determined in early 1996.	Continued as 93003 and 94191. Other related projects include B11, CH1B, R60AB, R103, and 93036.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R071	Harlequin Duck Restoration and Monitoring	ADFG	Draft final report submitted to Chief Scientist April 15, 1996.	<p>Rothe, T. Breeding ecology of harlequin ducks in PWS, Alaska. ADF&amp;G.</p> <p>Crowley, D.W. 1993. Breeding habitat of harlequin ducks in PWS, AK. MS Thesis. Oregon State University, Corvallis, OR.</p> <p>Comparative harlequin data in eastern Prince William Sound for B11. 1991-1992 harlequin production in eastern Prince William Sound similar to prespill. Techniques devised to capture and track harlequins. Breeding stream parameters and nest sites described. Additional oiled mussel beds identified. Description and analysis of harlequin breeding stream habitat in eastern PWS produced in an M.S. thesis, Oregon State University (Crowley 1994).</p>	B11 corroborated harlequin status in Prince William Sound. R103 documented continued oiled prey. B2 corroborates harlequin status in PWS.
R073	Harbor Seals	ADFG	Final report available to public at OSPIC.	<p>Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in PWS and adjacent areas following EVOS. ADF&amp;G, Wildlife Conservation Division, Fairbanks, AK.</p> <p>Harbor seals continued to use heavily oiled haulouts even when unoiled sites were available nearby. They were observed to give birth and care for their pups on these sites. The pelage of both pups and adults became oiled when they used these sites or contacted oil in the water. However, the pelage became cleaner with time if they did not continue to use oiled sites. Many carcasses recovered were either stillborn or died shortly after birth. Observations suggest that stress and/or toxic effects of oil resulted in abortions, premature births, and increased mortalities in heavily oiled areas. Four book chapters prepared and in press detailing results of MM5 study.</p>	Started in 1989 as MM5. Continued as 93046 and 94064.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R090	Dolly Varden Char Monitoring	ADFG	Report being prepared under Project FS05.	See FS05.  Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.	Project combined with FS05. R90 and R106 provide information on populations of Dolly Varden and cutthroat trout for 94320 (Ecosystem Study Plan).
R092	GIS Mapping and Analysis: Restoration	ADNR	No report required.	Provided mapping and database support for restoration projects. Developed timber harvest database and land status and parcel maps for imminent threat parcels. Contributed to a 3-volume data dictionary produced for the Trustee Council by the Nature Conservancy.	Supported numerous restoration projects.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R102	Herring Bay Experimental and Monitoring Study	ADFG	Final report available to public at OSPIC.	Highsmith, R.C., M.S/ Stekoll, A.J.Hooten, P. van Tamelen, L. Deysher, L. McDonald, D. Strickland and W.P. Erickson. 1993. Herring Bay experimental and monitoring studies. School of Fisheries and Ocean Sciences, UAF.  Cover of the dominant intertidal alga, <i>Fucus gardneri</i> , was reduced at oiled/cleaned sites. <i>Fucus</i> recruitment was poor in the mid- to upper intertidal, probably due to lack of shelter from desiccation and heating by adult plants. Limpet densities continued to be lower in the upper intertidal. Recovery appeared to be occurring in the lower intertidal zone in 1990-1991 and in the upper intertidal in 1993. Results have been incorporated into an interaction web to elucidate potential oil spill effects on community dynamics.	Continued as 93039 and 94086.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R103	Oiled Mussels	ADFG, NOAA, DOI	The results of this project will be presented in four reports: (1) NOAA annual report peer reviewed; available to public at OSPIC. (2) DOI/FWS findings being incorporated into report on 93035. (3) ADFG final report available to public at OSPIC. (4) DOI/NPS final report accepted by Chief Scientist. Not yet at OSPIC.	(1) Babcock, M., P.M.Rounds, C. Brodersen and S. Rice. 1993. Recovery monitoring and restoration of intertidal oiled mussel beds in Prince William Sound impacted by the <i>Exxon Valdez</i> oil spill. NOAA, NMFS, Auke Bay Laboratory, Juneau, Alaska. (2) See 93035. (3) Faro, J.B., R.T. Bowyer, et al. 1994. River otter component of the oiled mussel bed study. (4) Irvine, G. 1993 Geographic extent and recovery monitoring of intertidal oil in mussel beds in Gulf of Alaska effected by the <i>Exxon Valdez</i> oil spill.  (1) Identified 27 mussel beds within PWS with total petroleum hydrocarbons greater than 10,000 mg/g wet weight. Site manipulation was conducted at three heavily oiled mussel beds. (2) Black oystercatcher chicks raised on oiled sites grew more slowly than chicks raised on unoiled sites. (3) Differences in levels of blood haptoglobin and Interleukin-6 ir, previously found to be elevated in river otters inhabiting oiled compared to nonoiled areas in PWS, were not observed in summer 1992. River otters from oiled areas continued to regain body size from levels noted in 1990. Suggests that river otters may be recovering from chronic effects that were observed in 1990 and 1991.	Continued as 93036, 94090, and 95090.
R104A	Site Stewardship	DOI	Final report available to public at OSPIC.	Corbett, D.G. 1994. Development of the Alaska Heritage Stewardship Program for protection of cultural resources at increased risk due to the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage, AK.  Increased public knowledge of archaeological sites following the spill led to increased vandalism. A stewardship program to train local residents to protect cultural resources was developed.	93006, 94007

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R105	Instream Survey Restoration Implementation Planning	ADFG, USFS	The results of this project will be presented in two reports (report writing funded under 93063): (1) Final report available to public at OSPIC. (2) USFS report accepted by Chief Scientist. Not yet at OSPIC.	(1) Willette, M. Survey and evaluation of instream habitat and stock restoration techniques for wild pink and chum salmon. (2) Weidemeyer, K. Survey and evaluation of instream habitat and stock restoration techniques for anadromous fish.  A number of sites were reviewed, evaluated, and ranked for possible instream restoration efforts. A number of efforts have subsequently been implemented.	Continued as 93063.
R106	Dolly Varden Restoration	ADFG	Final report available to public at OSPIC.	McCarron, S. and A.G. Hoffman, 1993. Technical support study for the restoration of Dolly Varden and cutthroat trout populations in PWS. ADF&G, Division of Sport Fish, Anchorage, AK.  The nature and extent of injury to Dolly Varden and cutthroat trout was documented in FS5. The goal of R106 was to provide information for developing a management plan to protect impacted stocks, while allowing for continued recreational fishing for sport anglers where stocks could support fisheries. Sixty-one streams were surveyed to provide this information.	FS5 and 94139.

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R113	Red Lake Sockeye Salmon Restoration	ADFG	Project canceled based on findings of FS27.	Red Lake does not need restoration effort. This project was funded in anticipation of poorer returns of sockeye salmon to Red Lake than actually occurred.	Related to FS27. NEPA compliance for Red Lake restoration project was funded through 93030, which was canceled when the project was dropped.
RT	Restoration Team	ALL	No report required.		
ST1A	Subtidal Sediments	NOAA	Final report available to public at OSPIC.	O'Clair, et al. NOAA. Petroleum hydrocarbon induced injury to subtidal sediment resources.  Subtidal sediments have been found to be contaminated at no fewer than 15 sites within Prince William Sound by June 1990. Contamination had reached at least 20 meters at some sites. Evidence of hydrocarbon movement downslope into subtidal sediments was detected by 1991.	Continued as 93047 and 94285. Other related projects include ST1B.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST1B	Subtidal Microbial	ADEC	Final report available to public at OSPIC.	<p>Braddock, Joan F., B. Rasley, T. Yeager, J. Lindstrom, D. Brown. Hydrocarbon mineralization potentials and microbial populations in marine sediments following the <i>Exxon Valdez</i> oil spill. DEC</p> <p>The numbers and activity of oil-degrading microorganisms were measured in sediments periodically for two years after the oil spill. Populations of oil-degrading microorganisms were significantly higher in sediments collected at oiled sites relative to reference sites. This information is useful in establishing the extent of contamination of the oil with time and also provides evidence that biodegradation is occurring naturally in Prince William Sound.</p>	93047
ST2A	Shallow Benthic	ADFG	No report required. (Data/findings incorporated into report on 93047.)	<p>See 93047.</p> <p>At oiled sites there was a decrease in some subtidal organisms relative to unoiled sites. Partial recovery observed in 1991.</p>	Continued as 93047 and 94285. Other related projects include B11, CH1A, R103, and TM3.
ST2B	Deep Water Benthic	ADFG	Final report available to public at OSPIC.	<p>Feder, H. 1995. Injury to deep benthos. ADFG</p> <p>No indication of oil-related damage to deep benthic environment. No oil fractions appear related to unusual benthic faunal composition. Differences between stations within and outside of oil trajectory were mainly related to sediment differences. No oil effects demonstrated.</p>	CH1A, ST1B, ST2A, ST4, ST5, ST6, ST7, ST8, and TS1.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST3A	Caged Mussels Damage Assessment	NOAA	The results of this project will be presented in two reports: (1) Final report available to public at OSPIC. (2) Final report available to public at OSPIC.	(1) Petroleum hydrocarbons in near surface seawater of PWS: chemical sampling and analysis. (2) Petroleum hydrocarbons in near surface seawater of PWS: analysis of caged mussels.  Mussels transplanted along spill trajectory accumulated particulated oil at concentrations that decreased with depth, elapsed time, and distance from heavily oiled beaches. In 1990 and 1991, low concentrations of polynuclear aromatic hydrocarbons were sporadically detected at locations adjacent to heavily oiled beaches. Petroleum hydrocarbons were detected only sporadically in mussels deployed in locations outside Prince William Sound in 1989.	AW3, ST3B
ST3B	Sediment Traps Damage Assessment	ADEC	Final report available to public at OSPIC.	Sale, David M., J. Gibeau, J. Short. Nearshore subtidal transport of hydrocarbons and sediments following the <i>Exxon Valdez</i> oil spill. ADEC  The subtidal sediment trap study demonstrated that oiled particulate matter derived from oil-impacted beaches in Prince William Sound contaminated adjacent subtidal sediments. The study further showed that the transfer rate of oil from beach to subtidal sediment was highest the year following the spill, and declined steadily thereafter.	ST3A and ST4

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ST4	Fate and Toxicity Damage Assessment	NOAA	Final report available to public at OSPIC.	<p>Fate and toxicity of spilled oil from the <i>Exxon Valdez</i>. 1994.</p> <p>Results indicate that some toxicity was still associated in 1990 and 1991 with sediments from lower intertidal zones of heavily oiled sites. The fate of <i>Exxon Valdez</i> oil will include transformation of most constituents (through biodegradation and photooxidation) mainly into carbon dioxide and water, although some constituents may persist indefinitely.</p>	AW4, ST1, ST2, ST3A, ST3B, ST7, TS1 and response studies.
ST5	Shrimp	ADFG	Final report available to public at OSPIC.	<p>Trowbridge, C. 1992. Injury to Prince William Sound spot shrimp. ADF&amp;G, Commercial Fisheries Management and Development Division, Anchorage, AK.</p> <p>Hydrocarbon analyses did not detect oil contamination with sampled spot shrimp. Shrimp collected in unoiled areas had more inflammatory gill lesions than did shrimp from the oiled area. These results indicate that oil contamination had little or no effect on spot shrimp.</p>	
ST6	Rockfish Damage Assessment	ADFG	Final report available to public at OSPIC.	<p>Hoffman, A. Injury to demersal rockfish and shallow reef habitats in PWS, 1989-91.</p> <p>Oil was determined to be the cause of death for a small number of demersal rockfish in Prince William Sound. Dead and dying rockfish were reported from the spill area. Of the five fish that were fresh enough to be necropsied, exposure to crude oil was found to be the cause of death. These results prompted additional testing for hydrocarbons in live fish. These tests showed at least 11 of 36 rockfish tested from oiled sites had been exposed to oil within 2 weeks prior to testing. None of the 13 fish from unoiled sites were exposed to oil. Subsequent studies showed some indications of sublethal injuries to rockfish from exposure to oil.</p>	ST2A and ST2B

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST7	Demersal Fishes Damage Assessment	NOAA	Final report available to public at OSPIC.	Collier, T. Assessment of oil spill impacts on fishery resources: measurement of hydrocarbons and their metabolites, and their effects, in important species. NOAA  Results show continuing exposure of several benthic fish species and pollock, suggesting continuing petroleum contamination of subtidal sediments, water and food in 1990 and 1991 at sites up to 400 miles from the spill origin.	ST1A
ST8	Sediment Data Synthesis	NOAA	Draft final report submitted to Chief Scientist November 25, 1996; under peer review. Report includes electronic hydrocarbon database with a user manual; a manuscript submitted for publication in the Journal of Environmental Science and Technology; and descriptive documentation.	Short, J. Mussel tissue and sediment hydrocarbon data synthesis, 1989-1995. NOAA.  Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	TS1, TS3, and 93053.
TM3	River Otter and Mink Damage Assessment in Prince William Sound	ADFG	Final report available to public at OSPIC.	Faro, J.B., R.T. Bowyer, J.W. Testa, and L.K. Duffy. Assessment of injury to river otters in PWS, AK following the <i>Exxon Valdez</i> oil spill. ADF&G  The results indicate that differences in home range, habitat selection, and latrine site abandonment, as well as changes in food habits, occurred in river otters.	CH1B and R103

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TS1	Hydrocarbon Analysis	NOAA	Report being prepared under ST8.	See ST8.  Coordinated the chemical analysis of all samples collected by damage assessment studies to develop a single set of analytical data comparable across projects.	ST8, TS3, and B08.
TS3	GIS Mapping and Analysis: Damage Assessment	ADNR	No report required.	Provided mapping and database support for damage assessment projects.	Supported numerous damage assessment projects, including FS 4, FS13, CH1A and R47.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93002	Sockeye Salmon Overescapement	ADFG	Annual report (funded under 94258) peer reviewed; available to public at OSPIC.	Schmidt, D., et al. Sockeye salmon overescapement. Red Lake 1994 plankton indicate downward trend associated with increased sockeye salmon fry recruitment. May suggest increased smolt production in 1995 likely. Akalura Lake failed to meet escapement goals. Adult return to Red Lake accurately forecasted by smolt program. Kenai River adult return forecast with large bounds because of uncertainty of smolt production in 1990.	Project is continuation of FS27, 93002. Continued as 94258.
93003	Salmon Egg to Pre-emergent Fry Survival	ADFG NOAA	The results of this project will be presented in two reports (funded under 94191): (1) ADFG report available to public at OSPIC. (2) NOAA results included in report prepared under 94191. See 94191 for status.	(1) Sharr, S. and J.E. Seeb. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound. (2) See 94191. Oil exposures completed for 1992 and 1993 brood years. 1992 brood pink salmon died from bacterial kidney disease; spawning not possible. Precautions to ensure survival of 1993 brood have been taken. Persistence of elevated embryo mortalities in oiled streams in 1992 indicate possible genetic damage to wild pink salmon populations from the <i>Exxon Valdez</i> oil spill. Preliminary laboratory studies support the genetic hypothesis. Additional laboratory studies demonstrate dose response of pink salmon embryos when incubated in gravel exposed to crude oil from the <i>Exxon Valdez</i> .	Started in 1989 as FS2 and continued as R60C and 94191.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93006	Site Specific Archaeological Restoration	DOI/ NPS	REPORT (funded under 94007) OVERDUE.	Birkedahl, T., et al. 1993. Archaeological site monitoring and restoration.	Continued as 94007.
				Archaeological restoration assessments conducted at 14 sites in 1993 suggest that a majority of the archaeological vandalism that can either be directly or indirectly linked to the <i>Exxon Valdez</i> oil spill event occurred in 1989 before adequate constraints were put into place over the activities of oil spill clean-up personnel. Most vandalism took the form of "prospecting" for high yield sites. In 1993, only two of the 14 sites visited showed signs of continued vandalism and the link between this recent vandalism and the <i>Exxon Valdez</i> oil spill event remains highly problematical. Oil monitoring samples from the archaeological sites have not been processed as of this date, but oil was still visible to the naked eye in the intertidal zones of two of the 14 sites visited.	
93012	Genetic Stock Identification of Kenai River Sockeye Salmon	ADFG	Draft final report (which also contains results of genetics component of 94255) submitted to Chief Scientist May 3, 1996; under peer review.	Genetic data were collected during 1992 and 1993 from spawning populations contributing to mixed-stock harvest of sockeye salmon in Cook Inlet. These data were used in a pilot study to estimate the component of Kenai River stocks harvested in mixed-stock areas of Upper Cook Inlet.	Began as R52. Continued as 94504. Spawning samples collected under 93015.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93015	Kenai River Sockeye Salmon Restoration	ADFG	Annual report peer reviewed; available to public at OSPIC	Tarbox, K., et al. Kenai River sockeye salmon restoration. Successful collection of baseline and fishery genetic samples. Successful in-season hydroacoustic survey of Upper Cook Inlet by subcontractor.	Began as R52 and continued as 94255. Genetic samples analyzed under 93012.
93016	Chenega Bay Chinook and Silver Salmon (NEPA Compliance)	ADFG	No report required (NEPA compliance only).		Continued as 94272. Also related to 93017.
93017	Subsistence Food Safety Survey and Testing	ADFG	Final report available to public at OSPIC.	Miraglia, R.A. 1995. Subsistence restoration project. ADF&G, Division of Subsistence, Anchorage, AK. First round of tests for hydrocarbon contamination of subsistence resources showed little or no contamination. Results of second round of testing are pending. The observations of abnormalities in the tested resources caused a shift in concerns of subsistence users from oil contamination to what effects these abnormalities have on these resources. A series of public meetings were held in communities to locate sites and species of concern.	Continued as 94279.
93024	Restoration of Coghill Lake Sockeye Salmon Stock	ADFG	Redraft of final report submitted to Chief Scientist May 21, 1996; under peer review.	Monitoring showed the need for modifying both the type and concentrations of fertilizer.	Continued as 94259 and 95259.
93032	Cold Creek Pink Salmon Restoration (NEPA Compliance)	ADFG	Project canceled.		R105

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93033	Harlequin Duck Restoration	ADFG	<p>The results of this project will be presented in two reports (funded under 94066):</p> <p>(1) Report on Afognak habitat assessment and PWS production survey peer reviewed and returned to PI November 14, 1995.</p> <p>(2) REPORT OVERDUE.</p> <p>Analyses of blood and physiological samples from 1993 collections not completed by UC-Davis) not received. This contract work is delinquent.</p>	<p>(1) Restoration monitoring of harlequin ducks in PWS and Afognak Island.</p> <p>Only 3 harlequin broods observed in western Prince William Sound; 14 in eastern Prince William Sound. Decreased numbers of harlequins molting in western Prince William Sound in July. Suspect incomplete gonadal development in pre-nesting western Prince William Sound harlequins. Blood/physiological analysis and hydrocarbon analyses in process. Harlequin breeding stream/nest site model in preparation. Harlequin breeding assessment completed on North Afognak Island.</p>	<p>Started in 1989 as B11 and continued as R71. 94427 and 96427 continue harlequin brood surveys.</p>
93034	Pigeon Guillemot Recovery	DOI	<p>Report (funded under 94506) available to public at OSPIC.</p>	<p>Sanger, G.A. and M.B. Cody. 1994. Survey of pigeon guillemot colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service, Anchorage.</p> <p>One hundred eighty-four colonies, concentrated in southwest Prince William Sound and at Naked Island, were identified. This colony survey confirmed that the present population of pigeon guillemots in Prince William Sound is 3,000 - 4,900.</p>	<p>Continued as 94173.</p>



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93035	Black Oystercatchers / Oiled Mussel Beds	DOI	Revised draft resubmitted to Chief Scientist October 28, 1996; under peer review. Report also includes findings from R103.	Andres, B. 1993. Potential impacts of oiled mussel beds on higher organisms: black oystercatchers. US Fish and Wildlife Service, Anchorage, AK. Growth rates of oystercatcher chicks were lower on oiled than unoiled nest sites. Some aliphatic compounds were detected in 1992 fecal samples from oiled sites. Breeding pairs increased on oiled Green Island from 1992 to 1993 but decreased on Knight Island from 1991 to 1993.	Continued as 94020.
93036	Oiled Mussel Beds	DOI, NOAA	The results of this project will be presented in two reports: (1) DOI results will be included in report being prepared under 95090; see 95090 for status. (2) Annual report peer reviewed; available to public at OSPIC.	(1) See 95090. (2) Babcock, M. Recovery monitoring and restoration of oiled mussel beds in PWS, Alaska. In 1992 and 1993, mussels and sediments from 70 mussel beds in PWS were sampled. Sediments collected from 31 of the oiled beds had total petroleum hydrocarbon concentrations greater than 10,000 ng/g wet weight. The highest concentrations were in sediments collected from Foul Bay (62,258 +/- 1,272 ng/g total polynuclear hydrocarbons). Minimally intrusive site manipulation was conducted at three heavily oiled mussel beds. Preliminary evaluations indicate these methods were not effective in reducing petroleum hydrocarbons adjacent to manipulated areas. Along the Kenai and Alaska Peninsulas, 15 mussel beds were sampled--four of which were new sites--and four of these beds showed total petroleum hydrocarbons in excess of 5,000 ng/g wet weight.	Continued as 94090.

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93038	Shoreline Assessment	ADEC	REPORT OVERDUE. Draft report peer reviewed; returned to PI for revision January 26, 1996.	Piper, E., et al. 1993 shoreline assessment.  Surface oil has become stable. Subsurface oil has decreased substantially since 1991. Oiling is discontinuous throughout the study site.	
93039	Herring Bay Experimental and Monitoring	ADFG	Results will be presented in report being prepared under 95086; see 95086 for status.	Examination of dominant intertidal alga, <i>fucus gardneri</i> , has shown that larger plants were removed from intertidal in areas affected by spill/clean-up. Where <i>fucus</i> cover was reduced, abundance of ephemeral algae often increased. Populations of grazing invertebrates, e.g., limpets and periwinkles, showed reduced densities at oiled sites in upper intertidal. Initially, barnacle recruitment was lower in quadrats on tar-covered rocks than clean quadrats, but differences disappeared at most sites over time. <i>Fucus</i> germlings and filamentous algae continued to have lower densities and percent cover on oiled than non-oiled substrates. Recovery occurring in lower/middle intertidal zones and normal community interactions returning. Upper intertidal continues to exhibit damage; recovery may take additional 2-5 years.	Evolved from CH1A and R102 and continued as 94086.
93041	Comprehensive Monitoring	NOAA	Project discontinued.		

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93042	Killer Whale Recovery	NOAA	Final report available to public at OSPIC.	Dalheim, M.E. 1994. Assessment of injuries and recovery monitoring of Prince William Sound killer whales using photo-identification techniques. National Marine Mammal Laboratory, Seattle, WA. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the period 1989-1991. Despite considerable searching effort in PWS and Southeast Alaska, the missing whales have not been observed. Given the stability of resident pods, it is assumed the missing whales are dead. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, and 4.3% in 1991. Zero mortality occurred in 1992 and 1993. The adult annual mortality rate of killer whales is usually less than 2%. Annual pod mortality rates on the order of 20% are unprecedented for North Pacific killer whales.	Close-out/report writing funded under 94092.

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93043	Sea Otter Demographics and Habitat	DOI (NBS)	<p>The results of this project will be presented in three reports (funded under 94246):</p> <p>(1) Data on recovery of sea otter carcasses being presented in MM6 (#15).</p> <p>(2) Final report available to public at OSPIC.</p> <p>(3) Final report on sea otter demographics available to public at OSPIC.</p>	<p>(1) See MM6(#15).</p> <p>(2) Bodkin, J.L. and M.S. Udevitz. 1993 trial aerial survey of sea otters in PWS, Alaska. 1994. NBS, Anchorage, AK.</p> <p>(3) Udevitz, M.S., B.E. Ballachey, and D. L. Bruden. 1995. A population model for sea otters in western PWS. USNBS. Anchorage, AK.</p> <p>Aerial survey of sea otters in Prince William Sound completed summer 1993; estimated abundance is approximately 18,000. Age distribution of sea otter carcasses recovered in spring 1993 in western Prince William Sound is similar to prespill distribution. Age- and sex-specific survival rates generated from carcass data for sea otters in Prince William Sound.</p>	Report writing funded under 94246.
93045	Marine Bird / Sea Otter Surveys	DOI	Final report available to public at OSPIC.	<p>Agler, B.A., P.E. Seiser, S.J. Kindall and D.B. Irons. 1994. Marine bird and sea otter populations in Prince William Sound, Alaska: Population trends following the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Overall marine bird population estimates in Prince William Sound have not changed significantly since 1989, but were 41% lower than 1972-1973 estimates. Rates of increase of goldeneyes and surfbird populations were higher in the unoiled zone of Prince William Sound than in the oiled zone, whereas oystercatchers increased more rapidly in the oiled zone.</p>	Started as part of B2 and continued as 94159.

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93046	Habitat Use, Behavior, and Monitoring of Harbor Seals in PWS	ADFG	Final report (funded under 94064) available to public at OSPIC.	<p>Frost, K.J. and L.F. Lowry. 1994. Habitat use, behavior, and monitoring of harbor seals in Prince William Sound, Alaska. ADFG</p> <p>Counts of seals at 25 trend sites in Prince William Sound were similar during pupping and molting in 1992 and 1993. However, 1993 pupping counts were 23% lower than in 1989. Molting counts were similar to 1989 postspill counts, but 27% lower than 1988 counts. Sixteen seals satellite-tagged since 1992 indicate that seals in central Prince William Sound haul out and feed near the same sites with little movement to other areas. Feeding usually occurs in depths of 100-200 meters, with a maximum recorded dive depth of 404 meters.</p>	<p>Started in 1989 as MM5, which was closed out as R73.</p> <p>Continued as 94064.</p>

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93047	Subtidal Monitoring	ADEC, ADFG, NOAA	The results of this project will be presented in three reports (funded under 94285): (1) NOAA sediments - Final report available to public at OSPIC. (2) ADEC microbiology - Final report available to public at OSPIC. (3) ADFG eelgrass - Final report available to public at OSPIC.	(1) Recovery of sediments in the subtidal sediment environment inside PWS. (2) Braddock, J. Microbiology of subtidal sediments: monitoring and microbial populations. (3) Jewett, S., et al. The effects of the <i>Exxon Valdez</i> oil spill on shallow subtidal communities in PWS 1989-93.  As a follow-up to previous studies from 1989-1991, the numbers and activity of oil-degrading microorganisms were measured in sediments collected in 1993. Preliminary results suggest some contamination remains in subtidal sediments. However, generally very low numbers were found where visible oil was present (e.g., subsurface sediments, Northwest Bay). Analysis of 1993 eelgrass data complete. Several infaunal and epifaunal taxa more abundant in oiled bed sites than control sites. Amphipods less abundant in oiled sites. Sea urchins are more abundant. <i>Hemosiderosis</i> in fishes from oiled sites.	Started as ST1A and continued as 94285. Report writing under 94285.
93049	Monitor Murre Colony Recovery	DOI/ FWS	Final report available to public at OSPIC.	Roseneau, D. 1995. Common murre Restoration monitoring in the Barren Islands, Alaska, 1993. U.S. Fish and Wildlife Service, AK Maritime NWR, Homer, AK.  Murre productivity in the Barren Islands was 0.4 - 0.6 chicks per nest site in 1993, up from near zero in 1989. Population counts on plots were similar to or higher than in previous postspill years.	Started as R11 and continued as 94039. (Formerly in EVOS database as 93022.)

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93051	Habitat Information for Anadromous Streams and Marbled Murrelets	ADFG, DOI, USFS	<p>The results of this project will be presented in 5 reports (funded under 94505):</p> <p>(1) ADFG Stream Habitat Assessment/PWS &amp; Lower Kenai- Final report available to public at OSPIC.</p> <p>(2) USFS Habitat Protection Info. for Channel Type Classification Study- findings included in report prepared under 95505B. See 95505B for results.</p> <p>(3) DOI Pilot Study on Capture and RadioTagging of Murrelets in PWS- Final report accepted by Chief Scientist; not yet at OSPIC.</p> <p>(4) DOI Information Needs for Habitat Protection: Marbled Murrelet Habitat Identification -Final report available to public at OSPIC.</p> <p>(5) USFS Upland Nesting Habitat of Marbled Murrelet - Final report available to public at OSPIC.</p>	<p>(1) Sundet, K., et al. 1994. Stream habitat assessment project: Prince William Sound and Lower Kenai Peninsula. ADFG</p> <p>(2) See 95505B.</p> <p>(3) Burns, R.A., et al. 1994. Pilot study on the capture and radio tagging of murrelets in PWS, AK, July and August, 1993. U.S. Fish and Wildlife Service, Anchorage, AK.</p> <p>(4) Kuletz, K.J., et al. Information needs for habitat protection: marbled murrelet habitat identification. 1994.</p> <p>(5) Characterization of the upland nesting habitat of the marbled murrelet in the <i>Exxon Valdez</i> spill area. Late season surveys, sites at the heads of bays, low elevations, high percentages of forest cover, and large trees were all consistent predictors of high murrelet activity. Radar performed better than humans in detecting murrelets and was cheaper than boat-based or ground-based surveys by humans. About 995 km of shoreline and 117 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on the lower Kenai Peninsula and in Prince William Sound, resulting in discovery of 186 anadromous streams totaling about 57 km. Stream habitat parameters were collected along all streams, upper extents of anadromous distribution were documented and streams were mapped by GIS.</p>	<p>Evolved from R15 and R47. Also related to 93045. Project closeout in FY 94 as 94505 and in FY95 as 95505B.</p>

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93053	Hydrocarbon Database	NOAA	No report required.	Continuing project with updating and quality control of hydrocarbon data. Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	Continued as 94290. This project supports most restoration projects.
93057	Damage Assessment GIS	ADNR	No report required.	Cataloged and plotted over 160 maps for public access at OSPIC. Provided mapping and database support for damage assessment studies.	Supported numerous damage assessment projects, including B11, FS13, AW1, and CH1A.
93059	Habitat Identification Workshop	USFS	No report required.	Identified parcels of non-public land containing critical habitat necessary for the recovery of injured resources and services.	
93060	Accelerated Data Acquisition	USFS	No report required.	Collected and organized existing resource data needed for the analysis of private lands in the oil spill area.	
93062	Restoration GIS	ADNR	No report required.	Provided technical mapping and database support for restoration projects. Generated spill area map and land status maps for Kachemak Bay, Seal Bay, and Eyak lands in support of habitat protection data analysis and negotiations. Plotted maps to provide public access to EVOS information.	Supported numerous restoration projects, including 93038, 93063, 93064 and R47.



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93063	Anadromous Stream Surveys	USFS	Project is data analysis and report writing for anadromous stream portion of R105. See R105 for status.	See R105.	Started as R105 and continued as 94139.
93064	Imminent Threat Habitat Protection	ADNR	No report required.	See "Opportunities for Habitat Protection/Acquisition" (2/16/93) and "Comprehensive Habitat Protection Process; Large Parcel Evaluation & Ranking, Volume I" (11/30/93). Imminent Threat Evaluation and the first round of Large Parcel Evaluation were completed. \$7.5 million from settlement funds was combined with \$14.5 million from other sources for the purchase of private inholdings in Kachemak Bay. \$29,950,000 was committed from the most recent court request for the initial payment for purchase of private land near Seal Bay on Afognak Island. The total purchase price of this transaction is \$38,700,000 with the balance to be paid in three annual installments.	
93065	Prince William Sound Recreation	USFS	Report (funded under 94217) submitted to OSPIC; undergoing formatting review.	Menefee, W. and S. Hennig. 1994. USFS. Prince William Sound recreation project. Recreation Injury Statement (10/93) was incorporated into the Draft Restoration Plan. Final report includes a prioritized list of projects and other recommendations for restoration of recreation in Prince William Sound.	Close-out/report writing funded under 94217.

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93066	Alutiiq Archeological Repository	ADEC	No report required.	Opening ceremony held May 13, 1995.	
93067	Pink Salmon Coded Wire Tag Recovery	ADFG	Final report available to public at OSPIC.	Sharr, S., and Peckham, C.J. 1993. Coded wire tag recoveries from pink salmon in PWS fisheries. Reduced commercial exploitation of damaged wild pink salmon populations through timely inseason estimates of hatchery and wild contributions to harvest. Accurate and timely stock composition estimates were used by fisheries managers to justify restriction of fishing fleet to areas where interception of damaged wild populations in mixed-stock fisheries could be minimized.	Started as FS3 and continued as R60A, 94184 (report preparation ) and 94320B.
93068	Non-Pink Salmon Coded Wire Tag Recovery	ADFG	1993 results will be included in report being prepared under 94137. See 94137 for status.	See 94137. Timely and accurate inseason estimates of hatchery and wild stock contributions to commercial harvest for improved management of wild stocks in mixed-stock fisheries.	Evolved from FS3; continued as 94137.
93AD	Administrative Director's Office		No report required.		
93FC	Financial Committee		No report required.		
93RT	Restoration Team Support		No report required.		

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94007	Site Specific Archaeological Restoration	ADNR	The results of this project will be presented in two reports (funded under 95007A): (1) Site protection plan available to public at OSPIC. (2) Annual report peer reviewed; available to public at OSPIC.	(1) Bittner, J.E. and D.R. Reger. 1995. The 1994 EVOS report, spill area site and collection plan. ADNR, Anchorage, Alaska. (2) Reger, D. 1994. Archaeological site monitoring and restoration.  Monitoring: ADNR monitored seven sites on Shuyak Island and Outer Kenai Coast (including three at Nuka Island) and found oil but no evidence of new disturbance. USFWS monitored six sites on Afognak Island and found no indication of new vandalism. NPS monitored two sites, McArthur Pass in Kenai Fjords National Park and Cape Gull on the Katmai coast, and found no new damage. Data Recovery: USFS began restoration of two sites in PWS: SEW-440 and SEW-448. Site Protection Plans: ADNR compiled information about the need for site protection, with emphasis on adequate curation of collections in the spill area.	Continuation of 93006.
94020	Black Oystercatcher Interaction with Intertidal	DOI	Project is close-out/report writing for 93035. See 93035 for status.	See 93035.	Close-out/report writing for 93035.

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94039	Common Murre Population Monitoring	DOI/FWS	Revised draft of final report (funded under 95039) submitted to Chief Scientist October 4, 1996; under peer review.	<p>Roseneau, D.G., A.B. Kettle, and G.V. Byrd. Common murre restoration monitoring in the Barren Islands, Alaska in 1994. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK</p> <p>In 1994, complete censuses and replicate index plot counts were made at the East Amatuli Island-Light Rock and Nord Island murre colonies. Although a marginally significant increasing trend was found over the 6-year post-spill period at one 2-plot index area at East Amatuli Island-Light Rock, no significant trends were detected in the other 1989-1994 East Amatuli Island-Light Rock and Nord Island population data sets. Productivity was high (0.7 fledglings per nest site) and within normal bounds, compared with other colonies.</p>	Begun as R11; continued as 93022. Close-out/report writing under 95039.
94041	Introduced Predator Removal from Islands	DOI/FWS	Annual report peer reviewed; available to public at OSPIC.	<p>Bailey, E. 1995. Introduced predator removal in the Shumigan Islands. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK.</p> <p>Removed 33 arctic foxes from Simeonof Island (no more believed remaining); removed 3 arctic foxes from Chernabura Island (population appeared to be dying out naturally). Censused populations of black oystercatchers and pigeon guillemots on above islands as well as on nearby islands with no foxes (controls). No oystercatcher nests found on fox islands; densities of both oystercatchers and guillemots are much less on fox islands than on fox-free ones. Recovery of nesting populations of oystercatchers and guillemots is expected to begin in 1995 on Simeonof and Chernabura islands.</p>	

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94043A1	Eshamy River Restoration (W. PWS)	USFS	Project discontinued.		
94043A2	Gumboot Creek Restoration (W. PWS)	USFS	No report required (NEPA only).		NOTE: Also known as Gunboat Creek.
EA completed and decision notice signed July 27, 1995.					
94043A3	Stream No. 508 Restoration	USFS	Project discontinued.		
94043A4	Stream No. 509 Restoration (W. PWS)	USFS	Project discontinued.		
94043A5	Otter Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
EA completed and decision notice signed June 28, 1995.					

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94043A6	Miners Creek/Lake Restoration (N. PWS)	USFS	Project discontinued.		
94043A7	Shrode Creek/Lake Restoration (W. PWS)	USFS	No report required (NEPA only).		
				EA completed and decision notice signed June 28, 1995.	
94043B1	Sockeye Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
				EA finalized and signed. EA concluded that Sockeye Creek is not a cost effective site for this project at this time.	
94043B2	Rocky Creek/Bay Restoration (Montague)	USFS	Redraft of final report submitted to Chief Scientist April 30, 1996; under peer review.		

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94064	Harbor Seal Habitat Use and Monitoring	ADFG	Annual report (which includes results of 94320F) peer reviewed; available to public at OSPIC. NOTE: Project also includes report writing funds for 93046.	<p>Frost, K., et al. 1995. Habitat use, behavior, and monitoring of harbor seals in PWS, AK. ADF&amp;G.</p> <p>Twenty-six seals caught and sampled September 1994 (blood, whiskers for stable isotopes, blubber for fatty acids, skin for genetics, measurements). Twelve of these instrumented with satellite-linked time-depth recorders (6 adults, 6 subadults). Aerial surveys conducted during molting period in September. Preliminary survey analysis suggests no marked increase or decrease since 1993. Eight SLTDRs functioning on 11/10/94. Most seals remain local in PWS; one subadult in Gulf of Alaska.</p>	Started as MM5; continued as R73, 93046, and 95064.
94066	Harlequin Duck Recovery Monitoring	ADFG	Project is close-out/report writing for 93033. See 93033 for status.	See 93033.	Close-out/report writing for 93033.
94086	Herring Bay Experimental and Monitoring Studies	ADFG	Annual report peer reviewed; available to public at OSPIC.	<p>Highsmith, R.C., et al. Herring Bay monitoring and restoration studies. UAF/ADF&amp;G</p> <p>Four field trips were conducted in 1994 for data and sample collections. Data was collected for population dynamics, barnacle recruitment, and water circulation studies.</p>	Population dynamics portion of 93039.
94090	Mussel Bed Restoration and Monitoring	NOAA	Annual report peer reviewed; available to public at OSPIC.	<p>Babcock, M.M., P.M. Harris, S.D. Rice, R.J. Bruyere, and D.R. Munson. 1995. Recovery monitoring and restoration of oiled mussel beds in Prince William Sound, AK. NOAA/NMFS, Juneau, AK</p> <p>Twelve mussel beds were cleaned and restored in 1994.</p>	CHIB and 93036. Continued as 95090.

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94092	Killer Whale Recovery Monitoring	NOAA	Project is close-out/report writing for 93042. See 93042 for status.	See 93042.	Continuation of 93042.
94102	Marbled Murrelet Prey and Foraging Habitat in Prince William Sound	DOI/FWS	Final report (funded under 95102) accepted by Chief Scientist. Not yet at OSPIC.	Kuletz, K.J., D.K. Marks, R. Burns, and L. Prestash. Marbled murrelet foraging patterns and habitat use during the breeding season in PWS.  Forty-seven murrelets were radio-tagged. Foraging ranges were obtained by tracking birds with boats and planes. Birds foraged up to 60 kms. from their nests (average 10 km.). The average distance from shore was 0.6 km.	R15, 93051, 95102
94110	Habitat Protection - Data Acquisition and Support	ADNR	No report required.	See Habitat Protection Working Group, "Comprehensive Habitat Protection Process; Large Parcel Evaluation and Ranking" Volumes I and II (November 2, 1994 Supplement).	Close-out under 95110-CLO.
94126	Habitat Protection and Acquisition Fund	ADNR	No report required.		94110

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94137	Stock Identification of Chum, Sockeye, Chinook, and Coho in PWS	ADFG	Redraft of final report submitted to Chief Scientist August 14, 1996. (Report is funded under 95137 and incorporates results of 93068.)	Scanned approximately half a million sockeye salmon and 1/3 million chum salmon in PWS for tags. Results of sockeye tag recoveries were used to manage fisheries in western PWS. Interception of Coghill Lake-bound wild fish was kept to a minimum.	Evolved from FS03; continued as 93068 and 95137.
94139A1	Waterfall Creek Bypass Instream Restoration	ADFG	No report required (project carried forward as Project 95139A1).		94043, carried forward as 95139A1
94139A2	Port Dick Spawning Channel	ADFG	No report required (project carried forward as 95139A2).		
94139B1	Otter Creek Bypass Instream Restoration	USFS	Annual report peer reviewed; available to public at OSPIC.	Wedemeyer, K., et al. 1995. Instream habitat and stock restoration for salmon, Otter Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK	95139B
				Otter Creek bypass rehabilitation completed.	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94139B2	Shrode Creek Bypass Instream Restoration	USFS	Annual report peer reviewed; available to public at OSPIC.	Wedemeyer, K., et al. 1995. Stream habitat and stock restoration for salmon, Shrode Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK  Shrode Creek bypass renovation completed.	95139B
94139C1	Montague Island Chum Instream Restoration	USFS	Annual report peer reviewed; not yet at OSPIC.	Schmid, D., et al. 1995. Montague Island chum salmon restoration. USDA Forest Service, Chugach N.F., Cordova, AK  Project completed for three streams on Northern Montague Island. This project completed 32 structures and 15 acres of thinning.	95139C1
94139C2	Lowe River (6.5 Mile) Instream Restoration	ADFG	No report required (project carried forward as Project 95139C2).		95139C2
94159	Marine Bird & Sea Otter Boat Surveys	DOI	Final report available to public at OSPIC.	Agler, B.A., S.J. Kendall, P.E. Seiser, and D.B. Irons. 1995. Marine bird and sea otter abundance of PWS, Alaska: Trends following the T/V <i>Exxon Valdez</i> oil spill.  Estimated 320,470 plus-or-minus 63,640 marine birds in PWS in March 1994. Goldeneye and merganser populations may still be showing effects from oil spill. They are both increasing faster in the unoiled area than in the oiled area.	Began as B2; continued as 93045.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94163	Forage Fish Influence on Recovery of Injured Species	NOAA, ADFG	The results of this project will be presented in two reports: (1) <u>NOAA</u> : Annual report peer reviewed; available to public at OSPIC. (2) <u>ADFG</u> : Annual report peer reviewed; available to public at OSPIC.	(1) Tyler, A., et al. Forage fish study in PWS, AK. UAF/NMFS. Appendix by B. Ostrand, USFWS/DOI. (2) Willette, M., et al. Forage fish influence on recovery of injured species: forage fish diet overlap.  <u>NOAA</u> : August cruise: (a) Hydroacoustic data showed fish schools mainly in the more shallow water regions near the bottom; fish appeared absent from mid-water layers over the deep passages. November cruise: (a) Temperature-depth profiles for open areas of PWS showed surface temperature 7.0C, warming to 9.0C at 50m depth. Water cooled to 5.0C with further increase in depth. Salinity gradually increased through this depth range, indicating little mixing of the water column and that cooling was occurring from the surface downward due to cold air temperatures. Over the shallow shelf areas the profiles were different, being at 8.0C and mixed to 70m. (b) Five stations were sampled for invertebrate forage species, with euphausiids the abundant crustacean at most station (c) Hydroacoustic analysis showed fish mainly located above the temperature maximum at depths of 20 to 40 meters (net sampling showed these fish were young herring mixed with young pollock). Hydrographic data indicated fish aggregations were at temperatures of 7.0 to 7.5C. A second layer of fish was seen near the bottom (likely adult pollock). <u>ADFG</u> : pproximately 1,500 stomach samples collected for analysis of diet overlap. Found Pacific herring, walleye pollock, and juvenile chum salmon common and widespread throughout western PWS.	Integrate with Projects 94320 (PWS System Investigation), 94102 (Murrelet Prey), and 94173 (Pigeon Guillemot).
94165	Herring Genetic Stock Identification in Prince William Sound	ADFG	Project deferred to FY 95 (95165).		95165

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94166	Herring Spawn Deposition and Reproductive Impairment	ADFG, NOAA	The results of this project will be presented in two reports: (1) ADFG annual report peer reviewed; available to public at OSPIC. (2) NOAA annual report peer reviewed; available to public at OSPIC.	(1) Wilcock, J.A., E.D. Brown and E. Debevec. Herring spawn deposition and reproductive impairment. (2) Carls, M.G., S.D. Rice, and R.E. Thomas. 1995. Impact of exposure of adult pre-spawn herring ( <i>Clupea harengus pallasii</i> ) on subsequent progeny. NOAA/NMFS, Juneau, AK.  Adult herring biaccumulated hydrocarbons, including ovarian tissue and ova. Adults were stressed by oil when VHS was present; VHS prevalence was correlated with PAH concentration. Eggs and larvae were not impacted by parental exposure to hydrocarbons. Factors unaffected included egg fertility, time of hatch, survival, larval stage at hatch, swimming ability, morphology, chromatid separation, and number of mitotic figures.	Coordinating with USFS regarding avian predation (94320Q).
94173	Pigeon Guillemot Recovery Monitoring	DOI/FWS	Final report available to public at OSPIC.	Hayes, D. L. 1995. Recovery monitoring of pigeon guillemot populations in PWS, Alaska. USFWS, Anchorage, AK.  Found evidence of predation on eggs and chicks on Naked Island and abandonment of eggs on Jackpot Island. On Naked Island, gadids were much more prevalent and sandlance much less prevalent in the diet of chicks in 1994 than in 1979-81. Herring or smelt accounted for ca. 32% of prey items delivered to chicks at Jackpot Island, but only ca. 1% at Naked Island.	Continued from 93034.
94184	Coded Wire Tag Recoveries from Pink Salmon in PWS	ADFG	Project is close-out/report writing for 93067. See 93067 for status.	See 93067.	Began as FS3. Continued as R60A, 93067, and 94320B.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94185	Coded Wire Tagging of Wild Pinks for Stock Identification	ADFG	Project discontinued.		
94191	Oil Related Egg and Alevin Mortalities	ADFG, NOAA	<p>The results of this project will be presented in two reports:</p> <p>(1) ADFG annual report peer reviewed; PI revised and returned to Chief Scientist December 17, 1996.</p> <p>(2) NOAA annual report peer reviewed; available to public at OSPIC.</p> <p>(NOTE: Project also includes report writing funds for R60C and 93003.)</p>	<p>(1) Seeb, J.E., et al. Oil related egg and alevin mortalities. ADF&amp;G</p> <p>(2) Heintz, R.A., S.D. Rice, and J.W. Short. 1995. Injury to pink salmon eggs and pre-emergent fry incubated in oiled gravel (laboratory study). NOAA/NMFS, Juneau, AK</p> <p><u>ADFG</u> - Collected gametes from 8 controlled and 8 oiled streams. These eggs are now being incubated and will be analyzed in 1995.</p> <p><u>NOAA</u> - 1992 brood died from bacterial kidney disease. 1993 brood emerged from incubators by 5/15/94. 18,000 fish were coded wire tagged and released May 1994; 14,000 fish were retained for PIT tagging later in the summer. Dose-related differences in growth and size of 1992 brood year observed in October 1993 were not as apparent in April 1994. Embryo survival to the development of the eye and emergence from substrate were measured in 1993 brood year, and clear relationship was observed between dose and survival to both developmental stages. During emergence period, inspected over 50,000 newly emerged fry for visible lesions and observed a dose relationship with the proportion of fish displaying edema.</p>	Began as FS02 and R060C; continued as 93003.
94199	Institute of Marine Science - Seward Improvements	ADFG	No report required.		Continued as 95199-CLO.
				Record of Decision signed by DOI, DOA (USFS), and NOAA October 31, 1994. Capital funding approved by Trustee Council November 2, 1994, subject to Executive Director's approval.	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94217	Prince William Sound Area Recreation Implementation	USFS	Project is close-out/report writing for 93065. See 93065 for status.	See 93065.	Close-out of 93065.
94244	Harbor Seal and Sea Otter Co-op Subsistence Harvest Assistance	ADFG	Annual report peer reviewed; available to public at OSPIC. (NOTE: Report also contains results from 95244.)	Fall, J. 1995. Harbor seal ( <i>Phoca vitulina</i> ) and sea otter ( <i>Enhydra lutrus</i> ) cooperative subsistence harvest assistance. ADF&G  A harbor seal/sea otter restoration workshop took place in Anchorage December 2, 1994. It was attended by more than thirty people, including representatives from eight communities which use marine mammals for subsistence. A second workshop took place on March 2, 1995.	Continued as 95244.
94246	Sea Otter Recovery Monitoring	DOI	Project is close-out/report writing for 93043. See 93043 for status.	See 93043.	Close-out/report writing for 93043.
94255	Kenai River Sockeye Salmon Restoration	ADFG	The results of this project will be presented in two reports: (1) Annual report peer reviewed; available to public at OSPIC. (2) Results of genetics component of project contained in report being prepared under Project 93012. See 93012 for status.	(1) Tarbox, K.E., R.Z. Davis, L.K. Brannian, and S.M. Fried. 1995. Kenai River sockeye salmon restoration. ADF&G, Soldotna, AK. (2) Seeb, J. See 93012.	Began as R53; continued as 93012 and 93015.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94258	Sockeye Salmon Overescapement	ADFG	Annual report peer reviewed; available to public at OSPIC. NOTE: Project also includes report writing funds for 93002.	Skilak weight of fall predictive on both escapements and fall fry abundance. 1994 fall fry had low abundance and weight. Lipid comparisons of similar length fall fry from Tustumena and Skilak indicated Skilak fall fry entered winter in poor condition in 1993. 1995 adult return needed to define magnitude and duration of reduced sockeye production.	Started as FS27; continued as 93002 and 95258.
94259	Coghill Lake Sockeye Salmon Restoration	ADFG	Annual report peer reviewed; available to public at OSPIC.	Edmundson, J.A., G.B. Kyle, and S.R. Carlson. 1995. Restoration of Coghill Lake sockeye salmon: 1994 annual report on nutrient enrichment restoration. ADF&G, Soldotna, AK.  Estimated 900,000-1,800,000 smolts outmigrated this year. Escapement approximately 7,200 adults. Response of phytoplankton to liquid fertilizer applications suggests fertilizer is not being lost to the anaerobic layer, but is actually improving the productivity of Coghill Lake.	Began as 93024.
94266	Shoreline Assessment and Oil Removal	ADEC, DOI/NBS	The results of this project will be presented in two reports: (1) <u>DOI/NBS</u> : REPORT OVERDUE. Redraft of final report peer reviewed and returned to PI for revision June 18, 1996. Due date for submission of redraft extended to October 30, 1996; report not yet received. (2) <u>ADEC</u> : Final report accepted by Chief Scientist; not yet at OSPIC.	(1) Irvine, G. NBS/DOI. Fate and persistence of oil stranded on Gulf of Alaska shorelines during EVOS. (2) Munson, D. ADEC. Shoreline assessment and oil removal.	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94272	Chenega Chinook Release Program	ADFG	Annual report peer reviewed; available to public at OSPIC.	50,300 chinook smolts released at Crab Bay on 5/27/94. Chenega residents reared and fed smolts in net pens prior to release.	Continuation of 93016.
94279	Subsistence Food Safety Testing	ADFG	Final report peer reviewed and returned to PI for revision June 12, 1996.	Miraglia, R. Subsistence restoration project: food safety testing.	Continuation of 93017.
				Test results on final fish and shellfish samples received from NMFS lab. All results so low as to be within margin of error for tests. Seal samples from Tatitlek and duck samples from Chenega Bay were collected by ADFG with assistance from local subsistence hunters. Test results found hydrocarbon contamination was at background levels.	
94285	Subtidal Sediment Recovery Monitoring	NOAA	Annual report peer reviewed; available to public at OSPIC. (NOTE: Project also includes report writing funds for 93047.)	O'Clair, C.E., J.W. Short, and S.D. Rice. 1995. Subtidal monitoring: recovery of sediments in the Northwestern Gulf of Alaska. NOAA/NMFS, Juneau, AK.	Continuation of ST2A and 93047. Continued as 95106.
94290	Hydrocarbon Data Analysis and Interpretation	NOAA	No report required.	In FY94, 2,742 samples were received and several hundred were submitted for analysis.	Continuation of ST8 and 93053. Continued as 95290.

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94320A	Salmon Growth and Mortality	ADFG	Consolidated annual report peer reviewed; available to public at OSPIC.	Growth rate of juvenile pink salmon in 1994 in PWS slightly above average compared to 1989-1993 period.	
94320B	Coded Wire Tagging Recovery-PWS Pinks	ADFG	Annual report peer reviewed; available to public at OSPIC.	Sharr, S., et al. 1994. Coded wire tag recoveries from pink salmon in PWS salmon fisheries. ADF&G.	Continued as 96186.
				Common property fisheries: 26.2 million caught, 4.4 million scanned (17%), 3,600-4,000 tags recovered. Hatchery revenue sales: 10.4 million caught, 2 million scanned (19%), 1,600 tags recovered. Scanned close to 100% of brood stock from PWS salmon hatcheries. Used results of in-season analysis, based on detection of tags, for critical management decisions regarding fishing areas and times. Ability to detect wild stock shortfalls and high abundance of hatchery fish contributed to meeting restoration goals.	
94320C	Otolith Mass Marking of PWS Pink Salmon	ADFG	Annual report peer reviewed; available to public at OSPIC.	Feasibility study initiated at PWSAC Cannery Creek Hatchery. Approximately 50,000 fry were immersed for different lengths of time and at different temperatures to determine optimum treatment for marking effectiveness and survival. Completed examination of otoliths subjected to varying levels of oxytetracycline and varying temperatures at ADFG lab. Marking was not successful for any of the treatment groups.	Continued as 96188.

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94320D	Pink Salmon Genetics	ADFG	Results of this project are included in report being prepared under Project 95320D. See 95320D for status.		94184, 94191
In ADFG lab, DNA data show upstream and intertidal spawners in the same stream genetically differ. Have also found that mainland and island populations genetically differ.					
94320E	Salmon Predation	ADFG	See 94320A.		
Walleye pollock, adult pink salmon, Pacific herring, and dolly varden trout identified as important predators on juvenile salmon in Prince William Sound.					
94320F	Harbor Seals-Trophic Interactions	ADFG	Data/findings integrated into report prepared on 94064. See 94064 for status.	See 94064.	94064. Combined with 95064 for 1995.
Preliminary fatty acid analysis of blubber samples indicates several distinct feeding patterns. Some seals appear to eat plankton-eating fishes and others piscivorous fishes/prey such as pollock and squid. Stable isotope analysis indicates different feeding patterns for subadults and most adults. Adult females in particular show a strong annual shift in prey.					

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94320G	Phytoplankton and Nutrients	ADFG	See 94320A.		
94320H	Role of Zooplankton in PWS Ecosystem	ADFG	See 94320A.	Time series of zooplankton biomass tracks predation on 0-class fish in April, May, and June.	95320H
94320I	Food Web Dependencies in PWS Ecosystem/Stable Isotopes	ADFG	See 94320A.	<u>Food Web of Fishes</u> - Conducted isotopic analysis of approximately 500 samples (i.e, roughly 2,000 isotopic determinations). <u>Marine Mammal Trophic Energetics</u> - Conducted isotopic analysis of vibrissae of 23 seals, roughly 30 samples per whisker.	
94320J	Information Systems and Model Development	ADFG	See 94320A.		

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94320K	PWSAC-Experimental Fry Release	ADFG	See 94320A.		
				Adult pink salmon will return in summer 1995 as a result of 1994 fry release. Marine survivals will be estimated based on coded wire tag data. Rearing and release strategies will be compared and differences in marine survival evaluated between rearing and release groups.	
94320L	PWSAC-Experimental Manipulation	ADFG	Final report available to public at OSPIC.		
94320M	Physical Oceanography in PWS and Gulf of Alaska	ADFG	See 94320A.		
94320N	Nearshore Fish	ADFG	See 94320A.		
94320P	SEA Program: Program Management	ADFG	See 94320A.		All subprojects of 94320.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320Q	Avian Predation on Herring Swan	USFS	See 94320A.	Bishop, M.A. 1995. Avian predation on herring spawn. Copper River Delta Institute, USDA Forest Service, Cordova, AK	95320Q
94320S	Disease Impacts on Herring	ADFG	Annual report peer reviewed; available to public at OSPIC.	<i>Ichthyophonus hoferi</i> , viral hemorrhagic septicemia virus, and other causes of morbidity in Pacific herring spawning in PWS in 1994. ADF&G.  Because of the important of <i>Ichthyophonus</i> in herring morbidity in 1994, all previous Pacific herring sampled from PWS and submitted to UC Davis (1989, 1990, 1991, 1992) were re-screened for <i>Ichthyophonus</i> . Prevalence in these samples was never more than 15% and was distributed fairly evenly among liver, kidney, and spleen, but was never in the olfactory nares.	
94417	Waste Oil Disposal Facilities	ADEC	No report required (project carried forward as 95417).		95417
94422	Environmental Impact Statement for the Draft Restoration Plan	USFS	No report required.	Final EIS released September 30, 1994. Notice of Availability in Federal Register, Vol. 59, No. 186, p. 49232, dated 9/27/94 and Vol. 59, No. 189, p. 49926, dated 9/30/94. Record of Decision (ROD) signed October 31, 1994. Copies of FEIS available through OSPIC.	Continued as 95422.

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94423	Oil Spill Public Information Center (OSPIC)	ALL	No report required.	<p>During the quarter ending 12/31/96, OSPIC staff received 323 visitors, responded to 667 requests for information (of which 149 were sent via e-mail from the Web Home Page), processed 40 interlibrary loans, loaned 258 items, distributed 1,038 documents, and acquired 2 books and 1 report. 578 documents were added to the Trustee Council Administrative Record and 2 Marine Ecosystem posters were sold. OSPIC staff received 3 NRDA/Restoration Project final reports for format review, approved 1, and distributed final copies of 7. OSPIC staff received 4 annual reports for format review, approved 4, and received final copies of 5. From 10/1/96 through 12/31/96, 5,488 people used the OSPIC World Wide Web Home Page.</p>	
94424	Restoration Reserve	ALL	No report required.	<p>The Restoration Reserve was formally established by the Court Registry Investment System on February 15, 1996. The reserve consists of securities structured to mature annually on November 15 beginning in 1997 and ending in the year 2002. To date, a total of \$36 million has been placed in the Reserve. The Trustee Council approved the transfer of another \$12 million on August 29, 1996. Pursuant to the approval motion, the transfer will be made at such time as the Executive Director determines that funds are available.</p>	

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94425	Marine Mammal Book	NOAA	No report required.	See Marine mammals and the <i>Exxon Valdez</i> . Loughlin, T.R., editor. 1994. Academic Press, Inc. 395 pages.	
				Book printed and for sale by Academic Press.	
94427	Experimental Harlequin Duck Breeding Survey	ADFG	Annual report peer reviewed; available to public at OSPIC.	Rosenberg, D.H. 1995. Experimental harlequin duck breeding survey in Prince William Sound, AK. ADF&G, Anchorage, AK.	B11, R71, 93033, 94066, 95427, and nearshore ecosystem projects.
94428	Subsistence Restoration Planning and Implementation	ADFG	Final report (which also includes results from 95428) available to public at OSPIC.	Fall, J. ADF&G. Subsistence restoration planning and implementation.	
94504	Genetic Stock Identification of Kenai River Sockeye	ADFG	Project is close-out/report writing for 93012. See 93012 for status.	See 93012.	Close-out/report writing for 93012.
94505	Information Needs for Habitat Protection	USFS	Findings included in report prepared under 95505B. See 95505B for status.	See 95505B.	Close-out of 93051. 95505B.

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94506	Pigeon Guillemot Recovery	DOI	Project is close-out/report writing for 93034. See 93034 for status.	See 93034.	Report writing for 93034.
94507	Symposium Proceedings Publication	NOAA	The 926-page EVOS Symposium Proceeding is published with distribution beginning September 1996. The publisher, American Fisheries Society (AFS), will maintain sales records which will be supplied to the PI.	Rice, S.D., R.B. Spies, D.A. Wolfe, and B. A. Wright, editors. 1996. Proceedings of the <i>Exxon Valdez</i> oil spill symposium. American Fisheries Society Symposium 18, Bethesda, Maryland.  Proceedings include 61 manuscripts in the following topic areas: fate and toxicity (8 manuscripts), intertidal (10 manuscripts), treatment effects (5), subtidal (3), herring (2), salmon (12), othe fish (5), birds (8), mammals (2), archaeology (1), subsistence (4), human impacts (2). NOTE: In FY 96, the Trustee Council approved an additional \$42,000 for the completion of the proceedings (Project 96507).	Continued as 96507.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95001	Condition and Health of Harbor Seals	ADFG Castellini, UAF	Annual report submitted to Chief Scientist April 11, 1996; under peer review.	Castellini, J.M., N.J. Meiselman, and M.A. Castellini. Understanding and interpreting hematocrit measurements in pinnipeds. Marine Mammal Science 12(2):251-264. Hematocrit measurements of pinnipeds were 4-15% higher when utilizing clinical Coulter counter methods as opposed to the more direct method of microcentrifugation. Manual restraint of animals, isoflourane anesthesia, and developmental states also affected hematocrit measurements in pinnipeds. Thus, modeling efforts that require representative hematocrit values can be markedly impacted by variations in hematocrit measurement techniques and sampling regimens.	96001
95007A	Archaeological Site Restoration - Index Site Monitoring	ADNR Reger	Annual report peer reviewed; available to public at OSPIC.		
95007B	Archaeological Site Restoration	USFS Yarborough	Partial draft of final report peer reviewed and returned to PI for revision December 20, 1996. Complete draft due to Chief Scientist by February 28, 1997. [Note: An FY 95 annual report was also submitted under this project number. It is available to the public at OSPIC, but has not been peer reviewed. The annual report was not required under Trustee Council report writing procedures.]		Report writing funded under 96007B.
95009D	Survey of Octopus and Chiton in Intertidal Habitats	USFS Scheel, PWSSC	Annual report peer reviewed; available to public at OSPIC.	Scheel, D., et al. 1996. Survey of octopus in the intertidal in PWS, AK. PWSSC, Cordova, AK	96009D
95012	Comprehensive Killer Whale Investigation	NOAA Matkin	Annual report peer reviewed; available to public at OSPIC.		96012A

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report/Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95021	Seasonal Movement and Pelagic Habitat Use by Common Murres from the Barren Islands	DOI (NBS) Hatch	Final report available to public at OSPIC.		
95025	Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI Holland-Bartels	Annual report peer reviewed; available to public at OSPIC.		96025
95025A	Nearshore Package: Project Planning and Development	DOI (NBS) Holland-Bartels	No report required.		96025
95026	Hydrocarbon Monitoring: Integration of Microbial and Chemical Sediment Data	ADEC Braddock	Final report being completed under Project 97026. See 97026 for status.		
95027	Kodiak Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC Piper	Final report accepted by Chief Scientist; not yet at OSPIC.	E. Piper. 1995 Kodiak Shoreline Oiling Assessment of EVOS.	
95029	Population Survey of Bald Eagles in PWS	DOI (FWS) Schempf	Final report peer reviewed and returned to PI for revision April 8, 1996.	Bowman, T., Schempf, P., Hodges, J. 1996. Bald eagle populations in PWS, Alaska after the <i>Exxon Valdez</i> oil spill. USFWS/DOI Surveys indicated increase in population size and apparent recovery from spill.	
95031	Reproductive Success as a Factor Affecting Recovery of Murrelets in PWS	DOI (FWS) Kuletz	Draft final report peer reviewed and returned to PI for revision October 26, 1996.	Kuletz, K.J., Kendell, S. developing a productivity index for marbled murrelets. USFWS/DOI Six sites in PWS were surveyed repeatedly by boat, June-August (n=65 surveys). Adult and juvenile seasonal patterns were described. Juvenile ratios and densities were significantly different between some sites. June adult numbers were most strongly correlated with juvenile numbers in July/August. An optional survey period was identified and power analysis defined necessary sample sizes.	94102; final report funded under 96031.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report/Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95038	Symposium on Seabird Restoration	DOI (FWS) Harrison, PSG	REPORT OVERDUE. Final report, in addition to publication of workshop proceedings, was to be submitted to Chief Scientist November 1996 -- not received.	Workshop took place September 29-October 2 in Girdwood, AK. Roughly 47 participants from Great Britain, Belgium, France, New Zealand, Japan, Canada, and USA. Primary focus was on common murre, harlequin duck, marbled murrelet, and pigeon guillemot. Achieved workshop goal by discussing seabird restoration in general, then applying the general discussions and conclusions to EVOS.	
95039	Common Murre Productivity Monitoring	DOI (FWS) Roseneau	Project is close-out/report writing for 94039. See 94039 for status.		94039
95041	Introduced Predator Removal from Islands - Follow-up Surveys	DOI (FWS) Bailey	Final report accepted by Chief Scientist; not yet at OSPIC.	Byrd, G.V., E.P. Bailey, and W. Stahl. 1996. Introduced predator removal from islands. USFWS/DOI. Homer, AK	
95043B	Carry-forward: Cutthroat and Dolly Varden Rehabilitation in Western PWS	USFS Wedemeyer	Annual report peer reviewed; not yet at OSPIC.		96043B
95052	Community Interaction/Use of Traditional Knowledge	ADFG Miraglia	Final report submitted to Chief Scientist May 1, 1996; under peer review.		96052
95058	Landowner Assistance Program	ADFG Kuwada	No report required.		
95060	Spruce Bark Beetle Impacts	ADEC Piper	Draft final report submitted to Chief Scientist October 31, 1996; under peer review.		
95064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in PWS	ADFG Frost	Annual report peer reviewed; undergoing format review at OSPIC.	Population model for harbor seals. Initial results of fatty acid analysis indicate this technique has great use for distinguishing differences in seal diets.	96064

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95074	Herring Reproductive Impairment	NOAA Carls	Draft final report (which will include five chapters submitted as manuscripts) peer reviewed and returned to PI for revision December 11, 1996.	Carls, M.G., et al. Disease, mortality, and bioaccumulations of hydrocarbons in pre-spawn herring. Carls, M.G., et al. Impact of exposure of adult pre-spawn herring to weathered crude oil on subsequent progeny. Thomas, R.E., et al. Mixed function oxidase induction in pre- and post-spawn herring by petroleum hydrocarbons. Carls, M.G., et al. Effects of incubating herring eggs in water contaminated with weathered crude oil Johnson, S.W., et al. Reproductive success of Pacific herring in PWS six years after EVOS.	Final report funded under 96074.
95076	Effects of Oiled Incubation Substrate on Survival and Straying of Wild Pink Salmon	NOAA Wertheimer	Annual report (which includes results of Project 95191B) peer reviewed; available to public at OSPIC.	Wertheimer, A. C., et al. 1996. Effects of oiled incubation substrate on straying and survival of wild pink salmon. Auke Bay Fisheries Lab, NMFS, NOAA. Juneau, AK.	96076
95086C	Herring Bay Monitoring and Restoration Studies	ADFG Highsmith, UAF	Draft final report (which includes results of 93039) peer reviewed; returned to PI for revision December 12, 1996.		Final report writing funded under 96086.
95089	Information Management System	ALL Fries	No report required.		
95090	Mussel Bed Restoration and Monitoring in PWS and Gulf of Alaska	NOAA Babcock	FINAL REPORT OVERDUE; now expected March 1997.	Babcock, M. and G. Irvine.	Final report funded under 96090.
95093	PWSAC: Restoration of Pink Salmon Resources and Services	ADFG Ferren, PWSAC	Project terminated; no report required.		
95100	Administration, Science Management and Public Information	All	No report required.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95102-CLO	Closeout: Murrelet Prey and Foraging Habitat in Prince William Sound	DOI (FWS) Kuletz	Project is close-out/report writing for 94102. See 94102 for status.	Kuletz, K.J., et al. 1995. Marbled murrelet foraging patterns in PWS, Alaska.	94102
95106	Subtidal Monitoring: Eelgrass Communities	ADFG Jewett, UAF	Draft final report peer reviewed; returned to PI for revision December 16, 1996.		Final report writing funded under 96106.
95110-CLO	Closeout: Habitat Protection and Acquisition	ADNR Fries	No report required.		
95115	Sound Waste Management Plan	ADEC PWSEDC	Final report available to public at OSPIC.		
95117-BAA	Harbor Seals and EVOS: Blubber and Lipids as Indices of Food Limitation	NOAA Castellini, UAF	Draft annual report submitted to Chief Scientist September 15, 1996; under peer review.		Continued under 96001.
95121	Fatty Acid Signatures of Selected Forage Fish Species in PWS	NOAA Worthy, Texas A&M University	Draft report not yet submitted to Chief Scientist. (The draft submitted to NOAA on January 23, 1997 was deemed incomplete and so is being reworked.)		
95126	Habitat Protection and Acquisition Support	ADNR Fries	No report required.		
95126A	Carry-forward: Habitat Protection and Acquisition Support	ADNR Fries	No report required.		
95127	Tatitlek Coho Salmon Release Program	ADFG Kompkoff, Tatitlek IRA	No report required (project was NEPA only).		96127

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report/Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95131	Clam Restoration (Nanwalek, Port Graham, Tatitlek)	ADFG Brown-Schwalenberg, CRRC	Annual report peer reviewed July 1, 1996; not yet at OSPIC.		96131
95137-CLO	Closeout: Prince William Sound Salmon Stock Identification and Monitoring Studies	ADFG Fried	Project is close-out/report writing for 93068 and 94137. See 94137 for status.		93068, 94137
95138	Elders/Youth Conference	ADFG Simeone	Conference proceedings available to public at OSPIC.	Braund, S., et al. Community conference on subsistence and the oil spill: summary report. Oct. 1995.	
95139	Wild Stock Supplementation Workshop	ADFG Hauser	No report required. (Summation memo prepared by Chief Scientist is on file in Anchorage Restoration Office.)		
95139A1	Carry-forward: Salmon Instream Habitat and Stock Restoration -- Little Waterfall Creek Barrier Bypass	ADFG Honnold	Annual report submitted to Chief Scientist June 13, 1996; under peer review.		96139A1
				Construction complete in field November 1995.	
95139A2	Port Dick Spawning Channel	ADFG Dudiak	No report required (project was NEPA only).		
95139B	Closeout: Otter Creek/Shrode Creek Instream Restoration	USFS Olson	Project is close-out/report writing for 94139B1 and 94139B2. See 94139B1 and 94139B2 for status.		94139B1, 94139B2
95139C1	Montague Riparian Rehabilitation	USFS Hodges	Annual report peer reviewed; not yet at OSPIC.		96139C1
95139C2	Carry-forward: Salmon Instream Habitat and Stock Restoration -- Lowe River	ADFG	No report required (project canceled).		

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95163A	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species (interim funding)	NOAA Duffy (NOAA), Willette (ADFG)	NOAA: No report required. Project is funding for planning of integrated APEX/ ecosystem project. ADFG: Project is funding for close-out/report writing for 94163; see 94163 for status of annual report.		
95163A1	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species (APEX)	NOAA Haldorson	Integrated annual report submitted to Chief Scientist June 15, 1996; under peer review. Available to public at OSPIC.		96163
95163B	Foraging of Seabirds (APEX)	DOI Ostrand	See 95163A1.		96163
95163C	Fish Stomach Contents Analysis (APEX)	NOAA Sturdevant	See 95163A1.		96163
95163D	Tufted Puffin Foraging and Reproductive Success (APEX)	DOI Piatt	Draft final report submitted to Chief Scientist January 29, 1997; under peer review. NOTE: Report was to be a chapter of the 95163 integrated report (see 95163A1), but it was not submitted at the time of the integrated report. This is a final report because this component of APEX did not continue past FY 95.		See 96163.
95163E	Reproduction and Foraging of Black-legged Kittiwakes (APEX)	DOI (FWS) Irons	See 95163A1.		96163
95163F	Factors Affecting Recovery of PWS Pigeon Guillemot Populations (interim funding)	DOI (FWS) Hayes	Project is close-out/report writing for 94173. See 94173 for status.		94173
95163F1	Reproduction of Pigeon Guillemots Populations in PWS in Relation to Food (APEX)	DOI Hayes	See 95163A1.		96163

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95163G	Seabird Energetics (APEX)	NOAA Roby	See 95163A1.		96163
95163I	Seabird/Forage Fish Interaction: Program Management and Integration	DOI (FWS) Duffy	See 95163A1.		96163
95163J	Barren Islands Seabird Studies (APEX)	DOI Roseneau	See 95163A1.		96163
95163K	Using Predatory Fish to Sample Forage Fish (APEX)	DOI Roseneau	See 95163A1.		96163
95163L	Historic Review of Ecosystem Structure in PWS/Gulf of Alaska and Abundance/Distribution of Forage Fish in Barren Islands (APEX)	DOI Piatt	See 95163A1.		96163
95165	PWS Herring Genetic Stock Identification	ADFG J. Seeb	Annual report peer reviewed; available to public at OSPIC.		96165
95166	Herring Natal Habitats	ADFG Carpenter, Willette	Annual report peer reviewed June 10, 1996; returned to PI for revision.	Results indicate an improvement in the age structure among the age 3 and 4 herring to suggest the beginnings of recovery. Results are being compared with results of the herring disease study.	96166
95191A	Investigating and Monitoring Oil Related Egg and Alevin Mortalities	ADFG J. Seeb, Bue	Results will be presented in two reports: (1) Field component: Annual report peer reviewed; available to public at OSPIC. (2) Genetics component: Annual report (in form of manuscript) submitted to Chief Scientist October 3, 1996; under peer review.	(1) Bue, B. Injury to pink salmon embryos in Prince William Sound: field monitoring (2) Seeb, J. Laboratory examination of oil-related embryo mortalities that persist in pink salmon populations in Prince William	96191A



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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report/Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA Rice	Results of this project are included in the report being prepared under 95076. See 95076 for status.		96191B
95199-CLO	Institute of Marine Science - Seward Improvements EIS	ADFG Sundberg	No report required.	Phase I (marine) construction completed. Phase II (building) construction bidding process underway. Private financing package assembled. Awaiting bid results and bond sale to proceed to construction, scheduled for May 8, 1996.	
95244	Seal and Sea Otter Cooperative Subsistence Harvest Assistance	ADFG Fall	FY 95 findings included in annual report submitted under 94244. See 94244 for status.		94244, 96244
95255	Kenai River Sockeye Restoration	ADFG L. Seeb, Tarbox	Annual report submitted to Chief Scientist June 14, 1996; under peer review.	Analysis of allozyme and mtDNA data revealed a substantial amount of genetic diversity among populations, suggesting significant local adaptation. Simulations indicated that Kenai River populations can be identified in mixtures. Results are currently being used in management.	96255
95258	Sockeye Salmon Overescapement (Kenai/Kodiak)	ADFG Schmidt	Annual report submitted to Chief Scientist May 13, 1996; under peer review.	Developed model which predicts fall fry production from seasonal copepod abundance. Established a single year shift in density-dependent response because of two-year life history of dominant copepod.	96258

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95259	Restoration of Coghill Lake Sockeye	ADFG Kyle	Revised draft of annual report submitted to Chief Scientist December 11, 1996.	Nutrient enrichment of Coghill Lake shows positive effects on lake productivity. Mean total phosphorus concentration increased by 22% after enrichment; mean chlorophyll concentration (algal biomass) increased by 250%, which improved quality of phytoplankton. Rearing sockeye fry were larger in 1995 compared to previous years. The 1995 smolt outmigration estimate of 1.6 million was the highest recorded since sampling began in 1989.	96259
95266	Experimental Shoreline Oil Removal	ADEC Piper	Final report accepted by Chief Scientist. Approved by OSPIC; copies being made.		
95272	Chenega Chinook Release Program	ADFG Lindley, PWSAC	Annual report peer reviewed; available to public at OSPIC.		96272
95279	Subsistence Restoration Project - Food Safety Testing	ADFG Miraglia	Draft final report peer reviewed; returned to PI for revision November 19, 1996.	The emphasis in 1995 was to establish a system whereby subsistence users could get samples of abnormal resources to biologists and pathologists for study, who would then report findings back to subsistence users. Training sessions were held in 19 spill-impacted communities.	
95285-CLO	Closeout: Subtidal Sediment Recovery Monitoring	NOAA O'Clair	Final report submitted to Chief Scientist May 9, 1996; under peer review.		94285
95290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance for Restoration and NRDA Environmental Samples Associated with the <i>Exxon Valdez</i> Oil Spill	NOAA Short	Results incorporated into report being prepared under ST8. See ST8 for status.		96290

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95320A	Salmon Growth and Mortality	ADFG Willette	Annual report, which integrates results of subprojects A, E, G, H, I(2), J, K, M, N, Q, T, U, and Y submitted to Chief Scientist May 20, 1996; under peer review. NOTE: Separate reports, in addition to the integrated report, were submitted for subprojects A, K, and Q.	Results indicate that predation on juvenile pink salmon by pollack and seabirds is less than had been forecast. This suggests predators may have caused significant mortality to juvenile pinks in nearshore habitats or that the pollack predation rate was underestimated if the feeding behavior or distribution of pollack was different than expected.	Integrated into 96320E in FY 96.
95320B	PWS Pink Salmon Stock Identification and Monitoring (CWT)	ADFG Joyce	Annual report peer reviewed; available to public at OSPIC.	Stock separation was complicated by non-standard marking rates for SEA project releases at AFK and WHN hatcheries. Also high tag loss rate at Cannery Creek hatchery biased results. In-season adjustments were made to compensate for the above mentioned biases. Solomon Gulch, Cannery Creek, wild stocks, WHN, and AFK hatcheries were the highest contributors to the PWS pink salmon return respectively.	96186
95320C	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in PWS	ADFG Joyce	Annual report peer reviewed; available to public at OSPIC.	Otolith thermal marks were applied on 100% of hatchery incubated pink salmon. The marks are distinct and blind tests have indicated that otolith lab personnel can identify hatchery fish from mixtures of hatchery and wild stocks. Preliminary results indicate a successful marking project.	96188
95320D	PWS Pink Salmon Genetics	ADFG J. & L. Seeb	Annual report peer reviewed; returned to PI for revision July 1, 1996. [NOTE: Report also includes results from 94320D.]	Allozyme and mtDNA analyses showed genetic differences between upstream and tidal collections within the same streams and among regions within PWS. These results support managing and restoring pink salmon on a regional basis rather than as a single panmictic population.	96196

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95320E	Juvenile Salmon and Herring Integration	ADFG Willette	See 95320A.	Movement and diet overlap for age zero pink salmon have been studied and compared.	96320
95320G	Phytoplankton and Nutrients	ADFG McRoy & Eslinger, UAF	See 95320A.	First complete data sets for the phytoplankton and nutrient cycles.	96320
95320H	Role of Zooplankton in the PWS Ecosystem	ADFG Cooney, UAF	See 95320A.		96320
95320I	Isotope Tracers - Food Web Dependencies in PWS (Fish, Marine Mammals, and Birds)	ADFG Schell	Annual report peer reviewed; available to public at OSPIC.	Schell, D.M. and A. Hirons. 1996. Isotope ratio studies of marine mammals in PWS. ADF&G, Habitat and Restoration Division, Anchorage, AK. Stable isotope analyses were conducted on a wide suite of samples for this project and associated SEA isotope studies. Preliminary data show geographic gradients in isotope ratios useful in separating Gulf of Alaska from PWS energy sources. These are now being used as biological markers for fishery studies and for estimation of harbor seal feeding habitats.	Continued as 96170.
95320I(2)	Isotope Tracers - Food Webs of Fish	ADFG Kline, UAF	See 95320A.		
95320J	Information Systems and Model Development	ADFG Patrick, PWSSC	See 95320A.		96320

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report/Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95320K	PWSAC: Experimental Fry Release	ADFG Ferren & Lindley, PWSAC	Annual report submitted to Chief Scientist March 20, 1996; under peer review. Available to public at OSPIC.		96320
				The fish were successfully released on schedule.	
95320M	Observational Physical Oceanography in PWS and the Gulf of Alaska	ADFG Vaughan, PWSSC	See 95320A.		96320
95320N	Nearshore Fish	ADFG Thomas, PWSSC	See 95320A.		96320
				Fish are typically light sensitive because of visibility by potential predators. In summer 1995 we noticed a trend in which pollock migrated downward with sunlight, and in fall 1995 we noticed a trend in which herring migrated towards the shore with both sunlight and moonlight. For better acoustic measurement of fish, one should perform herring surveys at night and during a new moon because they will more likely be in the open water, but perform pollock surveys in the day because they are farther from the surface.	
95320Q	Avian Predation on Herring Spawn	USFS Bishop	Draft final report submitted to Chief Scientist December 4, 1996. [NOTE: Some results also included in integrated SEA report.]		96320Q
				Documented avian abundance and distribution in spawn areas. Glaucous-winged gulls were the most numerous herring spawn predator. Analyzed stomach contents of the five most abundant avian species foraging in spawn areas in northern Montague Island. Herring spawn occurred in 100% of glaucous-winged gulls, mew gulls, and surf scoters, and in 75% of surfbirds and 69% of turnstones. Estimate that glaucous-winged gulls, mew gulls, surf scoters, and black turnstones obtained 99- 100% of total daily energy from spawn.	

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95320S	Disease Impacts on PWS Herring Populations (competitive solicitation under State of Alaska two-step, RFQ-RFP process)	ADFG Hauser	Annual report submitted to Chief Scientist April 5, 1996; under peer review. [NOTE: Report addendum on plasm lgm submitted May 3, 1996.]	Focal skin reddening or ulcers were more prevalent in spawning Pacific herring from PWS (2.8%) than from Sitka Sound (1.3%), but less prevalent at both sites than in PWS in 1994 (8.4%). Ichthyophonus prevalence in PWS spawning fish in 1995 (29%) was same as 1994 and same as Sitka Sound in 1995 (26%). VHS virus was not isolated from any spawning fish in PWS or Sitka Sound, but was isolated from 6.2% of prspawning fish from PWS. Lab experiments revealed that both VHS and Ichthyophonus can kill Pacific herring.	96162
95320T	Juvenile Herring Growth and Habitat Partitioning	ADFG Norcross	See 95320A.		96320
95320U	Somatic and Spawning Energetics of Herring/Pollock	ADFG Paul, UAF	See 95320A.		96320
95320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG Scheel, PWSSC	See 95320A. [NOTE: This component of SEA was funded for close-out/report writing only in FY 96.]	Estimate that from 1.1-2.4% of the 241.7 million pink and chum salmon fry released into Lake Bay (Esther Island, PWS) in 1995 were consumed by seabirds in and near Lake and Quilliam Bays in the period April-June 1995. Black-legged kittiwakes and marbled murrelets were the most abundant avian predators on these fry.	96320
95417	Carry-forward: Waste Oil Disposal Facilities	ADEC	No report required (project canceled).		
95422-CLO	Closeout: Restoration Plan EIS/Record of Decision	USFS	No report required.		

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95424	Restoration Reserve	All All	No report required.		
95427	Harlequin Duck Recovery Monitoring	ADFG Rosenberg	Annual report accepted by Chief Scientist; undergoing format review at OSPIC.	Males comprised a significantly greater proportion of the total population in western PWS during the first spring survey. Compared to eastern PWS, in western PWS the ratio of paired to non-paired females was significantly lower, males comprised a significantly greater proportion of the total population during the fall, a greater proportion of flightless females was observed in late July, and the influx of females was delayed. The influx of males was accelerated in eastern PWS. No broods were observed in PWS.	96427
95428-CLO	Closeout: Subsistence Planning Project	ADFG Fall	FY 95 findings included in annual report submitted under 94428. See 94428 for status.		94428
95505B	Data Analysis for Stream Habitat	USFS Olson	Final report available to public at OSPIC. Report also includes findings from 93051 and 94505.	Olson, R.A., 1995. Use of aerial photograph, channel-type interpretations to predict habitat availability in small streams, USDA, Forest Service, Chugach N.F., Anchorage, AK	93051, 94505

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
96001	Recovery of Harbor Seals from EVOS: Condition and Health Status	ADFG	Annual report being drafted.		
96007A	Archaeological Index Site Monitoring	ADNR	Annual report being drafted.		
96007B	Site Specific Archaeological Restoration	USFS	Project is report-writing funds only for 95007B. See 95007B for status.		
96009D	Survey of Octopuses in Intertidal Habitats	USFS	Final report being drafted (report writing funded under 97009D).		
96012A-BAA	Comprehensive Killer Whale Investigation in Prince William Sound, Alaska	NOAA	Annual report being drafted.		
96025	Mechanism of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI	Annual report being drafted.		
96027	Kodiak Archipelago Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC	Project is report-writing funds only for 95027. See 95027 for status.		
96031	Development of a Productivity Index to Monitor the Reproductive Success of Marbled and Kittlitz's Murrelets in Prince William Sound, Alaska	DOI	Project is report-writing funds only for 95031. See 95031 for status.		
96038	Publication of Seabird Restoration Workshop	DOI	Project is write-up funds only for 95038. See 95038 for status.		
96043B	Monitoring of Cutthroat Trout and Dolly Varden Habitat Improvement Structures	USFS	Annual report being drafted.		
96048-BAA	Historical Analysis of Sockeye Salmon Growth Among Populations Affected by Overescapement in 1989	NOAA	Final report being drafted.		
96052	Community Involvement & Use of Traditional Knowledge	ADFG/Miraglia	Annual report being drafted.		Began as 95052.



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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
96064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	ADFG	Annual report being drafted.		
96074	Herring Reproductive Impairment	NOAA	Annual report being drafted.		
96076	Effects of Oiled Incubation Substrate on Straying and Survival of Wild Pink Salmon	NOAA	Annual report being drafted.		
96086	Herring Bay Monitoring and Restoration Studies	ADFG	Project is close-out/report-writing funds only for 95086C. See 95086C for status.		
96090	Mussel Bed Restoration and Monitoring	NOAA	Project is report writing funds only for 95090. See 95090 for status.		
96101	Removal of Introduced Foxes From Islands	DOI	Project is report-writing funds only for 95101. See 95101 for status.		
96106	Subtidal Monitoring: Eelgrass Communities	ADFG	Project is close-out/report-writing funds only for 95106. See 95106 for status.		
96115	Sound Waste Management Plan	ADEC	Project is close-out only for 95115. See 95115 for status.		
96127	Tatitlek Coho Salmon Release	ADFG/Moore	Annual report being drafted.		Began as 95127.
96131	Chugach Native Region Clam Restoration	ADFG/Moore	Annual report being drafted.		
96139A1	Salmon Instream Habitat and Stock Restoration - Little Waterfall Barrier Bypass Improvement	ADFG	Annual report being drafted.		
96139A2	Spawning Channel Construction Project Port Dick Creek, Lower Cook Inlet	ADFG	Annual report being drafted.		
96139C1	Montague Riparian Rehabilitation Monitoring Program	USFS	Final report being drafted (report writing funded under 97139C1).		

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
96142-BAA	Status and Ecology of Kittlitz's Murrelet in Prince William Sound	NOAA	Annual report being drafted.		
96144	Common Murre Population Monitoring	DOI	Annual report being drafted.	Roseneau, D.G., A.B. Kettle, and G.V. Byrd. 1997. Common murre population monitoring. Found no evidence that common murre populations have begun to increase at Nord Island, and no significant change at East Amatuli Light Rock although there was a hint of a positive trend. The only data that demonstrated significant increases were from two plots, one on East Amatuli Light Rock and one on the main island.	93049, 94049, 95/96163J 96163M
96145	Cutthroat Trout and Dolly Varden: the Relation Among and Within Populations of Anadromous and Resident Forms	USFS	Annual report being drafted.		
96149	Archaeological Site Stewardship	ADNR	Annual report being drafted.		
96154	Comprehensive Community Plan for Restoration of Archaeological Resources in PWS and Lower Cook Inlet	USFS	Final report submitted to Restoration Office. Not yet at OSPIC.		
96159	Surveys to Monitor Marine Bird Abundance In Prince William Sound During Winter and Summer 1996	DOI	Final report being drafted (report writing funded under 97159).		
96161	Differentiation and Interchange of Harlequin Duck Populations Within N. Pacific Region	DOI	Annual report being drafted.	Preliminary genetics results available from all areas (inclusive site-specific differentiation incomplete). Birds banded at Katmai (N=39) and Kodiak (N=313).	96025, 96427

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96162	Investigations of Disease Factors Affecting Declines of Pacific Herring Populations in Prince William Sound, AK	ADFG	Annual report being drafted.		
96163	APEX: Apex Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska	NOAA DOI			
96163A	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species	NOAA	Annual report being drafted.		
96163B	Foraging of Seabirds	DOI	See 96163A.		Although walleye pollock made up a large portion of the forage biomass, few seabirds were associated with this species. Black-legged kittiwakes, pigeon guillemots, and marbled murrelets were observed in shallow water near shore. Glaucous-winged gulls and tufted puffins were observed significantly further from shore.
96163C	Fish Diet Overlap Using Fish Stomach Content Analysis	NOAA	See 96163A.		
96163D	Distribution of Forage Fish as Indicated by Puffin Diet Sampling	DOI	Project is report-writing funds only for 95163D.		
96163E	Black-legged Kittiwakes as Indicators of Forage Fish Availability	DOI	See 96163A.		
96163F	Factors Affecting Recovery of Pigeon Guillemot Populations	DOI	See 96163A.		
96163G	Diet Composition, Reproductive Energetics, and Productivity of Seabirds	NOAA	See 96163A.		
96163I	APEX Planning and Project Leader	DOI	See 96163A.		

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96163J	Barren Islands Seabird Studies	DOI	See 96163A.	Roseneau, D.G., A.B. Kettle, and G.V. Byrd. 1997. Barren Islands seabird studies.  At East Amatuli Island, productivity of common murres and black-legged kittiwakes was high and normal, respectively, while productivity of tufted puffins was low. Growth rates of kittiwake chicks was normal, but growth of tufted puffin chicks was very slow. Diets of murre and puffin chicks were similar to those of 1995 and 1996; diets of kittiwake chicks in 1996 contained more sand lance than during the previous two years. Common murre nesting chronology was earlier than in 1995, continuing a trend that started in 1991.	96144 96163M 93/94039
96163K	Using Predatory Fish to Sample Forage Fish	DOI	Project is report-writing funds only for 95163K. See 95163K for status.		
96163L	Historical Review of Ecosystem Structure in the PWS/GOA Complex	DOI	See 96163A.		
96163M	Lower Cook Inlet Study	DOI	See 96163A.		
96163N	Black-legged Kittiwake Feeding Experiment	DOI	See 96163A.		
96163O	Statistical Review	DOI	See 96163A.		
96163P	Sand Lance Hydrocarbon Exposure	NOAA	Draft final report submitted to Chief Scientist January 29, 1997; under peer review. (NOTE: These results will also be included in summary form in the integrated 96163 annual report.)		

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96165	Genetic Discrimination of Prince William Sound Herring Populations	ADFG	Annual report being drafted.		
96166	Herring Natal Habitats	ADFG	Annual report being drafted.		
96170	Isotope Ratio Studies of Marine Mammals in Prince William Sound	ADFG	Annual report being drafted.		
96180	Kenai Habitat Restoration & Recreation Enhancement Project	ADNR	Annual report being drafted.		
96186	Coded Wire Tag Recoveries From Pink Salmon in Prince William Sound	ADFG	Annual report being drafted.		
96188	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in Prince William Sound	ADFG	Annual report being drafted.		
96190	Construction of a Linkage Map for the Pink Salmon Genome	ADFG	Annual report being drafted.		
96191A	Oil-Related Embryo Mortalities in PWS Pink Salmon Populations	ADFG	Annual report being drafted.		
96191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA	Results of this project will be presented in the report being prepared under 96076. See 96076 for status.		
96195	Pristane Monitoring in Mussels and Predators of Juvenile Pink Salmon & Herring	NOAA	Annual report being drafted.		
96196	Genetic Structure of Prince William Sound Pink Salmon	ADFG	Annual report being drafted.		
96210	Prince William Sound Youth Area Watch	ADFG	Annual report submitted to Chief Scientist November 5, 1996; under peer review.		

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96214	Documentary on Subsistence Harbor Seal Hunting in PWS	ADFG	No report required; copy of video will be provided to OSPIC.		
96220	Eastern PWS Wildstock Salmon Habitat Restoration	USFS/Schmid	Annual report being drafted.		
96222	Chenega Bay Salmon Restoration -- Anderson Creek	USFS/Murphy	Project canceled; no report required.		
96225	Port Graham Pink Salmon Subsistence Project	ADFG/Moore	Annual report being drafted.		
96244	Community-Based Harbor Seal Management and Biological Sampling.	ADFG/Fall	Annual report being drafted.		Began as 94244, continued as 95244.
96255	Kenai River Sockeye Salmon Restoration	ADFG	Final report being drafted (report writing funded under 97255).		
96256	Columbia and Solf Lakes Sockeye Salmon Stocking	USFS	Solf Lake: Annual report being drafted. Columbia Lake: Feasibility report submitted to Restoration Office; under review.		
96258A	Sockeye Salmon Overescapement Project	ADFG	Final report being drafted (report writing funded under 97258A).		
96259	Restoration of Coghill Lake Sockeye Salmon	ADFG	Final report being drafted (report writing funded under 97259).		
96272	Chenega Chinook Release Program	ADFG	Annual report being drafted.		
96290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	NOAA	No report required.		

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96291	Chenega-area Shoreline Residual Oiling Reduction	ADEC	Project was funded as a two-year capital activity; final report will be submitted at completion of project.		
96320	Sound Ecosystem Assessment (SEA)	ADFG			
96320E	Salmon and Herring Predation	ADFG	Annual report being drafted.		
96320G	Phytoplankton and Nutrients	ADFG	See 96320E.		
96320H	Zooplankton in the PWS Ecosystem	ADFG	See 96320E.		
96320I	Isotope Tracers - Food Webs of Fish	NOAA	See 96320E.		
96320J	Information Systems and Model Development	NOAA/ADFG	See 96320E.		
96320K	PWSAC: Experimental Fry Release	ADFG	See 96320E.		
96320M	Physical Oceanography in PWS	NOAA/ADFG	See 96320E.		
96320N	Nekton/Plankton Acoustics	NOAA/ADFG	See 96320E.		
96320Q	Avian Predation on Herring Spawn	USFS	Project is report-writing funds only for 95320Q. See 95320Q for status.		
96320R	SEA Trophodynamic Modeling and Validation Through Remote Sensing	ADFG	See 96320E.		
96320T	Juvenile Herring Growth and Habitat Partitioning	ADFG	See 96320E.		
96320U	Energetics of Herring and Pollock	ADFG	See 96320E.		
96320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG	See 96320E.		

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96320Z1	Synthesis and Integration	ADFG	See 96320E.		
96326	Completion of NRDA MM6/Data Re-analysis	DOI	Project is report-writing funds only for MM6. See MM6 for status.		
96427	Harlequin Duck Recovery Monitoring	ADFG	Annual report being drafted.		
96507	EVOS Symposium Publication	NOAA	Project is close-out funds only for 94507. See 94507 for status.		



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97001	Recovery of Harbor Seals From EVOS: Condition and Health Status	M. Castellini/UAF	ADFG	<u>Oct - Dec:</u> UNDERWAY-Analysis and statistical study of all blood samples. DONE-Collection of archived blubber samples. UNDERWAY-Analysis of blubber water content. <u>Jan - March:</u> -Preparation of blubber samples for bomb calorimetry. -Modeling of body morphometrics. -Samples outside of PWS. <u>April - June:</u> -Analysis and statistical study of blood samples. -Collection of field samples outside of PWS. -Collection of field samples inside PWS. -Analysis of all blood samples. <u>July - Sept:</u> -Modeling of body morphometrics and blubber data. -Modeling of body condition indices.
97007A	Archaeological Index Site Monitoring	D. Reger/ADNR	ADNR	<u>April - June:</u> -Finalize arrangements for fieldwork. -Submit charcoal and sediment samples for analysis.
97007B-CLO	Site Specific Archaeological Restoration	L. Yarborough/USFS	USFS	<u>Oct - Dec:</u> UNDERWAY -Prepare manuscript for peer-review professional journals. <u>Jan - March:</u> UNDERWAY -Prepare presentations for Oil Spill communities. -Presentations/discussions in Oil Spill communities. SCHEDULED FOR PRESENTATION 4/6/97 -Prepare paper for SAA.

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97009D-CLO	Survey of Octopuses in Intertidal Habitats	D. Scheel/Prince William Sound Science Center	USFS	<u>Sept - Dec:</u> DONE -Analyses from summer field work. <u>Jan - Mar:</u> UNDERWAY -Preparation of final report. UNDERWAY -Draft manuscripts for submission to professional journals.
97012-BAA	Comprehensive Killer Whale Investigation in Prince William Sound	C. Matkin/North Gulf Oceanic Society	NOAA	<u>Sept - Dec:</u> UNDERWAY -Data analysis. <u>Jan - March:</u> -Convert prey data to geographic information system format. -Begin draft of manuscript on area use. <u>April - June:</u> -Killer whale biopsy emphasis fieldwork. -Analyze correlations with prey. -Analyze winter recordings from remote hydrophone. <u>July - Sept:</u> -Arrange for Restoration and Personal Use licenses from Chenega Corporation. -Analyze previous year's recordings. -Replace hydrophone. -Begin draft of manuscript on geographic distributions of foraging behaviors. -Killer whale monitoring emphasis field work. -Killer whale biopsy emphasis field work. -Presentations and interviews with elders at Chenega, Cordova, and Tatitlek. -Set up receiving stations in Chenega and Port San Juan. -Train volunteers and technicians who will maintain batteries.

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97025	Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators (NVP)	L. Holland-Bartels, et al/NBS-DOI		<u>Sept - Dec:</u> DONE -Sea otter: Aerial survey of western Prince William Sound. DONE -Harlequin: Continue survival monitoring, skiff surveys, and collections of Barrow's goldeneyes. DONE -Project meeting to discuss field season outcomes and develop/revise proposed approach. <u>Jan - March:</u> -Invertebrate predator: Complete sampling of all study sites. -Harlequin: Continue survival monitoring, skiff surveys, and collections of Barrow's goldeneyes. <u>April - June:</u> -Pigeon guillemot: Active nest surveys, blood sampling, prey sampling, and nest monitoring. -Sea otter: Prey selection and foraging success. -River otter: Live trapping for morphometrics and tissue sampling. -Sea otter: Beach-cast carcass survey. -Avian co-predators: Boat surveys, collections, and behavioral observations. <u>July - Sept:</u> -Pigeon guillemot: Active nest surveys, blood sampling, prey sampling, and nest monitoring. -Sea otter: Aerial survey of Prince William Sound, capture for morphometrics and tissue collection. Prey selection and foraging success. -Mussel/clam/urchin/fish/duck food and invertebrate predators: Vessel charter to sample study areas. -Avian co-predators: Boat surveys and behavioral observations. -River otter: Latrine sites located, sampled, and monitored.

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97026-CLO	Report Writing: Integration of Microbial and Chemical Sediment Data	J. Braddock/UAF	ADEC	<u>Oct - Dec:</u> -Funding approved 12/6/96. <u>Jan - March:</u> UNDERWAY -Complete final report. -Prepare manuscript for publication.
97043B	Monitoring of Cutthroat Trout and Dolly Varden Habitat Improvement Structures	D. Gillikin/USFS	USFS	<u>August:</u> -Inspect and measure effects of installed structures. -Conduct population estimates of primary units.

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97052A	Community Involvement	P. Brown/Chugach Regional Resources Commission	Y ADFG	<u>Oct - Dec: (Spill Area-Wide Coordinator)</u> DONE -Prepare subcontracts with communities DONE -Conduct training/orientation for facilitators DELAYED -Send activity report to facilitators twice each month SOME -Receive report from each facilitator at end of each month UNDERWAY -Receive resource inventory from each facilitator UNDERWAY -Compile/distribute resource inventories to PIs Contact PIs who have community involvement component in FY 97 projects to assist in implementation SOME -Attend Trustee Council and RWF meetings <u>Oct - Dec: (ADF&amp;G/Subsistence Division)</u> DONE -Renew cooperative agreement with CRRC <u>Jan - Mar: (Spill Area-Wide Coordinator)</u> Assist/coordinate assistance in preparing project proposals Send activity report to facilitators twice each month Receive report from each facilitator at end of each month Attend Trustee Council and RWF meeting <u>Jan - Mar: (ADF&amp;G/Subsistence Division)</u> Assist communities in preparing project proposals <u>April - June: (Spill Area-Wide Coordinator)</u> Coordinate facilitators' review of FY 98 proposals Recommendations to Exec. Dir. regarding TEK and community involvement in FY 98 proposals Send activity report to facilitators twice each month Receive report from each facilitator at end of each month Attend Trustee Council and RWF meetings <u>July - Sept: (Spill Area-Wide Coordinator)</u> Send activity report to facilitators twice each month Receive report from each facilitator at end of each month Attend Trustee Council and RWF meetings

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97052B	Traditional Ecological Knowledge	P. Brown-Schwalenberg/CRRC	ADFG	<u>Oct - Dec: (ADF&amp;G/Subsistence Division)</u> DONE - Renew cooperative agreement with CRRC <u>Oct - Dec: (CRRC)</u> DONE - Establish TEK Advisory Group DONE (HIRED 2) - Hire TEK Specialist DONE IN JANUARY - TEK Specialist contact PIs who have TEK components in their FY 97 projects regarding implementation <u>Jan - March: (ADF&amp;G/Subsistence Division)</u> Complete preparation of reference guide to existing TEK <u>Jan - March: (CRRC)</u> TEK Specialist contact PIs regarding including TEK in FY 98 proposals <u>April - June: (CRRC)</u> TEK Specialist make recommendations to Executive Director regarding FY 98 proposals

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97064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in PWS	K. Frost/ADFG	ADFG	<u>Oct - Dec:</u> ONGOING -Analysis of fatty acid samples by Dalhousie. UNDERWAY -Analysis of aerial survey data. ONGOING -Analysis of genetic samples by SWFSC. DONE -Analysis of other data, modeling. UNDERWAY Analyze SLTDR data from previous year DONE -Meet with hunters about study results, distribute newsletter. -Meet with SWFSC regarding genetics analyses. <u>Jan - March:</u> -Order SLTDRs for field season. -Coordination meeting with other ADF&G harbor seal projects. -Arrange logistics (boats, airplanes, equipment, contracts, supplies). -Reserve ARGOS satellite channels. <u>April - June:</u> -Catch seals, collect samples; attach SLTDRS as decided. <u>July - Sept:</u> -Analysis of fatty acid samples by Dalhousie. -Conduct aerial surveys during molting. -Attach 6 - 12 SLTDRs, sampling.

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97076	Effects of Oiled Incubation Substrate on Straying and Survival of Wild Pink Salmon	A. Wertheimer/NOAA	NOAA	<u>Oct - March:</u> UNDERWAY -Complete contractual arrangements for labor, vessel support, fishery, and weir sampling. <u>April - June:</u> -Plumb, configure incubation matrix for breeding experiment progeny. <u>July - Sept:</u> -Set up weir, adult holding facility at LPW. -Evaluate survival in incubators to fry emigration. -Adult recovery operations at weired and unweired streams. -Collect and spawn pink salmon from P-1 and F-1 returns to LPW.
97090-CLO	Mussel Bed Restoration and Monitoring	M. Babcock/NOAA	NOAA	<u>Oct - Dec:</u> DELAYED; WRITING UNDERWAY -Submission of histopathology paper to journal. DONE -Presentation of Mussel Bed Restoration at the International Conference on Shellfish Restoration. DELAYED; WRITING UNDERWAY -Submission of survey paper to journal. DELAYED -Submission of restoration paper to journal.
97100	Administration, Science Management, and Public Information	All Trustee Council Agencies	ALL	ONGOING



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97115	Implementation of the Sound Waste Management Plan: Environmental Operations and Used Oil Management System	J. Winchester/Prince William Sound Economic Development Council	ADEC	<u>Oct - Dec:</u> DONE -Select designer for EVOS stations. UNDERWAY -Complete EVOS station designs. <u>Jan - March:</u> Develop bid documents for construction and acquisition of used oil management equipment. Solicit bids. <u>April - June:</u> Bid opening and contract award. <u>July - Sept:</u> Construction of EVOS stations and purchase of used oil equipment.
97126	Habitat Protection and Acquisition Support	C. Fries/ADNR, D. Gibbons/USFS	ADNR	<u>Oct - Dec:</u> Work proceeding on Chenega, Tatitlek, Eyak, and numerous small parcels.
97127	Tatitlek Coho Salmon Release	G. Kompkoff/Tatitlek IRA Council	ADFG	<u>April - June:</u> -Smolt transported to Boulder Bay and placed in net pens. -Smolt released into Boulder Bay <u>July - Sept:</u> -Egg take.
97131	Chugach Native Region Clam Restoration	D. Daisy/Chugach Regional Resources Commission	ADFG	<u>Sept - Dec:</u> DONE -Continue to collect broodstock. DONE -Transport to hatchery. PLUS research underway to explain why clam larvae die prior to setting. <u>Jan - Mar:</u> -Transfer 5 mm seed to hatchery nursery and FLUPSY.

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97139A1	Salmon Instream Habitat and Stock Restoration - Little Waterfall Barrier Bypass Improvement	S. Honnold/ADFG	ADFG	<u>Oct - Dec:</u> TERMINATED DUE TO HIGH WATER - Spawner abundance and distribution surveys DONE -Data summary. <u>Jan - March:</u> -Egg-to-fry survival sampling. <u>July - Sept:</u> -Juvenile coho abundance sampling. -Spawner abundance and distribution surveys.
97139A2	Port Dick Creek Tributary and Development	N. Dudiak/ADFG	ADFG	<u>Oct - Dec:</u> DONE -Monitor and measure the extent of colonization by pink and chum salmon, hydrologic parameters (water level, water temperature, stream velocity, and salinity) and proposed sedimentologic stability parameters (bedload transport, accumulated sediments, and gravel/cobble transport rates). <u>April - June:</u> -Prepare field equipment and arrange logistics. -Enumerate pink and chum salmon fry emergence. <u>July - Sept:</u> -Monitor pink and chum salmon return and colonization. -Supplement colonization if natural colonization is not adequate.
97139C1-CLO	Montague Riparian Rehabilitation Monitoring	D. Schmid/USFS	USFS	<u>April - June:</u> -Arrange logistics, hire personnel. -Examine structures. -Measure channel changes. -Collect growth data. <u>July - Sept:</u> -Analyze data. -Write final report.

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97142-BAA	Status and Ecology of Kittlitz's Murrelets in Prince William Sound.	R. Day/ABR, Inc.	NOAA	<u>Jan - March:</u> UNDERWAY -Arrange logistics (boats, equipment, etc.). <u>April - June:</u> -Conduct early-summer cruise. <u>July - Sept:</u> -Conduct late-summer cruise. -Analyze isotope ratios and stomach contents. -Key punch data and OA/OC. -Digitize, measure, and QA/QC geographic data.
97144	Common Murre Population Monitoring	D. Roseneau/DOI-FWS	DOI	<u>Oct - Dec:</u> DONE -Analyze data. DELAYED UNTIL MID-FEBRUARY-Arrange for vessel contract. DONE -Begin coordinating logistics with APEX project 96163J. <u>Jan - March:</u> -Arrange for hiring of seasonal employee. -Check/repair equipment and other gear. <u>April - June:</u> -Finalize vessel contract. -Check and update census plot booklets for the colonies. -Purchase supplies. <u>July - Sept:</u> -Collect data in Barren Islands. -Enter data.

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97145	Cutthroat Trout and Dolly Varden: Relation Among and Within Populations of Anadromous and Resident Forms	G. Reeves/USFS, Pacific Northwest Research Station	USFS	<u>Oct - Dec:</u> DONE -Renew cooperative agreement with OSU. DONE -Evaluate FY96 collections and make appropriate changes in collection sites. DONE -Conduct genetic and meristic analysis of Dolly Varden. DONE -Begin otolith microchemistry analysis. <u>Jan - March:</u> UNDERWAY -Complete genetic screening. UNDERWAY -Assemble required field gear. <u>April - June:</u> -Collect samples of anadromous cutthroat trout. -Genetic, meristic, and otolith microchemistry analysis. <u>July - Sept:</u> -Collect samples of resident cutthroat trout and Dolly Varden. -Collect samples of anadromous Dolly Varden at field sites. -Continue genetic and meristic analysis.
97149	Archaeological Site Stewardship	D. Reger/ADNR	ADNR	<u>Jan - March:</u> UNDERWAY -Compile steward reports, process film. <u>April - June:</u> -Complete review of site selection from FY96. -New site selection. -Review and training of stewards. -Complete site visits. <u>July - Sept:</u> -Complete steward monitoring of sites for season.

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97159-CLO	Surveys to Monitor Marine Bird Abundance in Prince William Sound During Winter and Summer: Report and Publication Writing	B. Agler/DOI-FWS	DOI	<p>NO STATUS REPORT RECEIVED....</p> <p><u>Sept - Dec:</u></p> <ul style="list-style-type: none"> <li>-Follow up on murrelet paper.</li> <li>-Follow up on sea otter paper.</li> <li>-Prepare draft report of 1996 surveys.</li> </ul> <p><u>Jan - March:</u></p> <ul style="list-style-type: none"> <li>-Attend Pacific Seabird Group Meeting, present one paper.</li> <li>-Attend Annual Restoration Workshop.</li> <li>-Submit long-term trends paper to a journal.</li> <li>-Submit paper on comparison of marine bird populations among three areas to journal.</li> </ul> <p><u>April - June:</u></p> <ul style="list-style-type: none"> <li>-Final Report complete.</li> </ul> <p><u>July - Sept:</u></p> <ul style="list-style-type: none"> <li>-Submit trends since the oil spill paper.</li> </ul>
97161	Differentiation and Interchange of Harlequin Duck Populations Within the North Pacific	B. Goatcher/Katmai National Park	DOI	<p><u>Oct - Dec:</u></p> <p>UNDERWAY -Laboratory analysis/report.</p> <p>DONE -Band re-sightings and recoveries at Kodiak National Wildlife Refuge and Katmai National Park</p> <p><u>April - June:</u></p> <ul style="list-style-type: none"> <li>-Procure equipment and supplies.</li> <li>-Refine GIS database.</li> <li>-Rebuild capture pens.</li> </ul> <p><u>July - Sept:</u></p> <ul style="list-style-type: none"> <li>-Harlequin duck capture.</li> <li>-Genetic sample collection and banding.</li> </ul>

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97162	Investigations of Disease Factors Affecting Declines of Pacific Herring Populations in Prince William Sound	G. Marty/UC Davis; R. Kocan/Univ. Wash., C. Kennedy & A. Farrell, Simon Fraser Univ.	ADFG	<p><u>Oct - Dec:</u>            DONE IN PWS ONLY; UNABLE TO LOCATE FISH IN SITKA SOUND - Collect fish samples.            DONE-Scale analysis (age).            -Evaluate fitness criteria in herring under varying densities without stressors.            DONE - Stress studies on 0-year and 2-year herring            DONE - Data analysis for disease challenge of oil-exposed juveniles with <i>Vibrio anguillarum</i>; measurement and data analysis of immunological parameters            UNDERWAY - Differential white blood cell counts and plasma chemistries for fall field samples</p> <p><u>Jan - March:</u>            DONE; ALL SAMPLES WERE NEGATIVE FOR VIRUS AND SIGNIFICANT BACTERIA -Virology and bacteriology.            -IgM assay.            -Histopathology and identification of <i>Ortholinea orientalis</i>.            -VEN analysis and leukocyte differential counts.</p> <p><u>April - June:</u>            -Statistical analysis.            -Collect spring samples.            -Scale analysis (age).            -Plasma chemistries.            -Virology and bacteriology.            -VEN analysis, leukocyte differential counts, and CPK isozyme analysis.            -IgM assay.            -Histopathology and identification of <i>Ortholinea orientalis</i>.            -Begin reproductive tests.            -Analysis of single stressor data.            -Stress infected SPF herring with increased densities.</p> <p><u>July - Sept:</u>            Evaluate temperature modulation of fitness criteria.</p>

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97163	APEX: Alaska Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska	D. Duffy, et al/UAA	NOAA	<u>Oct - May:</u> UNDERWAY - Data analysis. <u>Jan - Mar:</u> - Prepare for Restoration Workshop, APEX review, annual report, DPD submissions <u>April - June:</u> - Arrange for summer vessels <u>July - Sept:</u> -Acoustic sampling in PWS and Lower Cook Inlet. - Other field activities.
97165	Genetic Discrimination of Prince William Sound Herring Populations	J. Seeb/ADFG	ADFG	<u>Oct - Dec:</u> DONE -Evaluate 95165 contract results. DONE -Award contract for FY96 samples. DONE -Tissue sampling and archiving. <u>Jan - March:</u> -Evaluate final FY95 lab results. -Plan for 1997 sampling if needed. -Initiate technology transfer. <u>April - June:</u> -Collection of samples if needed. -Complete technology transfer. <u>July - Sept:</u> -Conclude laboratory analysis of remaining FY96 and FY97 samples.

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97166	Herring Natal Habitats	M. Willette/ADFG	ADFG	<u>Jan - March:</u> DONE - 1996 biomass estimates - Dept. Forecast and Stock Assessment Reports. <u>April - June:</u> -BEFORE ONSET OF SPAWNING: ---Conduct acoustic survey (20 d). ---Collect AWL, fecundity, disease, genetic stock ID, and bioenergetics samples. -AFTER ONSET OF SPAWNING: ---Initiate dive surveys. ---Complete dive surveys. ---Begin lab processing of diver calibration and fecundity samples. ---Complete calibration sample processing samples. <u>July - Sept:</u> -Finalize estimate of spawning biomass.
97167-BAA	Preparation and Curation of Seabirds Salvaged from the <i>Exxon Valdez</i> Spill	S. Rohwer/University of Washington Burke Museum	NOAA	<u>Oct - Dec:</u> UNDERWAY -Complete all specimen preparation. UNDERWAY - Catalog all specimens and install them in the collection.



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97169	A Genetic Study to Aid in Restoration of Murres, Guillemots, and Murrelets to the Gulf of Alaska	V. Friesen/Queen's University, J. Piatt/DOI-FWS	DOI	<u>Oct - Dec:</u> UNDERWAY -Develop amplification primers and protocols for first three new loci. UNDERWAY -Screen available samples from murres and guillemots for five loci previously developed in VLF's lab. <u>Jan - March:</u> -Develop protocols for three new genes. -Screen available samples from murres and guillemots for five more loci. -Arrange logistics for sample collections. <u>April - June:</u> -Develop protocols for three new genes. -Screen available samples from murres and guillemots for five more loci. -Blood, feather and tissue samples collected from sites in Alaska. <u>July - Sept:</u> -Attend conferences. -Develop protocols for final four new genes. -Screen available samples from murres and guillemots for five more loci.
97170	Isotope Ratio Studies of Marine Mammals in Prince William Sound	D. Schell/UAF Institute of Marine Science	ADFG	<u>Oct - Dec:</u> UNDERWAY -Prepare and analyze isotope ratio samples collected in 1994-1996. UNDERWAY -Collect vibrissae from isotopically labeled seals and sea lions. <u>Jan - March:</u> -Synthesis and coordination for sampling in 1997. <u>April - June:</u> -Field work and sampling. -Captive animal experiments. <u>July - Sept:</u> -Analysis of samples. -Data synthesis, identification of gaps. -Manuscript preparation.

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97180	Kenai Habitat Restoration & Recreation Enhancement	M. Rutherford/ADNR, M. Kuwada/ADFG	ADNR	<p><u>Oct - Dec:</u>            DONE -Solicit nominations for second round of projects.</p> <p><u>Jan - March:</u>            -Review nominations and site assessments.            -Conduct evaluations with the IDT for second round nominations and EVOS parcels.            -Agency coordination on cooperative agreements.            -Prepare environmental compliance documents.            -Conduct public review process.            -Review detailed design plans.            -Design and produce educational materials and signs.            -Establish cooperative agreements with public landowners for second round and EVOS projects.</p> <p><u>April - June:</u>            -Management and oversight of project construction.            -Put up signs and information displays.            -Establish monitoring plots.</p> <p><u>July - Sept:</u>            -Inspect all project sites to check for compliance with design parameters.            -Monitor revegetation sites.            -Monitor public use of completed project and proposed sites for next year.</p>

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97186	Coded Wire Tag Recoveries From Pink Salmon in Prince William Sound	T. Joyce/ADFG	ADFG	<u>Oct - June:</u> UNDERWAY-Hire personnel and order supplies UNDERWAY- Create and test computer programs and spreadsheets DONE - Data analysis UNDERWAY - Report writing <u>June:</u> -Apply tags to pink salmon fry at hatcheries <u>July - Sept:</u> -Scan catches -Recover tagged fish in harvests and brood stocks -Recover/decode tags -Provide in-season catch composition estimates by time and area
97188	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon In Prince William Sound	T. Joyce/ADFG	ADFG	<u>Oct - Dec:</u> DONE -Apply thermal marks to FY96 embryos at four pink salmon hatcheries <u>Jan - March:</u> 3-WEEK POST MARK COLLECTED AND EXAMINED -Collect samples from incubators to evaluate thermal mark quality <u>April - June:</u> -Process and evaluate otoliths <u>July - Sept:</u> -Collect otoliths, process otoliths, analyze data, make recommendations
97190	Construction of a Linkage Map for the Pink Salmon Genome	F. Allendorf/Univ. Montana	ADFG	<u>Oct - Dec:</u> UNDERWAY -Screening of DNA polymorphisms in 1996 brood-year parents and progeny to confirm haploid families. <u>Jan - Sept:</u> -Screen DNA polymorphisms to test for Mendelian inheritance and joint segregation in 1996 brood-year progeny.

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97191A	Field Examination of Oil-Related Embryo Mortalities that Persist in Pink Salmon Populations in PWS	M. Willette/ADFG J. Seeb/ADFG	ADFG	<u>Oct - Dec:</u> DONE -Embryo deposition sampling. DONE -Analysis of brood year 1995 embryo data. -Finish mtDNA analysis of 1995 collections. <u>Jan - March:</u> -Allozyme lab analyze 1996 collections. -Statistically analyze 1995 collections. <u>April - June:</u> -mtDNA analysis of 1996 collections. -Final report of FY96 results. -Allozyme lab analyze experimental matings. <u>July - Sept:</u> -Statistically analyze 1996 collections and 1995 matings. -Field collections of 1997 samples.
97194	Pink Salmon Spawning Habitat Recovery	M. Murphy/NOAA	NOAA	<u>Oct - Dec:</u> DONE -Prioritize samples for fast screening and GCMS analysis. <u>Jan - March:</u> UNDERWAY -Analyze samples for hydrocarbons. <u>April - June:</u> UNDERWAY - Data entry and statistical analysis. <u>July - Sept:</u> -Write final report on hydrocarbon concentrations.

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97195	Pristane Monitoring in Mussels	J. Short/NOAA	NOAA	<u>Oct - Dec:</u> UNDERWAY -Analyze 1996 hydrocarbon data. UNDERWAY -Revise brochure. <u>Jan - March:</u> -Plan logistics for FY97 field season. -Prepare report for public and high schools (94, 95 & 96 data). <u>April - June:</u> -Collect mussel samples. <u>July - Sept:</u> -Analyze samples for pristane and collect mussel samples.
97196	Genetic Structure of Prince William Sound Pink Salmon	J. Seeb/ADFG	ADFG	<u>Oct - Dec:</u> WAITING FOR WDFW TO RECONFIRM ALLELE MOBILITIES PRIOR TO GIVING THEM TO ADF&G -Acquire data from WDFW on 1995 collections. DONE -Finish mtDNA analysis of 1995 collections. <u>Jan - March:</u> DONE -Allozyme lab analyze 1995 collections. UNDERWAY -Statistically analyze 1995 mtDNA collections. <u>April - June:</u> -mtDNA analysis of 1995 collections. -Final report of FY96 results. UNDERWAY -Allozyme lab analyze experimental matings. -Statistically analyze 1996 collections and 1995 matings. -Field collections of 1997 samples.

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97197	Alaska SeaLife Center Fish Pass	J. Seeb/ADFG	ADFG	<u>Oct - Dec:</u> UNDERWAY -Write amendment to the existing cooperative agreement with the City of Seward. UNDERWAY -Apply for appropriate permits. UNDERWAY; EXPECT EA COMPLETION 2/28/97 - NEPA compliance. <u>Jan - March:</u> UNDERWAY -Review conceptual design of fish pass and research pool and -produce construction drawings. <u>April - June:</u> -Construct fish pass and research pool. <u>July - Sept:</u> -Write final report on construction and installation.
97210	Youth Area Watch	R. Sampson/Chugach School District	ADFG	<u>Oct - Dec:</u> DONE -Students selected for participation. DONE -Site teachers receive project training. DONE -Students receive protocol training. DONE -Sites selected for research and monitoring. <u>Jan - March:</u> -Students send information to PIs. <u>April - June:</u> -Students analyze data from projects. -Students conduct escapement counts. -Students visit Alaska SeaLife Center. -Students complete research reports for FY97. <u>July - Sept:</u> -Submission of Youth Area Watch to peer-review journal.

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97214-CLO	Documentary on Subsistence Harbor Seal Hunting in PWS	B. Simeone/ADFG	ADFG	<u>Oct - Dec:</u> UNDERWAY; 90% COMPLETE -Complete editing of draft documentary. -Community review of video (in Tatitlek). -Complete final editing. <u>Jan - March:</u> -Public screening of documentary in Tatitlek (first) and Anchorage. -Completion and distribution of documents. <u>April - June:</u> -Submission of project final report.
97220	Eastern PWS Wildstock Salmon Habitat Restoration	D. Schmid/USFS	USFS	<u>Oct - March:</u> DONE -Compile and review existing information. UNDERWAY (1 HIRED) -Recruit student interns. <u>April - June:</u> -Arrange logistics. -Install restoration log structures on Eyak Native lands. <u>July - Sept:</u> -Analysis of field data.

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97223-BAA	Analysis, Integration and Publication of Pre- and Post-Spill Data on Sea Otter Reproduction, Survival, Development, and Health	L. Rotterman and C. Monnett/Enhydra Research	NOAA	<u>November 15:</u> DELAYED BECAUSE CONTRACT NOT PREPARED UNTIL DECEMBER -Submit for publication: Health, development, and survival of sea otter pups and weanlings in Prince William Sound after the T/V <i>Exxon Valdez</i> oil spill. <u>January 15:</u> DELAYED BECAUSE CONTRACT NOT PREPARED UNTIL DECEMBER -Submit for publication: Length-mass relationships in sea otters in Prince William Sound after the T/V <i>Exxon Valdez</i> oil spill. <u>March 15:</u> -Submit survival and reproduction of female sea otters in Prince William Sound, AK after the T/V <i>Exxon Valdez</i> oil spill. <u>May 15:</u> -Submit age-specific reproduction of female sea otters in Prince William Sound, AK.
97225	Port Graham Pink Salmon Subsistence Project	E. Anahonak, Port Graham IRA Council	ADFG	<u>Oct. - Dec.:</u> DONE (1.65 MILLION EGGS TO EYED STAGE; 1.42 MILLION EGGS INCUBATED WITH 86% SURVIVAL RATE) - 1.5 million eggs incubated UNDERWAY (OXYGEN PRODUCTION SYSTEM UPGRADED; WILL INSTALL SALTWATER PUMP IN SPRING) - Maintenance and upgrade at hatchery <u>April - June:</u> -250,000 pink salmon fry from the Port Graham hatchery placed in net pens and reared to an average weight of 8 grams. -2 million fry will be reared to an average weight of one gram. <u>July - Sept:</u> -Monitor pink salmon escapement into Port Graham. -Capture hatchery broodstock. -Egg take.



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97230	Valdez Duck Flats Restoration Project	J. Winchester/PWS Economic Development Council	ADNR	<u>Oct - Dec:</u> UNDERWAY - Prepare contract between ADNR and PWSEDC. <u>Jan - April:</u> - Acquire and review relevant environmental data. - Meet with Committee to assess community needs. - Develop alternatives for assessing Duck Flat. - Hold preliminary meeting with regulatory agencies to identify concerns. - Develop a conceptual plan that evaluates alternatives. - Identify a recommended plan and present to Valdez City council and community. - Refine alternatives as necessary and complete final draft of conceptual plan.
97231	Marbled Murrelet Productivity Relative to Forage Fish Availability and Environmental Parameters	K. Kuletz/FWS	DOI	<u>Oct - Dec:</u> UNDERWAY - Prepare data from 1994 and 1995 surveys and GIS coverages. THREE DONE; 2 OTHERS UNDERWAY - Rewrite and submit manuscripts submitted to journals. DONE - Present paper at International Symposium on Forage Fish. <u>Jan - March:</u> <u>April - June:</u> - Conduct baseline surveys at study sites. <u>July - Sept:</u> - Enter data, prepare for late-summer surveys, APEX work. - Juvenile surveys. - Analysis of field data.

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97244	Community-Based Harbor Seal Management and Biological Sampling	M. Reidel/Alaska Native Harbor Seal Commission	ADFG	<u>Oct - Dec:</u> DONE -Update contracts with the Alaska Native Harbor Seal commission and the Unviversity of Alaska. DONE -Hire technicians. DONE -Hold regional training session for biological sampling in Kodiak. DONE -Train new community technician in Valdez. DONE -Begin biological sample collection. <u>Jan - March:</u> -Produce and distribute first proceedings report. -Two-day Workshop (Alaska Native Harbor Seal Commission): Demonstrate Traditional Knowledge Database. <u>April - June:</u> -Finalize harvest location site data base maps. <u>July - Sept:</u> -Evaluate second year of program.

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97247	Kametolook River Coho Salmon Subsistence Project	J. McCullough & L. Scarborough/ADFG	Y ADFG	<u>Monthly:</u> -Record temperatures. -Photograph area. <u>Oct - Dec:</u> DONE - Habitat survey DONE - Trap juvenile cohos DONE - Collect adult coho for tissue samples DONE - Talk with highschool students; involve them in field efforts <u>Jan - March:</u> -Meet with village council to discuss the project. -Revise Fish Transport Permit to allow for release of fry into the landlocked lakes or adjacent rivers. -Review meeting in Anchorage with assessment team to evaluate project. -Write EA. <u>April - June:</u> -Release fry from aquarium into landlocked lakes. -Release fry from stream side incubation box into stocking site. -Install large capacity incubation boxes. -Sample river and lake habitats for salmon and trout abundance, age and growth. <u>July - Sept:</u> -Perryville assistants work in Kodiak for two weeks with Pillar Creek Hatchery.
97250	Project Management	All Trustee Council Agencies	ALL	ONGOING
97251-CLO	Akalura Lake Sockeye Salmon Restoration	C. Swanton/ADFG	ADFG	<u>Oct- Dec:</u> UNDERWAY: Plan for FY 97 field studies. <u>April - June:</u> -Monitor sockeye smolt outmigration. <u>July - Sept:</u> -Monitor adult sockeye salmon escapement.

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97255-CLO	Kenai River Sockeye Salmon Restoration	L. Seeb, J. Seeb, K. Tarbox/ADFG	ADFG	<u>Oct - Dec:</u> DONE -Complete laboratory analyses of allozyme and DNA samples from 1996. <u>Jan - March:</u> -Statistical analyses of mixtures. -Refinement of technique. -Archiving of tissues and data. <u>April 15:</u> -Draft final report for FY96.
97256B	Sockeye Salmon Stocking at Solf Lake	D. Gillikin/USFS	USFS	<u>Oct - Dec:</u> UNDERWAY -Determine appropriate brood stock and potential stocking levels. UNDERWAY -Coordinate with PWSAC and the PWSRPT for production planning. DONE -Complete laboratory analysis of water chemistry and plankton data. <u>Jan - March:</u> UNDERWAY -Prepare for field season. DONE -Complete necessary NEPA. <u>April - June:</u> -Install irrigation-type control structure at fishway outlet. -Survey old fishway stream channel and new dam site at other outlet. -Obtain eggs for hatchery incubation.
97258A-CLO	Sockeye Salmon Overescapement Project	D. Schmidt/ADFG	ADFG	<u>February 1:</u> -Submit peer manuscript. <u>April 15:</u> -Complete draft final report for Kodiak Island. <u>July 15:</u> -Complete draft final report Kenai Peninsula.

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97259-CLO	Restoration of Coghill Lake Sockeye Salmon	G. Kyle/ADFG	ADFG	<u>Oct - Jan:</u> UNDERWAY -Process and analyze limnological (water and zooplankton) and smolt samples. <u>April 15:</u> -Complete and submit final report.
97263	Assessment, Protection and Enhancement of Salmon Streams on Port Graham Corporation Lands	W. Meganack, Jr./Port Graham Corporation	ADFG	PROJECT DELAYED UNTIL CONTRACT NEGOTIATIONS, CURRENTLY UNDERWAY BETWEEN ADF&G, PORT GRAHAM CORPORATION, AND KENAI E.D.D., ARE COMPLETE. <u>Oct - Dec:</u> -Assemble information, maps and photo data. -Coordinate project with ADF&G. -Coordinate with fisheries scientist. <u>Jan - March:</u> -Develop final survey plan. -Hire personnel. -Develop maps, photos and data. -Consult with users. <u>April - June:</u> -Train field crews. <u>July - Sept:</u> -Conduct habitat surveys in Port Graham, Rocky and Windy Bay.

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97272-CLO	Chenega Chinook Release Program	J. Milton/Prince William Sound Aquaculture Corporation	ADFG	<u>Oct - March:</u> UNDERWAY -Smolt rearing (brood year 95). UNDERWAY - Incubate eggs. <u>April - June:</u> -Outmigration of brood year 96 fry. -Install netpen at Crab Bay. -Feed and imprint smolts. -Dismantle and remove netpen. <u>July - Sept:</u> -Take chinook eggs for incubation. -Final reporting.
97286	Elders/Youth Conference on Subsistence and the Oil Spill	B. Henrichs/Native Village of Eyak	DOI	NO STATUS REPORT RECEIVED.... <u>Oct - Dec:</u> -Develop PL-638 cooperative agreement. <u>Jan - Sept:</u> -Conference planning.
97290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	B. Nelson/NOAA	NOAA	<u>Ongoing:</u> -Store samples. -Analyze data.

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97300	<b>Synthesis of the Scientific Findings from the Exxon Valdez Oil Spill Restoration Program</b>	R. Spies/Applied Marine Sciences	<u>Y</u> ADNR	<u>Oct - Dec:</u> DONE - Provide moderate-length synthesis outlines to the Executive Director. DONE -Outlines distributed to Principal Investigators. UNDERWAY -Written accounts due from Principal Investigators. <u>Jan - March:</u> -Scientific editing complete on content of written accounts; distribute to Principal Investigators. -Modeling workshop to be held in Anchorage. -Principal Investigators to provide any further comments on edited contributions. -Outline of modeling effort for FY98 provided to Executive Director.
97302	Prince William Sound Cutthroat Trout, Dolly Varden Char Inventory	K. Hodges/USFS	USFS	<u>Oct - Dec:</u> DONE -Contact ADF&G, Native groups, anglers for information on cutthroat trout and Dolly Varden char locations. DONE -Use aerial photographs, maps, channel-type information to predict which streams may have documented populations. <u>Jan - March:</u> DONE -Arrange logistics, hire crews. <u>April - June:</u> -Begin surveys. <u>July - Sept:</u> -Complete surveys. -Compile results and write report.

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97304	Kodiak Island Borough Master Waste Management Plan	J. Selby/Kodiak Island Borough	ADEC	<u>Oct - Dec:</u> UNDERWAY -Establish Waste Management Committee DONE -Write RFP. UNDERWAY; ANTICIPATE FEBRUARY -Award contract. <u>Jan - March:</u> -First Committee meeting. <u>July - Sept:</u> -Identify and prioritize the major sources of marine pollution and solid waste. -Establish a public participation program. -Develop waste management recycling and disposal alternatives.
97306	Ecology and Demographics of Pacific Sand Lance in Lower Cook Inlet	J. Platt/DOI-NBS	DOI	<u>Oct - March:</u> UNDERWAY -Consolidate all information collected in 1995 and 1996 into electronic format. UNDERWAY -Establish areas where information on sandlance distribution and abundance is weak.
97320	Sound Ecosystem Assessment (SEA)	T. Cooney, et al.	ADFG	<u>Oct - Dec:</u> OCEAN STATE, NPZ, AND NEKTON MODELS ALL UPDATED WITH FY 96 DATA-Continue ongoing modeling and data analysis. HERRING FIELD WORK INITIATED FOR OVERWINTERING OBSERVATION-Continue herring program field work. INITIAL PLANS MADE FOR HERRING AND OCEANOGRAPHIC CRUISES IN THE SPRING -Refine remaining FY97 field plans. <u>March - Sept:</u> -Continue salmon and oceanographic field work. -Continue ongoing modeling and data analysis.
97424	Restoration Reserve	All Trustee Council Agencies	ALL	ONGOING



**Exxon Valdez Oil Spill Project Status Summary**  
**1997 Work Plan**  
**Quarter Ending December 31, 1996**

<u>Proj.No.</u>	<u>Project Title</u>	<u>Proposer</u>	<u>Lead Agenc Y</u>	<u>Project Tasks to be Completed this Quarter</u>
97427	Harlequin Duck Recovery Monitoring	D. Rosenberg/ADFG	ADFG	<u>Oct - Dec:</u> UNDERWAY - Data entry and analysis UNDERWAY - TEK investigation <u>Jan - March:</u> -Arrange for permits. -Plan logistics for winter surveys. -Contract for fuel transport. Conduct winter surveys in PWS. <u>April - June:</u> -Hire technicians. -Arrange field logistics for field camps. -Prepare field equipment. -Begin spring surveys. <u>July - Sept:</u> -End fall surveys.

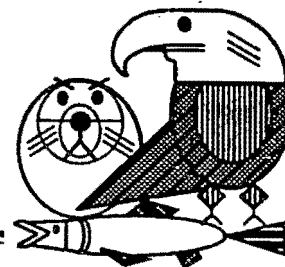
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# Exxon Valdez Oil Spill Trustee Council

## Restoration Office

645 G Street, Suite 401, Anchorage, Alaska 99501-3451

Phone: (907) 278-8012 Fax: (907) 276-7178



### MEMORANDUM

TO: Trustee Council Members

FROM: Sandra Schubert *Schubert*  
Project Coordinator

THROUGH: Molly McGannon *McGannon*  
Executive Director

DATE: November 4, 1996

RE: Quarterly Project Status Summary -- September 30, 1996

RECEIVED  
NOV 03 1996

EXXON VALDEZ OIL SPILL  
TRUSTEE COUNCIL  
ADMINISTRATIVE RECORD

Attached is the *Exxon Valdez* Oil Spill Project Status Summary for the quarter ending September 30, 1996, for all projects funded by the Trustee Council during 1992, 1993, 1994, 1995, and 1996. The Summary focuses on the status of annual and final reports, and includes progress updates for FY 96 projects.

As of September 30, 1996, a total of 134 project reports had been peer reviewed and accepted by the Chief Scientist. Once accepted by the Chief Scientist, reports are submitted to the Oil Spill Public Information Center (OSPIC) where they are reviewed for proper technical formatting, and then made available to the public. As of September 30, 1996, 122 reports were available to the public through OSPIC and other libraries around the state. (See **Attachment C** for a list of libraries, and a list of reports available). An additional four reports were undergoing formatting review at OSPIC.

This memorandum summarizes the status of reports for each project year. **Attachment A** summarizes the status of 1992, 1993, 1994 and 1995 reports by agency. **Attachment B** lists the reports that are significantly behind schedule. Reports are considered significantly behind schedule if (1) they have not yet been submitted to the Chief Scientist or were reviewed by the Chief Scientist, returned to the PI for revision longer ago than six months, and have not been revised and resubmitted to the Chief Scientist and (2) an extended due date has not been approved by the Restoration Office. Per your direction, principal investigators on FY 97 projects who have a late report from a prior year will not be authorized to expend FY 97 funds until their late report is submitted.

### **Status of 1992 Project Reports as of September 30, 1996**

A total of 60 projects were funded in the 1992 Work Plan. With very few exceptions, a final report -- that is, a report that is subject to peer review and approval by the Chief Scientist -- is required on each 1992 project. Some projects require more than one report. (NOTE: Reports "in progress" are in peer review, are under revision by the PI in response to peer reviewer comments, or have been revised and are undergoing a second review by the Chief Scientist.)

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
59	64	9	2

### **Status of 1993 Project Reports as of September 30, 1996**

A total of 37 projects were funded in the 1993 Work Plan. With some exceptions, a final report -- that is, a report that is subject to peer review and approval by the Chief Scientist -- is required on each 1993 project. Some projects require more than one report.

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
19	21	5	2

### **Status of 1994 Project Reports as of September 30, 1996**

A total of 42 projects were funded in the 1994 Work Plan. Beginning with the 1994 project year, "multi-year" projects that receive Trustee Council funding in consecutive years are required to submit an annual report each year until the project is complete, at which point a final report is required. The annual report, although subject to peer review, need not be rewritten in response to peer review comments. Rather, the peer review comments are to be used to guide future work on the project. Annual reports are available to the public through OSPIC, and state on their front covers that "peer review comments have not been addressed in this report."

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
28	31	6	0

### **Status of 1995 Project Reports as of September 30, 1996**

A total of 66 projects were funded in the 1995 Work Plan. As with FY 94 projects, annual reports are required on multi-year projects, and final reports are required on all other projects.

<u>Reports Available to Public at OSPIC</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
16	18	23	9

### **Status of 1996 Projects as of September 30, 1996**

As indicated in the attached project status summaries, the agency liaisons continue to report that essentially all projects are proceeding according to schedule. Of interest this quarter, beaches near Nanwalek, Port Graham, and Tatitlek were test seeded with littleneck clams (Project 96131), construction of boardwalks began at the Kenai Beach Dunes site (Project 96180), and 12 additional harbor seals were tagged with SLTDRs (satellite-linked time-depth recorders) so their movements and haulout locations can be monitored through the winter (Project 96064).

In addition, the proceedings of the 1993 EVOS Symposium were published (Project 96507), and the advisory group created to guide implementation of the Chenega-area Residual Shoreline Oiling Reduction Project (96291) held its first planning meeting and visited the beaches targeted for cleanup. The Sound Ecosystem Assessment held a major synthesis workshop in Seward (Project 96320), and harbor seal hunters and scientists held another in a series of meetings to exchange knowledge on harbor seal abundance, trends, and stock identification (Project 96244). Most research projects concluded their field work and are now moving into a data analysis/annual report writing period.

### **Reports on NRDA Studies**

At their August meeting, the Trustee Council directed staff to develop a recommendation on finalizing reports on studies funded during the Natural Resource Damage Assessment period. A recommendation is in the process of being developed, and will be presented at the Council's December meeting.

### **Conclusion**

In brief, considerable progress was made again this quarter in making the results of studies funded by the Trustee Council available to the public through project reports. In total, 190

reports will be produced for projects funded in 1992, 1993, 1994, and 1995. As of September 30th, 134 of these reports had been peer reviewed and accepted by the Chief Scientist and only 13 had not yet been submitted for peer review. Perhaps more importantly, 122 reports on studies funded by the Trustee Council are now available to the public through OSPIC -- an increase of 36 over the June quarter.

**ATTACHMENT A**  
**Summary of Project Report Status as of September 30, 1996**

**1992 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	0	2	2
ADFG	26	1	4	21	21
ADNR	1	0	0	1	1
DOI	33	0	5	28	25
NOAA	11	1	0	10	10
USFS	2	0	0	2	0
<b>TOTAL</b>	<b>75</b>	<b>2</b>	<b>9</b>	<b>64</b>	<b>59</b>

**1993 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	1	1	1
ADFG	12	1	3	8	8
ADNR	0	0	0	0	0
DOI	9	1	1	7	6
NOAA	3	0	0	3	3
USFS	2	0	0	2	1
<b>TOTAL</b>	<b>28</b>	<b>2</b>	<b>5</b>	<b>21</b>	<b>19</b>

**1994 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	1	0	0	1	0
ADFG	19	0	2	17	16
ADNR	2	0	0	2	2
DOI	6	0	2	4	3
NOAA	5	0	0	5	5
USFS	4	0	2	2	2
<b>TOTAL</b>	<b>37</b>	<b>0</b>	<b>6</b>	<b>31</b>	<b>28</b>

**ATTACHMENT A**  
**Summary of Project Report Status as of September 30, 1996**

**1995 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	4	2	1	1	1
ADFG	25	1	15	9	7
ADNR	1	0	0	1	1
DOI	6	1	2	3	2
NOAA	8	3	3	2	3
USFS	6	2	2	2	2
<b>TOTAL</b>	<b>50</b>	<b>9</b>	<b>23</b>	<b>18</b>	<b>16</b>

## ATTACHMENT B

### Reports Significantly Behind Schedule

Agency	Project Number	PI	Final or Annual	Project Title	Status of Report
DOI	B08	Irons	Final	Kittiwakes	OVERDUE; returned to PI for revision 3/22/96
DOI	MM6	Ballachey	Final	Sea otter	Due 1/31/97 (reports #2, 3, 8, 16)
DOI	93006	Birkedahl	Final	Site specific archaeology	OVERDUE; never submitted
DOI	93035	Andres	Final	Black oystercatchers	OVERDUE; peer reviewed and returned to PI for revision 1/3/96; now expect revision 12/1/96
DOI	95038	PSG	Final	Pacific Seabird Group -- conference	Draft under review by contributors; expect to submit to Chief Scientist 11/96
DOI	95163D	Piatt	Final	Puffin diet sampling	OVERDUE; never submitted
ADFG	B11	Rothe	Final	Harlequin duck damage assessment	OVERDUE; peer reviewed and returned to PI for revision 2/13/96
ADFG	FS01	Fried, Bue	Final	Spawning area injury	OVERDUE; never submitted. Delay due to departure of PI. Was expected 10/1/96
ADFG	93033-1		Final	Harlequin duck - Afognak habitat assessment/PWS production	OVERDUE; peer reviewed and returned to PI for revision 11/14/95
ADFG	93033-2	Rothe	Final	Harlequin duck restoration	OVERDUE; never submitted; waiting for contractor's (Fry) analysis
DEC	93038	Piper	Final	Shoreline assessment	OVERDUE; peer reviewed and returned to PI for revision 1/26/96; now expected 11/96
DEC	95026	Braddock	Final	Hydrocarbon monitoring	OVERDUE; never submitted; delays in RSA of funds from ADEC to UAF
DEC	95060	Piper	Final	Spruce bark beetles	OVERDUE; never submitted; now expect October 31, 1996 (RSA'd to ADFG)



# **ATTACHMENT B** **Reports Significantly Behind Schedule**

NOAA	ST8	Short	Final	Sediment data synthesis	Database submitted to ADNR 10/22/96; report OVERDUE (due 9/30/96)
NOAA	95074	Carls	Final	Herring reproductive impairment	OVERDUE (due 9/30/96); now expect 11/96
NOAA	95090	Babcock	Final	Mussel bed monitoring	OVERDUE (due 9/30/96); now expect 11/10/96
NOAA	95121	Worthy	Annual	Fatty acid signatures of forage fish	OVERDUE (due 7/15/96)
USFS	95007B	Yarborough	Final	Archaeological site restoration	OVERDUE (due 8/31/96)
USFS	95320Q	Bishop	Final	Avian predation on herring spawn	OVERDUE (due 9/30/96); rec'd notice will be late

# Exxon Valdez Oil Spill Project Status Summary

## 1992 Work Plan

Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
AD	Administrative Director's Office	ALL	No report required.		
ARC1	Archaeological Survey	ADNR	Final report available to public at OSPIC.	<p>Reger, D.R., J.D. McMahon, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations.</p> <p>Four archaeological sites from which adequate collections and radiocarbon samples were obtained were sampled for sediments to test for presence of oil. Two sediment samples (Shuyak Island and Chenega Island) tested positive for oil. None of the sites yielded radiocarbon dates which appear to be significantly skewed from the expected age range. The results of the study show that reasonable dates can be obtained from the test sites despite presence of oil remains on the beach surface or in the case of two sites from within the cultural deposits. The results of the study are applicable to the sites studied and useful for management decisions based on broad general conclusions.</p>	
AW1	Surface Oil Maps	ADEC	Project terminated. DEC/NOAA overflight charts stored in Alaska Archives.	DEC/NOAA overflight charts stored in Alaska Archives.	
B02	Boat Surveys	DOI	Final report available to public at OSPIC.	<p>Klosiewski, S.P. and K.K. Laing. 1994. Marine bird populations of Prince William Sound, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Populations of 9 species or species groups (black oystercatcher, pigeon guillemot, cormorants, harlequin duck, loons, scoters, newgull, arctic tern, northwestern crow) declined more than expected in the oiled zone of Prince William Sound suggesting an oil effect. Most injured species were ecologically tied to intertidal or nearshore areas.</p>	Continued as 93045 and 94159.

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# Exxon Valdez Oil Spill Project Status Summary

1992 Work Plan

Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
B03	Murres Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Nysewander, D.R., C.H. Dippel, G.U. Byrd and E.P. Knudtson. 1993. Effects of the T/V Exxon Valdez oil spill on murres: A perspective from observations at breeding colonies. U.S. Fish and Wildlife Service. Homer.</p> <p>Numbers were reduced, nesting was delayed, and productivity rates were far below normal at major colonies within the spill trajectory. Reproductive success improved slightly in 1991.</p>	Related to R11, 93022 and 94039.
B04	Eagles Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Bauman, T.D., P.F. Schempf, and J.A. Bernatowicz. 1994. Effects of the Exxon Valdez oil spill on bald eagles. U.S. Fish and Wildlife Service. Anchorage.</p> <p>Reproductive success of Prince William Sound bald eagles was significantly impaired in 1989, and nest failures were correlated with the distribution of crude oil on beaches. Although estimated direct mortality throughout the spill area was relatively large (about 300 - 900 eagles), no change in the population could be detected due to wide variation in population counts. The Prince William Sound eagle population was expected to return to its prespill level by 1993.</p>	
B06	Marbled Murrelets Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Kuletz, K.J. 1994. Marbled murrelet abundance and breeding activity at Naked Island, Prince William Sound, and Kachemak Bay, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>The marbled murrelet population at a site within the path of the oil (Naked Island) was lower in 1989 than in prespill years, but returned to normal in 1990. Murrelet numbers in Kachemak Bay where oiling was minimal did not change following the spill.</p>	Related to R15, 93051B and 94102.

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# Exxon Valdez Oil Spill Project Status Summary

## 1992 Work Plan

Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
B07	Storm Petrels Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Nishimoto, M. and G.U. Byrd. 1994. Effects of oil from the T/V <i>Exxon Valdez</i> spill on fork-tailed storm petrels breeding in the Barren Islands, Alaska. U.S. Fish and Wildlife Service. Homer.</p> <p>At the largest storm-petrel colony within the spill trajectory (Barren Islands), no evidence of adverse effects to breeding petrels was found. Burrow occupancy rates were above average, nesting chronology was not delayed, and productivity was normal.</p>	
B08	Kittiwakes Damage Assessment Closeout	DOI	Draft report peer reviewed; returned to PI for revision March 22, 1996.	<p>Irons, D.B. 1994. Effects of the <i>Exxon Valdez</i> oil spill on black-legged kittiwake colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The number of breeding pairs did not decline at colonies in the oiled area of Prince William Sound but reproductive success in 1989 was less than expected, apparently due to low hatching success. Reproductive success did not recover by 1992 but whether the decline was due to the spill is unknown.</p>	TS1
B09	Pigeon Guillemots Damage Assessment Closeout	DOI	Final report available to public at OSPIC.	<p>Oakley, K.L. and K.J. Kuletz. 1994. Population, reproduction and foraging of pigeon guillemots at Naked Island, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The population at a major breeding site within the spill trajectory (Naked Island) declined by 50% compared to 1972-1973 levels. A long-term decline within Prince William Sound predated the spill and, therefore, the decline at naked Island could not be attributed totally to the spill. Reproduction was largely normal following the spill.</p>	93034 and 94173

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# Exxon Valdez Oil Spill Project Status Summary

1992 Work Plan

Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
B11	Harlequin Ducks Damage Assessment Closeout	ADFG	Draft report peer reviewed; returned to PI for revision February 13, 1996.	<p>New statistical analysis of bile results indicates elevated hydrocarbon concentrations in western Prince William Sound and Kodiak birds, but also in eastern Prince William Sound birds, compared to Juneau samples. Concentrations correlate positively with proximity to the spill origin.</p>	Project conducted in conjunction with R71 and continued as 93033. Also related to B2, CH1B, TS1, R103, and 93036.
B12	Shorebirds Damage Assessment Closeout	DOI	The results of this project will be presented in two reports: (1) Final report on migrant shorebirds accepted by Chief Scientist. Not yet at OSPIC. (2) Final report on black oystercatchers available to public at OSPIC.	<p>(1) Martin, P.D. 1993. Effects of the <i>Exxon Valdez</i> oil spill on migrant shorebirds using rocky intertidal habitats of Prince William Sound, Alaska, during Spring 1989. U.S. Fish and Wildlife Service, Anchorage.</p> <p>(2) Andres, B.A. 1994. The effects of the <i>Exxon Valdez</i> oil spill on black oystercatchers breeding in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>(1) Spring migrant shorebirds (surfbirds and black turnstones) escaped impacts because shorelines used by these species (particularly around Montague Island) were largely unoiled. (2) Black oystercatcher breeding was disrupted and hatching success reduced. Chicks raised on oiled beaches grew more slowly than chicks raised on unoiled beaches, perhaps due to ingestion of contaminated food.</p>	Related to R17, R103 and 93035.

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# Exxon Valdez Oil Spill Project Status Summary

1992 Work Plan

Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
CH1A	Coastal Habitat Damage Assessment	USFS	Final report accepted by OSPIC; copies currently being made.	<p>Highsmith, R.C., et al. Comprehensive assessment of coastal habitat. School of Fisheries and Ocean Sciences, UAF.</p> <p>Serious and long-term lasting effects on intertidal algae. Recovery occurring but slow to none in upper intertidal habitat. Full recovery expected. Intertidal invertebrates indicate negative effects from spill. Intertidal fish findings were inconclusive.</p>	Continued as R102, 93039 and 94086.
CH1B	Hydrocarbons in Mussels	NOAA	Final report available to public at OSPIC.	<p>Babcock, M. NOAA. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites in PWS and the Gulf of Alaska.</p> <p>Exxon Valdez oil is located in several sites. Reductions in hydrocarbons are seen at several sites in PWS over 1989.</p>	R103
FS01	Spawning Area Injury	ADFG	REPORT OVERDUE. Was to be submitted to Chief Scientist by August 15, 1995; then expected October 1, 1996; now delayed to February 1997. [Note: Report will present findings from both FS01 and R60B.]	<p>Fried, S. and B. Bue</p> <p>Documented oil contamination of Prince William Sound pink salmon spawning area. Improved current and historic pink salmon escapement estimates which are necessary for accurate estimates of total wild returns. For preliminary results, see 1989, 1990 and 1991 NRDA Draft Status Reports.</p>	Project conducted in conjunction with R60B.

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# **Exxon Valdez Oil Spill Project Status Summary**

## **1992 Work Plan**

**Quarter Ending September 30, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS02	Pre-emergent Fry	ADFG	Final report available to public at OSPIC.	Sharr, S. B. Bue, et al. Injury to salmon eggs and pre-emergent fry in PWS. ADF&G.  Measured higher embryo mortalities in oil-contaminated streams than in unoiled streams.	Project conducted in conjunction with R60C; continued as 93002 and 94191.
FS03	Coded-Wire Tags Damage Assessment	ADFG	Final report available to public at OSPIC.	Sharr, S., et al. Coded wire tag studies on PWS salmon, 1989-91.  Unable to detect significant differences in survival to adults from fry emerging from oiled and control streams. Also unable to detect significant difference in survival of hatchery fish reared in oiled versus unoiled areas of Prince William Sound.	Project conducted in conjunction with R60A; continued as 93067, 93068, 94185, and 94320B.
FS04A	Early Marine Salmon Damage Assessment	ADFG	Final report available to public at OSPIC.	Willette, M., et al. Early marine salmon injury assessment in PWS. ADF&G  Detected reduced growth and survival of fry rearing in oiled areas in 1989. No significant differences in growth and survival between oiled and nonoiled areas in subsequent years. Rate of adult returns to unoiled hatcheries twice that of oiled hatcheries in 1990.	Related to most projects in 94320 (PWS System Investigation). FS1, FS2, FS3, FS4A, and FS4B measured oil damages to specific life stages. FS28 incorporated their results into a model to estimate population level damages.

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# Exxon Valdez Oil Spill Project Status Summary

1992 Work Plan

Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS04B	Juvenile Pinks	NOAA	Final report available to public at OSPIC.	<p>Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats. NOAA, NMFS, Auke Bay Lab, Juneau, AK.</p> <p>Documented exposure and contamination of juvenile salmon in Prince William Sound. Contamination was associated with reduced growth. Ingestion of oil or oiled prey was route of contamination.</p>	FS4A, AW3, and ST3A.
FS05	Dolly Varden Damage Assessment	ADFG	Final report available to public at OSPIC. Report includes data from R090.	<p>Hepler, K.R., P. A. Hansen, D.R. Bernard. Impact of oil spilled from the <i>Exxon Valdez</i> on survival and growth of Dolly Varden and cutthroat trout in PWS, AK. ADF&amp;G.</p> <p>Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.</p>	Combined with R90.

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# **Exxon Valdez Oil Spill Project Status Summary**

## **1992 Work Plan**

**Quarter Ending September 30, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS11	Herring Injury	ADFG	Redraft of report submitted to Chief Scientist March 14, 1995. [NOTE: Report will include nine articles prepared for the Canadian Journal of Fisheries and Aquatic Science and will be included in the proceedings of the EVOS symposium.]	<p>Brown, E. D., et al. Injury to Prince William Sound Following the <i>Exxon Valdez</i> Oil Spill.</p> <p>Adult herring migrating to the spawning grounds in 1989 were exposed to oil. Exposure to oil continued throughout 1989 and into 1990. Internal tissues were damaged but the short- and long-term effects are speculative. There may have been a short-term effect which inhibited egg deposition and a long-term reproductive impairment (reduced survival of offspring). Eggs were deposited in oiled areas in 1989. Larvae hatched from exposed embryos suffered reduced survival.</p>	Similar to 94166 (Herring Spawn Deposition). Also related to 94165 and 94320.
FS13	Effects of Hydrocarbons on Bivalves	ADFG	Draft report peer reviewed; returned to PI for revision September 26, 1996.		Clams are important prey for ducks, sea otters, river otters, and bears. This study is related to studies of these species and to 93017.

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# Exxon Valdez Oil Spill Project Status Summary

1992 Work Plan

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS27	Sockeye Salmon Overescapement	ADFG	Final report available to public at OSPIC.	<p>Schmidt, D.C., T.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. King, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. *1993. Sockeye salmon overescapement, Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report, ADFG, Commercial Fisheries Management and Development Division, Soldotna, AK.</p> <p>Approximately ten to fifteenfold reduction in Kenai River smolt when compared to brood year 1987. Reduced smolt production from Akalura and Red Lakes, Kodiak Island. Reduced harvests for the Kenai are forecast for 1994 with returns below escapement levels possible for 1995 and 1996. Minimal harvests of Kenai River sockeye salmon are likely. Reduced harvests are forecast for Red and Akalura Lakes for 1994 through 1996.</p>	<p>Continued as 93002 and 94258. R53 acquired new information to facilitate management of anticipated reduced future runs. R113 examined potential for hatchery-reared fry in Red Lake, but forecasted returns make the project unfeasible.</p>
FS28	Run Reconstruction	ADFG	Final report available to public at OSPIC.	<p>Geiger, H., et al. Run reconstruction and life-history model.</p> <p>Estimated losses to adult populations from oil damages to early life stages at 2 to 3 million in 1990, and 40 to 70 thousand in 1991. Projected losses of 100 to 200 thousand adults in 1993 and 1994.</p>	<p>Through this project, results from FS1, FS2, FS3, FS4A and FS4B were incorporated into a model to estimate population level damage.</p>

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS30	Database Management	ADFG	Final report available to public at OSPIC.	<p>DiCostanzo, C. and B.P. Simonson. 1993. Database management, <i>Exxon Valdez</i> Oil Spill Final Report, ADF&amp;G, Division of Commercial Fisheries, Juneau, AK.</p> <p>Software was written to provide access to fish harvest database using the ADFG commercial fisheries Wide-Area Network (WAN). Procedures were implemented to provide reports in numerous database, spreadsheet, and statistical formats. Documentation and guidelines for using the harvest database were completed. WAN capability is now available between Juneau, Cordova, Anchorage, Kodiak, Soldotna, and Homer.</p>	This database provides a repository for all NRDA and restoration projects information.
MM1	Humpback Whales Damage Assessment	NOAA	Final report available to public at OSPIC.	<p>Dalheim, M. and O. von Ziegesar. 1993. Effects of the <i>Exxon Valdez</i> oil spill on the abundance and distribution of humpback whales (<i>megaptera novaeangliae</i>) in Prince William Sound. NMFS, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, photographic analysis of PWS humpbacks revealed 59 whales identified in 119 encounters. In 1990, 66 whales were identified in 201 encounters. The number of humpbacks encountered per day was less in 1989 and 1990 than in 1988. Because of the difference in survey effort before and after the spill, it is difficult to determine whether there was a difference in the number of humpbacks using PWS. Regarding distribution of whales in PWS: In 1988 and 1990, more whales used the Lower Knight Island Passage than in 1989. Increased vessel and aircraft traffic and distribution of prey may have been contributing factors for the temporary redistribution of whales during 1989. Despite considerable research effort, only one PWS humpback was documented to move from PWS to southeastern Alaska during 1989.</p>	

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MM2	Killer Whales Damage Assessment	NOAA	Final report available to public at OSPIC.	<p>Dalheim, M. and C. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound, Kodiak Archipelago, and Southeast Alaska. National Marine Mammal Laboratory, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, 8 resident (143 killer whales) and 4 transient pods (34 whales) were documented in 89 encounters. In 1990, 9 resident pods (148 whales) and 4 transient pods (30 whales) were identified in 80 encounters. During 1991, 7 resident pods (105 whales) and 2 transient pods (14 whales) were identified in 54 encounters. Despite increased effort over these 3 years, the number of encounters appears to be decreasing. The missing animals were not seen near Kodiak Island or southeast Alaska. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the 1989-1991 period. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, 4.3% in 1991, and zero in 1992. Killer whale annual mortality rates are usually less than 2%.</p>	

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MM6 (1 of 3)	Sea Otter Damage Assessment	DOI	The results of this project will be presented in 19 reports -- 15 reports have been accepted by the Chief Scientist (14 are available to the public at OSPIC); 4 reports have been peer reviewed and returned to the PIs for revision.	<p>(1) Ballachey, B.E. Biomarkers of damage to sea otters in PWS following potential exposure to oil spilled from the T/V <i>Exxon Valdez</i>. [Final report available to public at OSPIC.]</p> <p>(2) Ballachey, B.E. and D.M. Mulcahy. Hydrocarbon residues in tissues of sea otters (<i>Enhydra lutris</i>) collected from southeast Alaska. [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.]</p> <p>(3) Ballachey, B.E. and D. M. Mulcahy. Hydrocarbons in hair, livers and intestines of sea otters (<i>Enhydra lutris</i>) found dead along the path of the <i>Exxon Valdez</i> oil spill [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.]</p> <p>(4) Bodkin, J.L., D.M. Mulcahy and C. Lensink. Age-specific reproduction in female sea otters (<i>Enhydra lutris</i>) from southcentral Alaska: analysis of reproductive tracts. [Final report available to public at OSPIC.]</p> <p>5) Bodkin, J.L. and M.S. Udevitz. An intersection model for estimating sea otter mortality from the <i>Exxon Valdez</i> oil spill along the Kenai Peninsula. [Final report available to public at OSPIC.]</p>	Continued as 93043.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
MM6(2of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	<p>(6) Burn, D.M. Boat-based population surveys of sea otters (<i>Enhydra lutris</i>) in PWS in response to the <i>Exxon Valdez</i> oil spill. [Report accepted by Chief Scientist; not yet at OSPIC.]</p> <p>(7) DeGange, A.R., D.C. Douglas, D.H. Monson and C. Robbins. Surveys of sea otters in the Gulf of Alaska in response to the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.]</p> <p>(8) Doroff, A.M. and J.L. Bodkin. Sea otter foraging behavior and hydrocarbon levels in prey following the <i>Exxon Valdez</i> oil spill in PWS, Alaska [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.]</p> <p>(9) Doroff, A.M. and A.R. DeGange. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.]</p> <p>(10) Lipscomb, T.P., R.K. Harris, R.B. Moeller, J.M. Fletcher, R.J. Haebler and B.E. Ballachey. Histopathologic lesions associated with crude oil exposure in sea otters. [Final report available to public at OSPIC.]</p> <p>(11) Lipscomb, T. P., R.K. Harris, A.H. Rebar, B.E. Ballachey and R.J. Haebler. Pathological studies of sea otters. [Final report available to public at OSPIC.]</p> <p>(12) Monnett, C. and L.M. Rotterman. Movements of weanling and adult female sea otters in PWS after the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.]</p>	

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MM6(3of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	<p>(13) Monnett, C. and L.M. Rotterman. Mortality and reproduction of female sea otters in PWS. [Final report available to public at OSPIC.]</p> <p>(14) Monnett, C. and L.M. Rotterman. Mortality and reproduction of sea otters oiled and treated as a result of EVOS. [Final report available to public at OSPIC.]</p> <p>(15) Monson, D.H. and B.E. Ballachey. Age distributions and sex ratios of sea otters found dead in PWS following the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.]</p> <p>(16) Mulcahy, D.M. and B.E. Ballachey. Hydrocarbon residues in tissues of sea otters (<i>Enhydra lutris</i>) collected following the <i>Exxon Valdez</i> oil spill. [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.]</p> <p>(17) Rebar, A.H., B.E. Ballachey, D.L. Bruden and K.A. Kloecker. Hematology and clinical chemistry of sea otters captured in PWS following the <i>Exxon Valdez</i> oil spill. [Final report available to public at OSPIC.]</p> <p>(18) Rotterman, L.M. and C. Monnett. Mortality of sea otter weanlings in eastern and western PWS during the winter of 1990-91. [Final report available to public at OSPIC.]</p> <p>(19) Udevitz, M.S., J.L. Bodkin and D.P. Costa. Detection of sea otters in boat based surveys in PWS. [Final report available to public at OSPIC.]</p>	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R011	Murre Recovery Monitoring	DOI	Final report available to public at OSPIC.	<p>Dragoo, D.E., G.V. Byrd, D.G. Roseneau, D.A. Dewhurst, J.A. Cooper, and J.H. McCarthy. 1994. Population levels and reproductive performance of murre based on observations at breeding colonies four years after the T/V <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Homer</p> <p>Numbers of murre breeding at major colonies within the trajectory remained lower in 1992. Breeding chronology was delayed. Productivity at the Barren Islands was higher than in other postspill years, but still lower than normal. Productivity at Puale Bay was normal.</p>	Continued as 93022 and 94039. Also related to B3.
R015	Marbled Murrelet Restoration Study	DOI	<p>The results of this project will be presented in two reports:</p> <p>(1) Final report available to public at OSPIC.</p> <p>(2) Final report available to public at OSPIC.</p>	<p>(1) Kuletz, K.J., D.K. Marks, and N.L. Naslund. 1994. At-sea abundance and distribution of marbled murrelets in the Naked Island area, Prince William Sound, Alaska, in Summer, 1991 and 1992. U.S. Fish and Wildlife Service, Anchorage</p> <p>(2) Kuletz, K.J., N.L. Naslund, and S.K. Marks. 1994. Identification of marbled murrelet nesting habitat in the <i>Exxon Valdez</i> oil spill zone. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Using ground search techniques, 10 tree nests were found on Naked Island in 1991 and 1992. Nest trees were in stands of high volume and size class trees, and upland activity of murrelets throughout Prince William Sound was highest in such stands.</p>	Continued as part of 93051 and 94505 (closeout).

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R047	Stream Habitat Assessment	ADFG	Final report available to public at OSPIC.	<p>Kuwada, M. and K. Sundet. 1993. Stream Habitat Assessment Project: Afognak Island. ADF&amp;G.</p> <p>About 250 km of shoreline and 260 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on Afognak Island, resulting in discovery of 167 anadromous streams totaling about 56 km. Stream habitat parameters and upper extents of anadromous distribution were documented, and streams were mapped by GPS.</p>	Continued as part of 93051 and 94505 (closeout). Supported evaluation of land for habitat protection.
R053	Kenai River Sockeye Salmon Restoration	ADFG	Final report available to public at OSPIC.	<p>Tarbox, K., et al. Kenai River sockeye salmon restoration.</p> <p>Successful collection of baseline and fishery samples for genetic stock identification. Unsuccessful in choosing new adult in-river hydroacoustic equipment. Successful hydroacoustic enumeration of returning adult salmon in Upper Cook Inlet.</p>	R59 analyzed genetic samples collected by this project.
R059	Genetic Stock Identification	ADFG	Annual report peer reviewed; available to public at OSPIC.	<p>Seeb, J. and L. Seeb. Assessment of genetic stock structure of salmonids. ADF&amp;G. June 1993.</p> <p>Genetic data were collected during 1992 from spawning populations contributing to mixed-stock harvests of sockeye salmon in Cook Inlet. These data can be used to estimate the presence of Kenai River stocks in mixed-stock areas of Upper Cook Inlet.</p>	R53 collected spawning samples.

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R060A/B	Prince William Sound Pink Salmon	ADFG	R060A: Final report available to public at OSPIC. R060B: Findings will be presented in report being prepared under Project FS01.	R060A: Sharr, S., et al. Coded wire tag studies on PWS salmon, 1992. R060B: See FS01.  R060A: The CWT program helped reduce the commercial harvest on damaged pink salmon populations by providing fishery managers with timely inseason fishery stock composition estimates. R060B: The escapement project provided improved pink salmon escapement information which was essential for the precise fisheries management required to protect damaged wild stocks.	Continued as 93067, 94184 (report preparation) and 94320B. Also related to R60C, which monitors and investigates mechanisms for oil damage to early life stages of pink salmon populations.
R060C	Pink Salmon Egg/Fry	ADFG, NOAA	The results of this project will be presented in two reports: (1) ADFG report available to public to OSPIC. (2) NOAA findings included in annual report prepared under 94191. See 94191 for status.	(1) Sharr, Samuel and C. Peckham. 1994. Coded wire tag studies on Prince William Sound salmon, 1992. ADFG (2) See 94191.  (1) Persistence of elevated mortalities among embryos in oiled streams versus those in unoiled streams suggests genetic damage. (2) Oil exposures completed for 1992 and 1993 brood years. All 1992 brood pinks died from bacterial kidney disease by June 1994. Spawning of 1993 brood expected in September 1995, with survival of progeny to be determined in early 1996.	Continued as 93003 and 94191. Other related projects include B11, CH1B, R60AB, R103, and 93036.

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R071	Harlequin Duck Restoration and Monitoring	ADFG	Draft final report submitted to Chief Scientist April 15, 1996.	<p>Rothe, T. Breeding ecology of harlequin ducks in PWS, Alaska. ADF&amp;G.</p> <p>Crowley, D.W. 1993. Breeding habitat of harlequin ducks in PWS, AK. MS Thesis. Oregon State University, Corvallis, OR.</p> <p>Comparative harlequin data in eastern Prince William Sound for B11. 1991-1992 harlequin production in eastern Prince William Sound similar to prespill. Techniques devised to capture and track harlequins. Breeding stream parameters and nest sites described. Additional oiled mussel beds identified. Description and analysis of harlequin breeding stream habitat in eastern PWS produced in an M.S. thesis, Oregon State University (Crowley 1994).</p>	B11 corroborated harlequin status in Prince William Sound. R103 documented continued oiled prey. B2 corroborates harlequin status in PWS.
R073	Harbor Seals	ADFG	Final report available to public at OSPIC.	<p>Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in PWS and adjacent areas following EVOS. ADF&amp;G, Wildlife Conservation Division, Fairbanks, AK.</p> <p>Harbor seals continued to use heavily oiled haulouts even when unoiled sites were available nearby. They were observed to give birth and care for their pups on these sites. The pelage of both pups and adults became oiled when they used these sites or contacted oil in the water. However, the pelage became cleaner with time if they did not continue to use oiled sites. Many carcasses recovered were either stillborn or died shortly after birth. Observations suggest that stress and/or toxic effects of oil resulted in abortions, premature births, and increased mortalities in heavily oiled areas. Four book chapters prepared and in press detailing results of MM5 study.</p>	Started in 1989 as MM5. Continued as 93046 and 94064.

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R090	Dolly Varden Char Monitoring	ADFG	Report being prepared under Project FS05.	See FS05.  Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.	Project combined with FS05. R90 and R106 provide information on populations of Dolly Varden and cutthroat trout for 94320 (Ecosystem Study Plan).
R092	GIS Mapping and Analysis: Restoration	ADNR	No report required.	Provided mapping and database support for restoration projects. Developed timber harvest database and land status and parcel maps for imminent threat parcels. Contributed to a 3-volume data dictionary produced for the Trustee Council by the Nature Conservancy.	Supported numerous restoration projects.

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R102	Herring Bay Experimental and Monitoring Study	ADFG	Final report available to public at OSPIC.	<p>Highsmith, R.C., M.S/ Stekoll, A.J.Hooten, P. van Tamelen, L. Deysher, L. McDonald, D. Strickland and W.P. Erickson. 1993. Herring Bay experimental and monitoring studies. School of Fisheries and Ocean Sciences, UAF.</p> <p>Cover of the dominant intertidal alga, <i>Fucus gardneri</i>, was reduced at oiled/cleaned sites. <i>Fucus</i> recruitment was poor in the mid- to upper intertidal, probably due to lack of shelter from desiccation and heating by adult plants. Limpet densities continued to be lower in the upper intertidal. Recovery appeared to be occurring in the lower intertidal zone in 1990-1991 and in the upper intertidal in 1993. Results have been incorporated into an interaction web to elucidate potential oil spill effects on community dynamics.</p>	Continued as 93039 and 94086.

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R103	Oiled Mussels	ADFG, NOAA, DOI	The results of this project will be presented in four reports: (1) NOAA annual report peer reviewed; available to public at OSPIC. (2) DOI/FWS findings being incorporated into report on 93035. (3) ADFG final report available to public at OSPIC. (4) DOI/NPS final report accepted by Chief Scientist. Not yet at OSPIC.	(1) Babcock, M., P.M.Rounds, C. Brodersen and S. Rice. 1993. Recovery monitoring and restoration of intertidal oiled mussel beds in Prince William Sound impacted by the <i>Exxon Valdez</i> oil spill. NOAA, NMFS, Auke Bay Laboratory, Juneau, Alaska. (2) See 93035. (3) Faro, J.B., R.T. Bowyer, et al. 1994. River otter component of the oiled mussel bed study. (4) Irvine, G. 1993 Geographic extent and recovery monitoring of intertidal oil in mussel beds in Gulf of Alaska effected by the <i>Exxon Valdez</i> oil spill.  (1) Identified 27 mussel beds within PWS with total petroleum hydrocarbons greater than 10,000 mg/g wet weight. Site manipulation was conducted at three heavily oiled mussel beds. (2) Black oystercatcher chicks raised on oiled sites grew more slowly than chicks raised on unoiled sites. (3) Differences in levels of blood haptoglobin and Interleukin-6 ir, previously found to be elevated in river otters inhabiting oiled compared to nonoiled areas in PWS, were not observed in summer 1992. River otters from oiled areas continued to regain body size from levels noted in 1990. Suggests that river otters may be recovering from chronic effects that were observed in 1990 and 1991.	Continued as 93036, 94090, and 95090.
R104A	Site Stewardship	DOI	Final report available to public at OSPIC.	Corbett, D.G. 1994. Development of the Alaska Heritage Stewardship Program for protection of cultural resources at increased risk due to the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage, AK.  Increased public knowledge of archaeological sites following the spill led to increased vandalism. A stewardship program to train local residents to protect cultural resources was developed.	93006, 94007

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R105	Instream Survey Restoration Implementation Planning	ADFG, USFS	The results of this project will be presented in two reports (report writing funded under 93063): (1) Final report available to public at OSPIC. (2) USFS report accepted by Chief Scientist. Not yet at OSPIC.	(1) Willette, M. Survey and evaluation of instream habitat and stock restoration techniques for wild pink and chum salmon. (2) Weidemeyer, K. Survey and evaluation of instream habitat and stock restoration techniques for anadromous fish.  A number of sites were reviewed, evaluated, and ranked for possible instream restoration efforts. A number of efforts have subsequently been implemented.	Continued as 93063.
R106	Dolly Varden Restoration	ADFG	Final report available to public at OSPIC.	McCarron, S. and A.G. Hoffman, 1993. Technical support study for the restoration of Dolly Varden and cutthroat trout populations in PWS. ADF&G, Division of Sport Fish, Anchorage, AK.  The nature and extent of injury to Dolly Varden and cutthroat trout was documented in FS5. The goal of R106 was to provide information for developing a management plan to protect impacted stocks, while allowing for continued recreational fishing for sport anglers where stocks could support fisheries. Sixty-one streams were surveyed to provide this information.	FS5 and 94139.

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R113	Red Lake Sockeye Salmon Restoration	ADFG	Project canceled based on findings of FS27.	<p>Red Lake does not need restoration effort. This project was funded in anticipation of poorer returns of sockeye salmon to Red Lake than actually occurred.</p>	Related to FS27. NEPA compliance for Red Lake restoration project was funded through 93030, which was canceled when the project was dropped.
RT	Restoration Team	ALL	No report required.		
ST1A	Subtidal Sediments	NOAA	Final report available to public at OSPIC.	<p>O'Clair, et al. NOAA. Petroleum hydrocarbon induced injury to subtidal sediment resources.</p> <p>Subtidal sediments have been found to be contaminated at no fewer than 15 sites within Prince William Sound by June 1990. Contamination had reached at least 20 meters at some sites. Evidence of hydrocarbon movement downslope into subtidal sediments was detected by 1991.</p>	Continued as 93047 and 94285. Other related projects include ST1B.

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ST1B	Subtidal Microbial	ADEC	Final report available to public at OSPIC.	<p>Braddock, Joan F., B. Rasley, T. Yeager, J. Lindstrom, D. Brown. Hydrocarbon mineralization potentials and microbial populations in marine sediments following the <i>Exxon Valdez</i> oil spill. DEC</p> <p>The numbers and activity of oil-degrading microorganisms were measured in sediments periodically for two years after the oil spill. Populations of oil-degrading microorganisms were significantly higher in sediments collected at oiled sites relative to reference sites. This information is useful in establishing the extent of contamination of the oil with time and also provides evidence that biodegradation is occurring naturally in Prince William Sound.</p>	93047
ST2A	Shallow Benthic	ADFG	No report required. (Data/findings incorporated into report on 93047.)	<p>See 93047.</p> <p>At oiled sites there was a decrease in some subtidal organisms relative to unoiled sites. Partial recovery observed in 1991.</p>	Continued as 93047 and 94285. Other related projects include B11, CH1A, R103, and TM3.
ST2B	Deep Water Benthic	ADFG	Final report available to public at OSPIC.	<p>Feder, H. 1995. Injury to deep benthos. ADFG</p> <p>No indication of oil-related damage to deep benthic environment. No oil fractions appear related to unusual benthic faunal composition. Differences between stations within and outside of oil trajectory were mainly related to sediment differences. No oil effects demonstrated.</p>	CH1A, ST1B, ST2A, ST4, ST5, ST6, ST7, ST8, and TS1.

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Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST3A	Caged Mussels Damage Assessment <sup>1</sup>	NOAA	The results of this project will be presented in two reports: (1) Final report available to public at OSPIC. (2) Final report available to public at OSPIC.	(1) Petroleum hydrocarbons in near surface seawater of PWS: chemical sampling and analysis. (2) Petroleum hydrocarbons in near surface seawater of PWS: analysis of caged mussels.  Mussels transplanted along spill trajectory accumulated particulated oil at concentrations that decreased with depth, elapsed time, and distance from heavily oiled beaches. In 1990 and 1991, low concentrations of polynuclear aromatic hydrocarbons were sporadically detected at locations adjacent to heavily oiled beaches. Petroleum hydrocarbons were detected only sporadically in mussels deployed in locations outside Prince William Sound in 1989.	AW3, ST3B
ST3B	Sediment Traps Damage Assessment	ADEC	Final report available to public at OSPIC.	Sale, David M., J. Gibeaut, J. Short. Nearshore subtidal transport of hydrocarbons and sediments following the <i>Exxon Valdez</i> oil spill. ADEC  The subtidal sediment trap study demonstrated that oiled particulate matter derived from oil-impacted beaches in Prince William Sound contaminated adjacent subtidal sediments. The study further showed that the transfer rate of oil from beach to subtidal sediment was highest the year following the spill, and declined steadily thereafter.	ST3A and ST4

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**Exxon Valdez Oil Spill Project Status Summary**  
**1992 Work Plan**  
**Quarter Ending September 30, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST4	Fate and Toxicity Damage Assessment	NOAA	Final report available to public at OSPIC.	<p>Fate and toxicity of spilled oil from the <i>Exxon Valdez</i>. 1994.</p> <p>Results indicate that some toxicity was still associated in 1990 and 1991 with sediments from lower intertidal zones of heavily oiled sites. The fate of <i>Exxon Valdez</i> oil will include transformation of most constituents (through biodegradation and photooxidation) mainly into carbon dioxide and water, although some constituents may persist indefinitely.</p>	AW4, ST1, ST2, ST3A, ST3B, ST7, TS1 and response studies.
ST5	Shrimp	ADFG	Final report available to public at OSPIC.	<p>Trowbridge, C. 1992. Injury to Prince William Sound spot shrimp. ADF&amp;G, Commercial Fisheries Management and Development Division, Anchorage, AK.</p> <p>Hydrocarbon analyses did not detect oil contamination with sampled spot shrimp. Shrimp collected in unoiled areas had more inflammatory gill lesions than did shrimp from the oiled area. These results indicate that oil contamination had little or no effect on spot shrimp.</p>	
ST6	Rockfish Damage Assessment	ADFG	Final report available to public at OSPIC.	<p>Hoffman, A. Injury to demersal rockfish and shallow reef habitats in PWS, 1989-91.</p> <p>Oil was determined to be the cause of death for a small number of demersal rockfish in Prince William Sound. Dead and dying rockfish were reported from the spill area. Of the five fish that were fresh enough to be necropsied, exposure to crude oil was found to be the cause of death. These results prompted additional testing for hydrocarbons in live fish. These tests showed at least 11 of 36 rockfish tested from oiled sites had been exposed to oil within 2 weeks prior to testing. None of the 13 fish from unoiled sites were exposed to oil. Subsequent studies showed some indications of sublethal injuries to rockfish from exposure to oil.</p>	ST2A and ST2B

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# Exxon Valdez Oil Spill Project Status Summary

1992 Work Plan

Quarter Ending September 30, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST7	Demersal Fishes Damage Assessment	NOAA	Final report available to public at OSPIC.	Collier, T. Assessment of oil spill impacts on fishery resources: measurement of hydrocarbons and their metabolites, and their effects, in important species. NOAA  Results show continuing exposure of several benthic fish species and pollock, suggesting continuing petroleum contamination of subtidal sediments, water and food in 1990 and 1991 at sites up to 400 miles from the spill origin.	ST1A
ST8	Sediment Data Synthesis	NOAA	Report consists of hydrocarbon database (provided to ADNR October 21, 1996 for incorporation into the Trustee Council's Information Management System) and a report (which is overdue; now expected early November 1996). Report/database will include data through FY 95.	Report will include electronic database.  Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	TS1, TS3, and 93053.
TM3	River Otter and Mink Damage Assessment in Prince William Sound	ADFG	Final report available to public at OSPIC.	Faro, J.B., R.T. Bowyer, J.W. Testa, and L.K. Duffy. Assessment of injury to river otters in PWS, AK following the <i>Exxon Valdez</i> oil spill. ADF&G  The results indicate that differences in home range, habitat selection, and latrine site abandonment, as well as changes in food habits, occurred in river otters.	CH1B and R103

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# ***Exxon Valdez Oil Spill Project Status Summary***

**1992 Work Plan**

**Quarter Ending September 30, 1996**

<b><u>Project No.</u></b>	<b><u>Project Title</u></b>	<b><u>Lead Agency</u></b>	<b><u>Report Status</u></b>	<b><u>References and Results</u></b>	<b><u>Related Projects</u></b>
TS1	Hydrocarbon Analysis	NOAA	Report being prepared under ST8.	See ST8.  Coordinated the chemical analysis of all samples collected by damage assessment studies to develop a single set of analytical data comparable across projects.	ST8, TS3, and B08.
TS3	GIS Mapping and Analysis: Damage Assessment	ADNR	No report required.	Provided mapping and database support for damage assessment projects.	Supported numerous damage assessment projects, including FS 4, FS13, CH1A and R47.

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## A T T A C H M E N T   C

**OIL SPILL PUBLIC INFORMATION CENTER**

**645 G Street  
Anchorage, AK 99501  
(907) 278-8008  
(907) 265-9359 fax  
1-800-478-7745 Alaska  
1-800-283-7745 outside Alaska**

**Final Reports  
September 1996**

Attached is a list of published final reports for Natural Resource Damage Assessment Studies and Restoration Projects. Copies of these reports may be checked out from the Oil Spill Public Information Center. Copies are also available for viewing at the following libraries:

A. Holmes Johnson Library - Kodiak  
Alaska Historical Library - Juneau  
Alaska Resources Library - Anchorage  
Alaska State Library - Juneau  
Alaska Department of Environmental Conservation Library - Juneau  
Alaska Department of Fish and Game Habitat Library - Anchorage  
Auke Bay Fisheries Lab Library - Juneau  
Cordova Public Library - Cordova  
E.E. Rasmusson Library - University of Alaska, Fairbanks  
Kenai Community Library - Kenai  
Ketchikan Public Library - Ketchikan  
Kuskokwim Consortium Library - Bethel  
Library of Congress - Washington, D.C.  
National Library of Canada - Ottawa  
Northwest Community College Learning Resource Center - Nome  
Tuzzy Consortium Library - Barrow  
University of Alaska, Anchorage Consortium Library - Anchorage  
University of Alaska, Southeast Library - Juneau  
University of Washington Library - Seattle  
U.S. Fish and Wildlife Service Library - Anchorage  
Valdez Consortium Library - Valdez  
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Copies of the final reports may be purchased from the following:

Anchorage Copy Centers:

Clay's Printing - (907) 561-6270

TimeFrame - (907) 562-3822

National Technical Information Service (NTIS) - (703) 487-4650

## FINAL REPORTS

September 1996

### Natural Resource Damage Assessment Studies

\* = new additions to this list.

#### Air/Water 3

Short, J.W. and P.M. Harris. 1996. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill I: Chemical sampling and analysis, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3)*, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay, Alaska. (NTIS No. PB96-196951)

#### Air/Water 3 (Subtidal 3A)

Short, J.W. and P. Rounds. 1995. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill II: analysis of caged mussels, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3, Subtidal Study Number 3A)*, National Oceanic and Atmospheric Administration, Juneau, Alaska. (NTIS No. PB96-196969)

#### Archaeology 1

Reger, D.R., J.D. McMahan, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Archaeology Study Number 1)*, Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology, Anchorage, Alaska. (NTIS N. PB96-194659)

#### \*Bird 2

Klosiewski, S.P. and K.K. Laing. 1994. Marine bird populations of Prince William Sound, Alaska, before and after the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 2)*, U.S. Fish and Wildlife Service, Anchorage, Alaska.

\*Bird 3

Nyswander, D.R., C.H. Dippel, G.V. Byrd, and E.P. Knudtson. 1993. Effects of the *Exxon Valdez* oil spill on murre: a perspective from observations at breeding colonies, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Bird Study Number 3), U.S. Fish and Wildlife Service, Anchorage, Alaska.

Bird 4

Bowman, T.D., P.F. Schempf, and J.A. Bernatowicz. 1993. Effects of the *Exxon Valdez* oil spill on bald eagles, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Bird Study Number 4), U.S. Fish and Wildlife Service, Anchorage, Alaska.

\*Bird 6

Kuletz, K.J. 1994. Marbled murrelet abundance and breeding activity at Naked Island, Prince William Sound, and Kachemak Bay, Alaska, before and after the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Bird Study Number 6), U.S. Fish and Wildlife Service, Anchorage, Alaska.

\*Bird 7

Nishimoto, G. and G.V. Byrd. 1993. Effects of the *Exxon Valdez* oil spill on fork-tailed storm petrels breeding in the Barren Islands, Alaska, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Bird Study Number 7), U.S. Fish and Wildlife Service, Homer, Alaska.

Bird 9

Oakley, K.L. and K.J. Kuletz. 1994. Population, reproduction and foraging of pigeon guillemots at Naked Island, Alaska, before and after the *Exxon Valdez* oil spill. *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Bird Study Number 9), U.S. Fish and Wildlife Service, Anchorage, Alaska.

Bird 12/Restoration Study 17

Andres, B.A. 1995. The effects of the *Exxon Valdez* oil spill on black oystercatchers breeding in Prince William Sound, Alaska, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Bird Study Number 12, Restoration Study Number 17), U.S. Fish and Wildlife Service, Anchorage, Alaska.



#### Coastal Habitat 1B

Babcock, M.B. and J.W. Short. 1996. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites within Prince William sound and the Guld of Alaska, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Coastal Habitat Study Number 1B), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska. (NTIS No. PB96-194824)

#### Fish/Shellfish 2

Sharr, S., B.G. Bue, S.D. Moffitt, A. Craig, and D.G. Evans. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 2), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska. (NTIS No. PB96-194840)

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#### Fish/Shellfish 4

Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 4, NMFS Component), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

#### Fish/Shellfish 4A

Willette, T.M., G. Carpenter, P. Shields, and S.R. Carlson. 1994. Early marine salmon injury assessment in Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 4A), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska. (NTIS No. PB96-194758)

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Hepler, K.R., P.A. Hansen and D.R. Bernard. 1994. Impact of oil spilled from the *Exxon Valdez* on survival and growth of Dolly Varden and cutthroat trout in Prince William Sound, Alaska, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 5; Restoration Study Number 90), Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Alaska.

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Swanton, C.O., T.J. Dalton, B.M. Barrett, D. Pengilly, K.R. Brennan, and P.A. Nelson. 1993. Effects of pink salmon (*Oncorhynchus gorbuscha*) escapement level of egg retention, preemergent fry, and adult returns to the Kodiak and Chignik management areas caused by the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 7B and 8B), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Alaska.

#### Fish/Shellfish 18

Haynes, E., T. Rutecki, M. Murphy, and D. Urban. 1995. Impacts of the *Exxon Valdez* oil spill on bottomfish and shellfish in Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 18), U.S. National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

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Freese, J.L. and C.E. O'Clair. 1995. Injury to crabs outside Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 22), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska. (NTIS No. PB96-194782)

#### Fish/Shellfish 27

Schmidt, D.C., K.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. Kind, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. 1993. Sockeye salmon overescapement, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 27), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Soldotna, Alaska.

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Geiger, H.J., W.D. Templin, J.S. Collie, and T.J. Quinn II. 1995. Run reconstruction and life history model, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 28), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau, Alaska.

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Dahlheim, M.E. and O. von Ziegeler. 1993. Effects of the *Exxon Valdez* oil spill on the abundance and distribution of humpback whales (*Megaptera novaeangliae*) in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 1), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, Washington. (NTIS No. PB96-194634)

#### Marine Mammal 2

Dahlheim, M.E. and C.O. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 2), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, Washington. (NTIS No. PB96-194642)

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Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in Prince William Sound, Alaska, and adjacent areas following the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 5, Restoration Study Number 73), Alaska Department of Fish and Game, Wildlife Conservation Division, Fairbanks, Alaska. (NTIS No. PB96-197116)

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Ballachey, Brenda. 1995. Biomarkers of damage to sea otters in Prince William Sound,

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Bodkin, J.K., D.M. Mulcahy, C.J. Lensink. 1996. Age-specific reproduction in female sea otters (*Enhydra lutris*) from Southcentral Alaska: analysis of reproductive tracts, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-4), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-5

Bodkin, J.L. and M.S. Udevitz. 1995. An intersection model for estimating sea otter mortality from the *Exxon Valdez* oil spill along the Kenai Peninsula, Alaska, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-5), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194980)

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Doroff, A.M., and A.R. DeGange. 1995. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-9), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194972)

#### Marine Mammal 6-10

Lipscomb, T.P., R.K. Harris, R.B. Moeler, J.M. Pletcher, R.J. Haebler, and B.E. Ballachey. 1996. Histopathologic lesions associated with crude oil exposure in sea otters, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-10), U.S Fish and Wildlife Service, Anchorage, Alaska.

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Lipscomb, T.P., R.K. Harris, A.H. Rebar, B.E. Ballachey, and R.J. Haebler. 1996. Pathological studies of sea otters, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-11), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-12

Monnett, C. and L.M. Rotterman. 1992. Movements of weanling and adult female sea otters in Prince William Sound, Alaska after the *TV Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-12), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-194899)

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Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of female sea otters in Prince William Sound, Alaska, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-13), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-195964)

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Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of sea otters oiled and treated as a result of the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-14), U.S Fish and Wildlife Service, Anchorage, Alaska. (NTIS No. PB96-196902)

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#### Restoration Study 47

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#### Restoration Study 60C

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#### Restoration Study 104A

Corbett, D.G. and D. Reger. 1994. Development of Alaska heritage stewardship program for protection of cultural resources at increased risk due to the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report*

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**Exxon Valdez Oil Spill Project Status Summary**  
**1993 Work Plan**  
**Quarter Ending September 30, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93002	Sockeye Salmon Overescapement	ADFG	Annual report (funded under 94258) peer reviewed; available to public at OSPIC.	Schmidt, D., et al. Sockeye salmon overescapement. Red Lake 1994 plankton indicate downward trend associated with increased sockeye salmon fry recruitment. May suggest increased smolt production in 1995 likely. Akalura Lake failed to meet escapement goals. Adult return to Red Lake accurately forecasted by smolt program. Kenai River adult return forecast with large bounds because of uncertainty of smolt production in 1990.	Project is continuation of FS27, 93002. Continued as 94258.
93003	Salmon Egg to Pre-emergent Fry Survival	ADFG NOAA	The results of this project will be presented in two reports (funded under 94191): (1) ADFG report available to public at OSPIC. (2) NOAA results included in report prepared under 94191. See 94191 for status.	(1) Sharr, S. and J.E. Seeb. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound. (2) See 94191. Oil exposures completed for 1992 and 1993 brood years. 1992 brood pink salmon died from bacterial kidney disease; spawning not possible. Precautions to ensure survival of 1993 brood have been taken. Persistence of elevated embryo mortalities in oiled streams in 1992 indicate possible genetic damage to wild pink salmon populations from the <i>Exxon Valdez</i> oil spill. Preliminary laboratory studies support the genetic hypothesis. Additional laboratory studies demonstrate dose response of pink salmon embryos when incubated in gravel exposed to crude oil from the <i>Exxon Valdez</i> .	Started in 1989 as FS2 and continued as R60C and 94191.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93006	Site Specific Archaeological Restoration	DOI/ NPS	REPORT (funded under 94007) OVERDUE.	Birkedahl, T., et al. 1993. Archaeological site monitoring and restoration.	Continued as 94007.
<p>Archaeological restoration assessments conducted at 14 sites in 1993 suggest that a majority of the archaeological vandalism that can either be directly or indirectly linked to the <i>Exxon Valdez</i> oil spill event occurred in 1989 before adequate constraints were put into place over the activities of oil spill clean-up personnel. Most vandalism took the form of "prospecting" for high yield sites. In 1993, only two of the 14 sites visited showed signs of continued vandalism and the link between this recent vandalism and the <i>Exxon Valdez</i> oil spill event remains highly problematical. Oil monitoring samples from the archaeological sites have not been processed as of this date, but oil was still visible to the naked eye in the intertidal zones of two of the 14 sites visited.</p>					
93012	Genetic Stock Identification of Kenai River Sockeye Salmon	ADFG	Draft final report (which also contains results of genetics component of 94255) submitted to Chief Scientist May 3, 1996; under peer review.	Genetic data were collected during 1992 and 1993 from spawning populations contributing to mixed-stock harvest of sockeye salmon in Cook Inlet. These data were used in a pilot study to estimate the component of Kenai River stocks harvested in mixed-stock areas of Upper Cook Inlet.	Began as R52. Continued as 94504. Spawning samples collected under 93015.



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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93015	Kenai River Sockeye Salmon Restoration	ADFG	Annual report peer reviewed; available to public at OSPIC	Tarbox, K., et al. Kenai River sockeye salmon restoration. Successful collection of baseline and fishery genetic samples. Successful in-season hydroacoustic survey of Upper Cook Inlet by subcontractor.	Began as R52 and continued as 94255. Genetic samples analyzed under 93012.
93016	Chenega Bay Chinook and Silver Salmon (NEPA Compliance)	ADFG	No report required (NEPA compliance only).		Continued as 94272. Also related to 93017.
93017	Subsistence Food Safety Survey and Testing	ADFG	Final report available to public at OSPIC.	Miraglia, R.A. 1995. Subsistence restoration project. ADF&G, Division of Subsistence, Anchorage, AK. First round of tests for hydrocarbon contamination of subsistence resources showed little or no contamination. Results of second round of testing are pending. The observations of abnormalities in the tested resources caused a shift in concerns of subsistence users from oil contamination to what effects these abnormalities have on these resources. A series of public meetings were held in communities to locate sites and species of concern.	Continued as 94279.
93024	Restoration of Coghill Lake Sockeye Salmon Stock	ADFG	Redraft of final report submitted to Chief Scientist May 21, 1996; under peer review.	Monitoring showed the need for modifying both the type and concentrations of fertilizer.	Continued as 94259 and 95259.
93032	Cold Creek Pink Salmon Restoration (NEPA Compliance)	ADFG	Project canceled.		R105

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**1993 Work Plan**  
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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93033	Harlequin Duck Restoration	ADFG	<p>The results of this project will be presented in two reports (funded under 94066):</p> <p>(1) Report on Afognak habitat assessment and PWS production survey peer reviewed and returned to PI November 14, 1995.</p> <p>(2) REPORT OVERDUE.</p> <p>Analyses of blood and physiological samples from 1993 collections not completed by UC-Davis) not received. This contract work is delinquent.</p>	<p>(1) Restoration monitoring of harlequin ducks in PWS and Afognak Island.</p> <p>Only 3 harlequin broods observed in western Prince William Sound; 14 in eastern Prince William Sound. Decreased numbers of harlequins molting in western Prince William Sound in July. Suspect incomplete gonadal development in pre-nesting western Prince William Sound harlequins.</p> <p>Blood/physiological analysis and hydrocarbon analyses in process. Harlequin breeding stream/nest site model in preparation. Harlequin breeding assessment completed on North Afognak Island.</p>	<p>Started in 1989 as B11 and continued as R71. 94427 and 96427 continue harlequin brood surveys.</p>
93034	Pigeon Guillemot Recovery	DOI	<p>Report (funded under 94506) available to public at OSPIC.</p>	<p>Sanger, G.A. and M.B. Cody. 1994. Survey of pigeon guillemot colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service, Anchorage.</p> <p>One hundred eighty-four colonies, concentrated in southwest Prince William Sound and at Naked Island, were identified. This colony survey confirmed that the present population of pigeon guillemots in Prince William Sound is 3,000 - 4,900.</p>	<p>Continued as 94173.</p>

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93035	Black Oystercatchers / Oiled Mussel Beds	DOI	REPORT OVERDUE. Draft report peer reviewed; returned to PI for revision January 3, 1996. Revised draft now expected December 1, 1996. Report also includes findings from R103.	Andres, B. 1993. Potential impacts of oiled mussel beds on higher organisms: black oystercatchers. US Fish and Wildlife Service, Anchorage, AK. Growth rates of oystercatcher chicks were lower on oiled than unoiled nest sites. Some aliphatic compounds were detected in 1992 fecal samples from oiled sites. Breeding pairs increased on oiled Green Island from 1992 to 1993 but decreased on Knight Island from 1991 to 1993.	Continued as 94020.
93036	Oiled Mussel Beds	DOI, NOAA	The results of this project will be presented in two reports: (1) DOI results will be included in report being prepared under 95090; see 95090 for status. (2) Annual report submitted to Chief Scientist October 6, 1995; undergoing peer review. Annual report available to public at OSPIC.	(1) See 95090. (2) Babcock, M. Recovery monitoring and restoration of oiled mussel beds in PWS, Alaska. In 1992 and 1993, mussels and sediments from 70 mussel beds in PWS were sampled. Sediments collected from 31 of the oiled beds had total petroleum hydrocarbon concentrations greater than 10,000 ng/g wet weight. The highest concentrations were in sediments collected from Foul Bay (62,258 +/- 1,272 ng/g total polynuclear hydrocarbons). Minimally intrusive site manipulation was conducted at three heavily oiled mussel beds. Preliminary evaluations indicate these methods were not effective in reducing petroleum hydrocarbons adjacent to manipulated areas. Along the Kenai and Alaska Peninsulas, 15 mussel beds were sampled--four of which were new sites--and four of these beds showed total petroleum hydrocarbons in excess of 5,000 ng/g wet weight.	Continued as 94090.

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93038	Shoreline Assessment	ADEC	Draft report peer reviewed; returned to PI for revision January 26, 1996. Expect to submit revised draft November 1996.	Piper, E., et al. 1993 shoreline assessment.  Surface oil has become stable. Subsurface oil has decreased substantially since 1991. Oiling is discontinuous throughout the study site.	
93039	Herring Bay Experimental and Monitoring	ADFG	Results will be presented in report being prepared under 95086; see 95086 for status.	Examination of dominant intertidal alga, <i>fucus gardneri</i> , has shown that larger plants were removed from intertidal in areas affected by spill/clean-up. Where <i>fucus</i> cover was reduced, abundance of ephemeral algae often increased. Populations of grazing invertebrates, e.g., limpets and periwinkles, showed reduced densities at oiled sites in upper intertidal. Initially, barnacle recruitment was lower in quadrats on tar-covered rocks than clean quadrats, but differences disappeared at most sites over time. <i>Fucus</i> germlings and filamentous algae continued to have lower densities and percent cover on oiled than non-oiled substrates. Recovery occurring in lower/middle intertidal zones and normal community interactions returning. Upper intertidal continues to exhibit damage; recovery may take additional 2-5 years.	Evolved from CH1A and R102 and continued as 94086.
93041	Comprehensive Monitoring	NOAA	Project discontinued.		

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93042	Killer Whale Recovery	NOAA	Final report available to public at OSPIC.	Dalheim, M.E. 1994. Assessment of injuries and recovery monitoring of Prince William Sound killer whales using photo-identification techniques. National Marine Mammal Laboratory, Seattle, WA. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the period 1989-1991. Despite considerable searching effort in PWS and Southeast Alaska, the missing whales have not been observed. Given the stability of resident pods, it is assumed the missing whales are dead. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, and 4.3% in 1991. Zero mortality occurred in 1992 and 1993. The adult annual mortality rate of killer whales is usually less than 2%. Annual pod mortality rates on the order of 20% are unprecedented for North Pacific killer whales.	Close-out/report writing funded under 94092.

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93043	Sea Otter Demographics and Habitat	DOI (NBS)	<p>The results of this project will be presented in three reports (funded under 94246):</p> <p>(1) Data on recovery of sea otter carcasses being presented in MM6 (#15).</p> <p>(2) Final report available to public at OSPIC.</p> <p>(3) Report on sea otter demographics available to public at OSPIC.</p>	<p>(1) See MM6(#15).</p> <p>(2) Bodkin, J.L. and M.S. Udevitz. 1993 trial aerial survey of sea otters in PWS, Alaska. 1994. NBS, Anchorage, AK.</p> <p>(3) Udevitz, M.S. , B.E. Ballachey, and D. L. Bruden. 1995. A population model for sea otters in western PWS. USNBS. Anchorage, AK.</p> <p>Aerial survey of sea otters in Prince William Sound completed summer 1993; estimated abundance is approximately 18,000. Age distribution of sea otter carcasses recovered in spring 1993 in western Prince William Sound is similar to prespill distribution. Age- and sex-specific survival rates generated from carcass data for sea otters in Prince William Sound.</p>	Report writing funded under 94246.
93045	Marine Bird / Sea Otter Surveys	DOI	Final report available to public at OSPIC.	<p>Agler, B.A., P.E. Seiser, S.J. Kindall and D.B. Irons. 1994. Marine bird and sea otter populations in Prince William Sound, Alaska: Population trends following the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Overall marine bird population estimates in Prince William Sound have not changed significantly since 1989, but were 41% lower than 1972-1973 estimates. Rates of increase of goldeneyes and surfbird populations were higher in the unoiled zone of Prince William Sound than in the oiled zone, whereas oystercatchers increased more rapidly in the oiled zone.</p>	Started as part of B2 and continued as 94159.

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93046	Habitat Use, Behavior, and Monitoring of Harbor Seals in PWS	ADFG	Final report (funded under 94064) available to public at OSPIC.	<p>Frost, K.J.* and L.F. Lowry. 1994. Habitat use, behavior, and monitoring of harbor seals in Prince William Sound, Alaska. ADFG</p> <p>Counts of seals at 25 trend sites in Prince William Sound were similar during pupping and molting in 1992 and 1993. However, 1993 pupping counts were 23% lower than in 1989. Molting counts were similar to 1989 postspill counts, but 27% lower than 1988 counts. Sixteen seals satellite-tagged since 1992 indicate that seals in central Prince William Sound haul out and feed near the same sites with little movement to other areas. Feeding usually occurs in depths of 100-200 meters, with a maximum recorded dive depth of 404 meters.</p>	<p>Started in 1989 as MM5, which was closed out as R73. Continued as 94064.</p>

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93047	Subtidal Monitoring	ADEC, ADFG, NOAA	The results of this project will be presented in three reports (funded under 94285): (1) NOAA sediments - Final report available to public at OSPIC. (2) ADEC microbiology - Final report available to public at OSPIC. (3) ADFG eelgrass - Final report available to public at OSPIC.	(1) Recovery of sediments in the subtidal sediment environment inside PWS. (2) Braddock, J. Microbiology of subtidal sediments: monitoring and microbial populations. (3) Jewett, S., et al. The effects of the <i>Exxon Valdez</i> oil spill on shallow subtidal communities in PWS 1989-93. As a follow-up to previous studies from 1989-1991, the numbers and activity of oil-degrading microorganisms were measured in sediments collected in 1993. Preliminary results suggest some contamination remains in subtidal sediments. However, generally very low numbers were found where visible oil was present (e.g., subsurface sediments, Northwest Bay). Analysis of 1993 eelgrass data complete. Several infaunal and epifaunal taxa more abundant in oiled bed sites than control sites. Amphipods less abundant in oiled sites. Sea urchins are more abundant. <i>Hemosiderosis</i> in fishes from oiled sites.	Started as ST1A and continued as 94285. Report writing under 94285.
93049	Monitor Murre Colony Recovery	DOI/FWS	Final report available to public at OSPIC.	Roseneau, D. 1995. Common murre Restoration monitoring in the Barren Islands, Alaska, 1993. U.S. Fish and Wildlife Service, AK Maritime NWR, Homer, AK. Murre productivity in the Barren Islands was 0.4 - 0.6 chicks per nest site in 1993, up from near zero in 1989. Population counts on plots were similar to or higher than in previous postspill years.	Started as R11 and continued as 94039. (Formerly in EVOS database as 93022.)



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93051	Habitat Information for Anadromous Streams and Marbled Murrelets	ADFG, DOI, USFS	<p>The results of this project will be presented in 5 reports (funded under 94505):</p> <p>(1) ADFG Stream Habitat Assessment/PWS &amp; Lower Kenai- Final report available to public at OSPIC.</p> <p>(2) USFS Habitat Protection Info. for Channel Type Classification Study- findings included in report prepared under 95505B. See 95505B for results.</p> <p>(3) DOI Pilot Study on Capture and Radio Tagging of Murrelets in PWS- Final report accepted by Chief Scientist; not yet at OSPIC.</p> <p>(4) DOI Information Needs for Habitat Protection: Marbled Murrelet Habitat Identification -Final report available to public at OSPIC.</p> <p>(5) USFS Upland Nesting Habitat of Marbled Murrelet - Final report available to public at OSPIC.</p>	<p>(1) Sundel, K., et al. 1994. Stream habitat assessment project: Prince William Sound and Lower Kenai Peninsula. ADFG</p> <p>(2) See 95505B.</p> <p>(3) Burns, R.A., et al. 1994. Pilot study on the capture and radio tagging of murrelets in PWS, AK, July and August, 1993. U.S. Fish and Wildlife Service, Anchorage, AK.</p> <p>(4) Kuletz, K.J., et al. Information needs for habitat protection: marbled murrelet habitat identification. 1994.</p> <p>(5) Characterization of the upland nesting habitat of the marbled murrelet in the <i>Exxon Valdez</i> spill area. Late season surveys, sites at the heads of bays, low elevations, high percentages of forest cover, and large trees were all consistent predictors of high murrelet activity. Radar performed better than humans in detecting murrelets and was cheaper than boat-based or ground-based surveys by humans. About 995 km of shoreline and 117 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on the lower Kenai Peninsula and in Prince William Sound, resulting in discovery of 186 anadromous streams totaling about 57 km. Stream habitat parameters were collected along all streams, upper extents of anadromous distribution were documented and streams were mapped by GIS.</p>	<p>Evolved from R15 and R47. Also related to 93045. Project closeout in FY 94 as 94505 and in FY95 as 95505B.</p>

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93053	Hydrocarbon Database	NOAA	No report required.	Continuing project with updating and quality control of hydrocarbon data. Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	Continued as 94290. This project supports most restoration projects.
93057	Damage Assessment GIS	ADNR	No report required.	Cataloged and plotted over 160 maps for public access at OSPIC. Provided mapping and database support for damage assessment studies.	Supported numerous damage assessment projects, including B11, FS13, AW1, and CH1A.
93059	Habitat Identification Workshop	USFS	No report required.	Identified parcels of non-public land containing critical habitat necessary for the recovery of injured resources and services.	
93060	Accelerated Data Acquisition	USFS	No report required.	Collected and organized existing resource data needed for the analysis of private lands in the oil spill area.	
93062	Restoration GIS	ADNR	No report required.	Provided technical mapping and database support for restoration projects. Generated spill area map and land status maps for Kachemak Bay, Seal Bay, and Eyak lands in support of habitat protection data analysis and negotiations. Plotted maps to provide public access to EVOS information.	Supported numerous restoration projects, including 93038, 93063, 93064 and R47.

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93063	Anadromous Stream Surveys	USFS	Project is data analysis and report writing for anadromous stream portion of R105. See R105 for status.	See R105.	Started as R105 and continued as 94139.
93064	Imminent Threat Habitat Protection	ADNR	No report required.	See "Opportunities for Habitat Protection/Acquisition" (2/16/93) and "Comprehensive Habitat Protection Process; Large Parcel Evaluation & Ranking, Volume I" (11/30/93). Imminent Threat Evaluation and the first round of Large Parcel Evaluation were completed. \$7.5 million from settlement funds was combined with \$14.5 million from other sources for the purchase of private inholdings in Kachemak Bay. \$29,950,000 was committed from the most recent court request for the initial payment for purchase of private land near Seal Bay on Afognak Island. The total purchase price of this transaction is \$38,700,000 with the balance to be paid in three annual installments.	
93065	Prince William Sound Recreation	USFS	Report (funded under 94217) submitted to OSPIC; undergoing formatting review.	Menefee, W. and S. Hennig. 1994. USFS. Prince William Sound recreation project. Recreation Injury Statement (10/93) was incorporated into the Draft Restoration Plan. Final report includes a prioritized list of projects and other recommendations for restoration of recreation in Prince William Sound.	Close-out/report writing funded under 94217.

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93066	Alutiiq Archeological Repository	ADEC	No report required.	Opening ceremony held May 13, 1995.	
93067	Pink Salmon Coded Wire Tag Recovery	ADFG	Final report available to public at OSPIC.	Sharr, S., and Peckham, C.J. 1993. Coded wire tag recoveries from pink salmon in PWS fisheries. Reduced commercial exploitation of damaged wild pink salmon populations through timely inseason estimates of hatchery and wild contributions to harvest. Accurate and timely stock composition estimates were used by fisheries managers to justify restriction of fishing fleet to areas where interception of damaged wild populations in mixed-stock fisheries could be minimized.	Started as FS3 and continued as R60A, 94184 (report preparation ) and 94320B.
93068	Non-Pink Salmon Coded Wire Tag Recovery	ADFG	1993 results will be included in report being prepared under 94137. See 94137 for status.	See 94137.  Timely and accurate inseason estimates of hatchery and wild stock contributions to commercial harvest for improved management of wild stocks in mixed-stock fisheries.	Evolved from FS3; continued as 94137.
93AD	Administrative Director's Office		No report required.		
93FC	Financial Committee		No report required.		
93RT	Restoration Team Support		No report required.		

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94007	Site Specific Archaeological Restoration	ADNR	The results of this project will be presented in two reports (funded under 95007A): (1) Site protection plan available to public at OSPIC. (2) Annual report peer reviewed; available to public at OSPIC.	(1) Bittner, J.E. and D.R. Reger. 1995. The 1994 EVOS report, spill area site and collection plan. ADNR, Anchorage, Alaska. (2) Reger, D. 1994. Archaeological site monitoring and restoration.  Monitoring: ADNR monitored seven sites on Shuyak Island and Outer Kenai Coast (including three at Nuka Island) and found oil but no evidence of new disturbance. USFWS monitored six sites on Afognak Island and found no indication of new vandalism. NPS monitored two sites, McArthur Pass in Kenai Fjords National Park and Cape Gull on the Katmai coast, and found no new damage. Data Recovery: USFS began restoration of two sites in PWS: SEW-440 and SEW-448. Site Protection Plans: ADNR compiled information about the need for site protection, with emphasis on adequate curation of collections in the spill area.	Continuation of 93006.
94020	Black Oystercatcher Interaction with Intertidal	DOI	Project is close-out/report writing for 93035. See 93035 for status.	See 93035.	Close-out/report writing for 93035.

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94039	Common Murre Population Monitoring	DOI/FWS	Revised draft of final report (funded under 95039) submitted to Chief Scientist October 4, 1996; under peer review.	<p>Roseneau, D.G., A.B. Kettle, and G.V.Byrd. Common murre restoration monitoring in the Barren Islands, Alaska in 1994. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK</p> <p>In 1994, complete censuses and replicate index plot counts were made at the East Amatuli Island-Light Rock and Nord Island murre colonies. Although a marginally significant increasing trend was found over the 6-year post-spill period at one 2-p index area at East Amatuli Island-Light Rock, no significant trends were detected the other 1989-1994 East Amatuli Island-Light Rock and Nord Island population data sets. Productivity was high (0.7 fledglings per nest site) and within normal bounds, compared with other colonies.</p>	Begun as R11; continued as 93022. Close-out/report writing under 95039.
94041	Introduced Predator Removal from Islands	DOI/FWS	Annual report peer reviewed; available to public at OSPIC.	<p>Bailey, E. 1995. Introduced predator removal in the Shumigan Islands. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK.</p> <p>Removed 33 arctic foxes from Simeonof Island (no more believed remaining); removed 3 arctic foxes from Chernabura Island (population appeared to be dying out naturally). Censused populations of black oystercatchers and pigeon guillemots on above islands as well as on nearby islands with no foxes (controls). No oystercatcher nests found on fox islands; densities of both oystercatchers and guillemots are much less on fox islands than on fox-free ones. Recovery of nesting populations of oystercatchers and guillemots is expected to begin in 1995 on Simeonof and Chernabura islands.</p>	

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94043A1	Eshamy River Restoration (W. PWS)	USFS	Project discontinued.		
94043A2	Gumboot Creek Restoration (W. PWS)	USFS	No report required (NEPA only).		NOTE: Also known as Gunboat Creek.
EA completed and decision notice signed July 27, 1995.					
94043A3	Stream No. 508 Restoration	USFS	Project discontinued.		
94043A4	Stream No. 509 Restoration (W. PWS)	USFS	Project discontinued.		
94043A5	Otter Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
EA completed and decision notice signed June 28, 1995.					

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94043A6	Miners Creek/Lake Restoration (N. PWS)	USFS	Project discontinued.		
94043A7	Shrode Creek/Lake Restoration (W. PWS)	USFS	No report required (NEPA only).		
EA completed and decision notice signed June 28, 1995.					
94043B1	Sockeye Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
EA finalized and signed. EA concluded that Sockeye Creek is not a cost effective site for this project at this time.					
94043B2	Rocky Creek/Bay Restoration (Montague)	USFS	Redraft of final report submitted to Chief Scientist April 30, 1996; under peer review.		

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94064	Harbor Seal Habitat Use and Monitoring	ADFG	Annual report (which includes results of 94320F) peer reviewed; available to public at OSPIC. NOTE: Project also includes report writing funds for 93046.	<p>Frost, K., et al. 1995. Habitat use, behavior, and monitoring of harbor seals in PWS, AK. ADF&amp;G.</p> <p>Twenty-six seals caught and sampled September 1994 (blood, whiskers for stable isotopes, blubber for fatty acids, skin for genetics, measurements). Twelve of these instrumented with satellite-linked time-depth recorders (6 adults, 6 subadults). Aerial surveys conducted during molting period in September. Preliminary survey analysis suggests no marked increase or decrease since 1993. Eight SLTDRs functioning on 11/10/94. Most seals remain local in PWS; one subadult in Gulf of Alaska.</p>	Started as MM5; continued as R73, 93046, and 95064.
94066	Harlequin Duck Recovery Monitoring	ADFG	Project is close-out/report writing for 93033. See 93033 for status.	See 93033.	Close-out/report writing for 93033.
94086	Herring Bay Experimental and Monitoring Studies	ADFG	Annual report peer reviewed; available to public at OSPIC.	<p>Highsmith, R.C., et al. Herring Bay monitoring and restoration studies. UAF/ADF&amp;G</p> <p>Four field trips were conducted in 1994 for data and sample collections. Data was collected for population dynamics, barnacle recruitment, and water circulation studies.</p>	Population dynamics portion of 93039.
94090	Mussel Bed Restoration and Monitoring	NOAA	Annual report peer reviewed; available to public at OSPIC.	<p>Babcock, M.M., P.M. Harris, S.D. Rice, R.J. Bruyere, and D.R. Munson. 1995. Recovery monitoring and restoration of oiled mussel beds in Prince William Sound, AK. NOAA/NMFS, Juneau, AK</p> <p>Twelve mussel beds were cleaned and restored in 1994.</p>	CH1B and 93036. Continued as 95090.

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94092	Killer Whale Recovery Monitoring	NOAA	Project is close-out/report writing for 93042. See 93042 for status.	See 93042.	Continuation of 93042.
94102	Marbled Murrelet Prey and Foraging Habitat in Prince William Sound	DOI/FWS	Final report (funded under 95102) accepted by Chief Scientist. Not yet at OSPIC.	Kuletz, K.J., D.K. Marks, R. Burns, and L. Prestash. Marbled murrelet foraging patterns and habitat use during the breeding season in PWS.  Forty-seven murrelets were radio-tagged. Foraging ranges were obtained by tracking birds with boats and planes. Birds foraged up to 60 kms. from their nests (average 10 km.). The average distance from shore was 0.6 km.	R15, 93051, 95102
94110	Habitat Protection - Data Acquisition and Support	ADNR	No report required.	See Habitat Protection Working Group, "Comprehensive Habitat Protection Process; Large Parcel Evaluation and Ranking" Volumes I and II (November 2, 1994 Supplement).	Close-out under 95110-CLO.
94126	Habitat Protection and Acquisition Fund	ADNR	No report required.		94110

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94137	Stock Identification of Chum, Sockeye, Chinook, and Coho in PWS	ADFG	Redraft of final report submitted to Chief Scientist August 14, 1996. (Report is funded under 95137 and incorporates results of 93068.)	Scanned approximately half a million sockeye salmon and 1/3 million chum salmon in PWS for tags. Results of sockeye tag recoveries were used to manage fisheries in western PWS. Interception of Coghill Lake-bound wild fish was kept to a minimum.	Evolved from FS03; continued as 93068 and 95137.
94139A1	Waterfall Creek Bypass Instream Restoration	ADFG	No report required (project carried forward as Project 95139A1).		94043, carried forward as 95139A1
94139A2	Port Dick Spawning Channel	ADFG	No report required (project carried forward as 95139A2).		
94139B1	Otter Creek Bypass Instream Restoration	USFS	Annual report peer reviewed; available to public at OSPIC.	Wedemeyer, K., et al. 1995. Instream habitat and stock restoration for salmon, Otter Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK	95139B
				Otter Creek bypass rehabilitation completed.	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94139B2	Shrode Creek Bypass Instream Restoration	USFS	Annual report peer reviewed; available to public at OSPIC.	Wedemeyer, K., et al. 1995. Stream habitat and stock restoration for salmon, Shrode Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK  Shrode Creek bypass renovation completed.	95139B
94139C1	Montague Island Chum Instream Restoration	USFS	Annual report peer reviewed and returned to PI for revision April 19, 1996.	Schmid, D., et al. 1995. Montague Island chum salmon restoration. USDA Forest Service, Chugach N.F., Cordova, AK  Project completed for three streams on Northern Montague Island. This project completed 32 structures and 15 acres of thinning.	95139C1
94139C2	Lowe River (6.5 Mile) Instream Restoration	ADFG	No report required (project carried forward as Project 95139C2).		95139C2
94159	Marine Bird & Sea Otter Boat Surveys	DOI	Final report available to public at OSPIC.	Agler, B.A., S.J. Kendall, P.E. Seiser, and D.B. Irons. 1995. Marine bird and sea otter abundance of PWS, Alaska: Trends following the T/V <i>Exxon Valdez</i> oil spill.  Estimated 320,470 plus-or-minus 63,640 marine birds in PWS in March 1994. Goldeneye and merganser populations may still be showing effects from oil spill. They are both increasing faster in the unoiled area than in the oiled area.	Began as B2; continued as 93045.

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94163	Forage Fish Influence on Recovery of Injured Species	NOAA, ADFG	<p>The results of this project will be presented in two reports:</p> <p>(1) <u>NOAA</u>: Annual report peer reviewed; available to public at OSPIC.</p> <p>(2) <u>ADFG</u>: Annual report peer reviewed; available to public at OSPIC.</p>	<p>(1) Tyler, A., et al. Forage fish study in PWS, AK. UAF/NMFS. Appendix by B. Ostrand, USFWS/DOI.</p> <p>(2) Willette, M., et al. Forage fish influence on recovery of injured species: forage fish diet overlap.</p> <p><u>NOAA</u>:</p> <p>August cruise: (a) Hydroacoustic data showed fish schools mainly in the more shallow water regions near the bottom; fish appeared absent from mid-water layers over the deep passages.</p> <p>November cruise: (a) Temperature-depth profiles for open areas of PWS showed surface temperature 7.0C, warming to 9.0C at 50m depth. Water cooled to 5.0C with further increase in depth. Salinity gradually increased through this depth range, indicating little mixing of the water column and that cooling was occurring from the surface downward due to cold air temperatures. Over the shallow shelf areas the profiles were different, being at 8.0C and mixed to 70m. (b) Five stations were sampled for invertebrate forage species, with euphausiids the abundant crustacean at most stations. (c) Hydroacoustic analysis showed fish mainly located above the temperature maximum at depths of 20 to 40 meters (net sampling showed these fish were young herring mixed with young pollock). Hydrographic data indicated fish aggregations were at temperatures of 7.0 to 7.5C. A second layer of fish was seen near the bottom (likely adult pollock).</p> <p><u>ADFG</u>: approximately 1,500 stomach samples collected for analysis of diet overlap. Found Pacific herring, walleye pollock, and juvenile chum salmon common and widespread throughout western PWS.</p>	<p>Integrate with Projects 94320 (PWS System Investigation), 94102 (Murrelet Prey), and 94173 (Pigeon Guillemot).</p>
94165	Herring Genetic Stock Identification in Prince William Sound	ADFG	Project deferred to FY 95 (95165).		95165

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94166	Herring Spawn Deposition and Reproductive Impairment	ADFG, NOAA	The results of this project will be presented in two reports: (1) ADFG annual report peer reviewed; available to public at OSPIC. (2) NOAA annual report peer reviewed; available to public at OSPIC.	(1) Wilcock, J.A., E.D. Brown and E. Debevec. Herring spawn deposition and reproductive impairment. (2) Carls, M.G., S.D. Rice, and R.E. Thomas. 1995. Impact of exposure of adult pre-spawn herring ( <i>Clupea harengus pallasii</i> ) on subsequent progeny. NOAA/NMFS, Juneau, AK.  Adult herring biaccumulated hydrocarbons, including ovarian tissue and ova. Adults were stressed by oil when VHS was present; VHS prevalence was correlated with PAH concentration. Eggs and larvae were not impacted by parental exposure to hydrocarbons. Factors unaffected included egg fertility, time of hatch, survival, larval stage at hatch, swimming ability, morphology, chromatid separation, and number of mitotic figures.	Coordinating with USFS regarding avian predation (94320Q).
94173	Pigeon Guillemot Recovery Monitoring	DOI/ FWS	Final report available to public at OSPIC.	Hayes, D. L. 1995. Recovery monitoring of pigeon guillemot populations in PWS, Alaska. USFWS, Anchorage, AK.  Found evidence of predation on eggs and chicks on Naked Island and abandonment of eggs on Jackpot Island. On Naked Island, gadids were much more prevalent and sandlance much less prevalent in the diet of chicks in 1994 than in 1979-81. Herring or smelt accounted for ca. 32% of prey items delivered to chicks at Jackpot Island, but only ca. 1% at Naked Island.	Continued from 93034.
94184	Coded Wire Tag Recoveries from Pink Salmon in PWS	ADFG	Project is close-out/report writing for 93067. See 93067 for status.	See 93067.	Began as FS3. Continued as R60A, 93067, and 94320B.

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94185	Coded Wire Tagging of Wild Pinks for Stock Identification	ADFG	Project discontinued.		
94191	Oil Related Egg and Alevin Mortalities	ADFG, NOAA	<p>The results of this project will be presented in two reports:</p> <p>(1) ADFG annual report peer reviewed; PI responding to peer review comments -- not yet at OSPIC.</p> <p>(2) NOAA annual report peer reviewed; available to public at OSPIC.</p> <p>(NOTE: Project also includes report writing funds for R60C and 93003.)</p>	<p>(1) Seeb, J.E., et al. Oil related egg and alevin mortalities. ADF&amp;G</p> <p>(2) Heintz, R.A., S.D. Rice, and J.W. Short. 1995. Injury to pink salmon eggs and pre-emergent fry incubated in oiled gravel (laboratory study). NOAA/NMFS, Juneau, AK</p> <p><u>ADFG</u> - Collected gametes from 8 controlled and 8 oiled streams. These eggs are now being incubated and will be analyzed in 1995.</p> <p><u>NOAA</u> - 1992 brood died from bacterial kidney disease. 1993 brood emerged from incubators by 5/15/94. 18,000 fish were coded wire tagged and released May 1994; 14,000 fish were retained for PIT tagging later in the summer. Dose-related differences in growth and size of 1992 brood year observed in October 1993 were as apparent in April 1994. Embryo survival to the development of the eye and emergence from substrate were measured in 1993 brood year, and clear relationship was observed between dose and survival to both developmental stages. During emergence period, inspected over 50,000 newly emerged fry for visible lesions and observed a dose relationship with the proportion of fish displaying edema.</p>	<p>Began as FS02 and R060C; continued as 93003.</p>
94199	Institute of Marine Science - Seward Improvements	ADFG	No report required.		Continued as 95199-CLO.

Record of Decision signed by DOI, DOA (USFS), and NOAA October 31, 1994.  
Capital funding approved by Trustee Council November 2, 1994, subject to Executive Director's approval.

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94217	Prince William Sound Area Recreation Implementation	USFS	Project is close-out/report writing for 93065. See 93065 for status.	See 93065.	Close-out of 93065.
94244	Harbor Seal and Sea Otter Co-op Subsistence Harvest Assistance	ADFG	Annual report peer reviewed; available to public at OSPIC. (NOTE: Report also contains results from 95244.)	Fall, J. 1995. Harbor seal ( <i>Phoca vitulina</i> ) and sea otter ( <i>Enhydra lutrus</i> ) cooperative subsistence harvest assistance. ADF&G  A harbor seal/sea otter restoration workshop took place in Anchorage December 2, 1994. It was attended by more than thirty people, including representatives from eight communities which use marine mammals for subsistence. A second workshop took place on March 2, 1995.	Continued as 95244.
94246	Sea Otter Recovery Monitoring	DOI	Project is close-out/report writing for 93043. See 93043 for status.	See 93043.	Close-out/report writing for 93043.
94255	Kenai River Sockeye Salmon Restoration	ADFG	The results of this project will be presented in two reports: (1) Annual report peer reviewed; available to public at OSPIC. (2) Results of genetics component of project contained in report being prepared under Project 93012. See 93012 for status.	(1) Tarbox, K.E., R.Z. Davis, L.K. Brannian, and S.M. Fried. 1995. Kenai River sockeye salmon restoration. ADF&G, Soldotna, AK. (2) Seeb, J. See 93012.	Began as R53; continued as 93012 and 93015.

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94258	Sockeye Salmon Overescapement	ADFG	Annual report peer reviewed; available to public at OSPIC. NOTE: Project also includes report writing funds for 93002.	Skilak weight of fall predictive on both escapements and fall fry abundance. 1994 fall fry had low abundance and weight. Lipid comparisons of similar length fall fry from Tustumena and Skilak indicated Skilak fall fry entered winter in poor condition in 1993. 1995 adult return needed to define magnitude and duration of reduced sockeye production.	Started as FS27; continued as 93002 and 95258.
94259	Coghill Lake Sockeye Salmon Restoration	ADFG	Annual report peer reviewed; available to public at OSPIC.	Edmundson, J.A., G.B. Kyle, and S.R. Carlson. 1995. Restoration of Coghill Lake sockeye salmon: 1994 annual report on nutrient enrichment restoration. ADF&G, Soldotna, AK.  Estimated 900,000-1,800,000 smolts outmigrated this year. Escapement approximately 7,200 adults. Response of phytoplankton to liquid fertilizer applications suggests fertilizer is not being lost to the anaerobic layer, but is actual improving the productivity of Coghill Lake.	Began as 93024.
94266	Shoreline Assessment and Oil Removal	ADEC, DOI/NBS	The results of this project will be presented in two reports: (1) <u>DOI/NBS</u> : Draft final report peer reviewed and returned to PI for revision June 14, 1995. Due date for submission of redraft extended to October 30, 1996. (2) <u>ADEC</u> : Final report accepted by Chief Scientist; not yet at OSPIC.	(1) Irvine, G. NBS/DOI. Fate and persistence of oil stranded on Gulf of Alaska shorelines during EVOS. (2) Munson, D. ADEC. Shoreline assessment and oil removal.	

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94272	Chenega Chinook Release Program	ADFG	Annual report peer reviewed; available to public at OSPIC.	50,300 chinook smolts released at Crab Bay on 5/27/94. Chenega residents reared and fed smolts in net pens prior to release.	Continuation of 93016.
94279	Subsistence Food Safety Testing	ADFG	Final report peer reviewed and returned to PI for revision June 12, 1996.	Miraglia, R. Subsistence restoration project: food safety testing.  Test results on final fish and shellfish samples received from NMFS lab. All results so low as to be within margin of error for tests. Seal samples from Tatitlek and duck samples from Chenega Bay were collected by ADFG with assistance from local subsistence hunters. Test results found hydrocarbon contamination was at background levels.	Continuation of 93017.
94285	Subtidal Sediment Recovery Monitoring	NOAA	Annual report peer reviewed; available to public at OSPIC. (NOTE: Project also includes report writing funds for 93047.)	O'Clair, C.E., J.W. Short, and S.D. Rice. 1995. Subtidal monitoring: recovery of sediments in the Northwestern Gulf of Alaska. NOAA/NMFS, Juneau, AK.	Continuation of ST2A and 93047. Continued as 95106.
94290	Hydrocarbon Data Analysis and Interpretation	NOAA	No report required.	In FY94, 2,742 samples were received and several hundred were submitted for analysis.	Continuation of ST8 and 93053. Continued as 95290.

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94320A	Salmon Growth and Mortality	ADFG	Consolidated annual report peer reviewed; available to public at OSPIC.	Growth rate of juvenile pink salmon in 1994 in PWS slightly above average compared to 1989-1993 period.	
94320B	Coded Wire Tagging Recovery-PWS Pinks	ADFG	Annual report peer reviewed; available to public at OSPIC.	Sharr, S., et al. 1994. Coded wire tag recoveries from pink salmon in PWS salmon fisheries. ADF&G.	Continued as 96186.
				Common property fisheries: 26.2 million caught, 4.4 million scanned (17%), 3,600-4,000 tags recovered. Hatchery revenue sales: 10.4 million caught, 2 million scanned (19%), 1,600 tags recovered. Scanned close to 100% of brood stock from PWS salmon hatcheries. Used results of in-season analysis, based on detection of tags, for critical management decisions regarding fishing areas and times. Ability to detect wild stock shortfalls and high abundance of hatchery fish contributed to meeting restoration goals.	
94320C	Otolith Mass Marking of PWS Pink Salmon	ADFG	Annual report peer reviewed; available to public at OSPIC.		Continued as 96188.
				Feasibility study initiated at PWSAC Cannery Creek Hatchery. Approximately 50,000 fry were immersed for different lengths of time and at different temperatures to determine optimum treatment for marking effectiveness and survival. Completed examination of otoliths subjected to varying levels of oxytetracycline and varying temperatures at ADFG lab. Marking was not successful for any of the treatment groups.	

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94320D	Pink Salmon Genetics	ADFG	Results of this project are included in report being prepared under Project 95320D. See 95320D for status.	In ADFG lab, DNA data show upstream and intertidal spawners in the same stream genetically differ. Have also found that mainland and island populations genetically differ.	94184, 94191
94320E	Salmon Predation	ADFG	See 94320A.	Walleye pollock, adult pink salmon, Pacific herring, and dolly varden trout identified as important predators on juvenile salmon in Prince William Sound.	
94320F	Harbor Seals-Trophic Interactions	ADFG	Data/findings integrated into report prepared on 94064. See 94064 for status.	See 94064.	94064. Combined with 95064 for 1995.
				Preliminary fatty acid analysis of blubber samples indicates several distinct feeding patterns. Some seals appear to eat plankton-eating fishes and others piscivorous fishes/prey such as pollock and squid. Stable isotope analysis indicates different feeding patterns for subadults and most adults. Adult females in particular show a strong annual shift in prey.	

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94320G	Phytoplankton and Nutrients	ADFG	See 94320A.		
94320H	Role of Zooplankton in PWS Ecosystem	ADFG	See 94320A.		95320H
				Time series of zooplankton biomass tracks predation on 0-class fish in April, May, and June.	
94320I	Food Web Dependencies in PWS Ecosystem/Stable Isotopes	ADFG	See 94320A.		
				<u>Food Web of Fishes</u> - Conducted isotopic analysis of approximately 500 samples (i.e, roughly 2,000 isotopic determinations). <u>Marine Mammal Trophic Energetics</u> - Conducted isotopic analysis of vibrissae of 23 seals, roughly 30 samples per whisker.	
94320J	Information Systems and Model Development	ADFG	See 94320A.		

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94320K	PWSAC-Experimental Fry Release	ADFG	See 94320A.		
<p>Adult pink salmon will return in summer 1995 as a result of 1994 fry release. Marine survivals will be estimated based on coded wire tag data. Rearing and release strategies will be compared and differences in marine survival evaluated between rearing and release groups.</p>					
94320L	PWSAC-Experimental Manipulation	ADFG	Final report available to public at OSPIC.		
94320M	Physical Oceanography in PWS and Gulf of Alaska	ADFG	See 94320A.		
94320N	Nearshore Fish	ADFG	See 94320A.		
94320P	SEA Program: Program Management	ADFG	See 94320A.		All subprojects of 94320.

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94320Q	Avian Predation on Herring Swan	USFS	See 94320A.	Bishop, M.A. 1995. Avian predation on herring spawn. Copper River Delta Institute, USDA Forest Service, Cordova, AK	95320Q
94320S	Disease Impacts on Herring	ADFG	Annual report peer reviewed; available to public at OSPIC.	<i>Ichthyophonus hoferi</i> , viral hemorrhagic septicemia virus, and other causes of morbidity in Pacific herring spawning in PWS in 1994. ADF&G.  Because of the important of <i>Ichthyophonus</i> in herring morbidity in 1994, all previous Pacific herring sampled from PWS and submitted to UC Davis (1989, 1990, 1991, 1992) were re-screened for <i>Ichthyophonus</i> . Prevalence in these samples was never more than 15% and was distributed fairly evenly among liver, kidney, and spleen, but was never in the olfactory nares.	
94417	Waste Oil Disposal Facilities	ADEC	No report required (project carried forward as 95417).		95417
94422	Environmental Impact Statement for the Draft Restoration Plan	USFS	No report required.		Continued as 95422.
				Final EIS released September 30, 1994. Notice of Availability in Federal Register, Vol. 59, No. 186, p. 49232, dated 9/27/94 and Vol. 59, No. 189, p. 49926, dated 9/30/94. Record of Decision (ROD) signed October 31, 1994. Copies of FEIS available through OSPIC.	

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94423	Oil Spill Public Information Center (OSPIC)	ALL	No report required.	<p>During the quarter ending 9/30/96, OSPIC staff received 298 visitors (including the 10,000th visitor on July 30th), responded to 638 requests for information (of which 54 were sent via e-mail from the Web Home Page), processed 69 interlibrary loans, loaned 230 items, and distributed 788 documents, and acquired 10 books, 17 reports, 5 maps, 2 videos, and 1 journal. 454 documents were added to the Trustee Council Administrative Record and 2 Marine Ecosystem posters were sold. OSPIC staff received 2 NRDA/Restoration Project final reports for format review, approved 11, and distributed final copies of 15. OSPIC staff received 12 annual reports for format review, approved 12, and received final copies of 19. From 6/1/96 through 9/30/96, at least 4,673 people used the OSPIC World Wide Web Home Page (tracking software was inoperable during a portion of this quarter -- actual Home Page usage is higher).</p>	
94424	Restoration Reserve	ALL	No report required.	<p>The Restoration Reserve was formally established by the Court Registry Investment System on February 15, 1996. The reserve consists of securities structured to mature annually on November 15 beginning in 1997 and ending in the year 2002. To date, a total of \$36 million has been placed in the Reserve. The Trustee Council approved the transfer of another \$12 million on August 29, 1996. Pursuant to the approval motion, the transfer will be made at such time as the Executive Director determines that funds are available.</p>	

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94425	Marine Mammal Book	NOAA	No report required.	See Marine mammals and the <i>Exxon Valdez</i> . Loughlin, T.R., editor. 1994. Academic Press, Inc. 395 pages.	
				Book printed and for sale by Academic Press.	
94427	Experimental Harlequin Duck Breeding Survey	ADFG	Annual report peer reviewed; available to public at OSPIC.	Rosenberg, D.H. 1995. Experimental harlequin duck breeding survey in Prince William Sound, AK. ADF&G, Anchorage, AK.	B11, R71, 93033, 94066, 95427, and nearshore ecosystem projects.
94428	Subsistence Restoration Planning and Implementation	ADFG	Final report (which also includes results from 95428) available to public at OSPIC.	Fall, J. ADF&G. Subsistence restoration planning and implementation.	
94504	Genetic Stock Identification of Kenai River Sockeye	ADFG	Project is close-out/report writing for 93012. See 93012 for status.	See 93012.	Close-out/report writing for 93012.
94505	Information Needs for Habitat Protection	USFS	Findings included in report prepared under 95505B. See 95505B for status.	See 95505B.	Close-out of 93051. 95505B.

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94506	Pigeon Guillemot Recovery	DOI	Project is close-out/report writing for 93034. See 93034 for status.	See 93034.	Report writing for 93034.
94507	Symposium Proceedings Publication	NOAA	The 926-page EVOS Symposium Proceeding is published with distribution beginning September 1996. The publisher, American Fisheries Society (AFS), will maintain sales records which will be supplied to the PI.	Rice, S.D., R.B. Spies, D.A. Wolfe, and B. A. Wright, editors. 1996. Proceedings of the <i>Exxon Valdez</i> oil spill symposium. American Fisheries Society Symposium 18, Bethesda, Maryland.  Proceedings include 61 manuscripts in the following topic areas: fate and toxicity (8 manuscripts), intertidal (10 manuscripts), treatment effects (5), subtidal (3), herring (2), salmon (12), other fish (5), birds (8), mammals (2), archaeology (1), subsistence (4), human impacts (2).  NOTE: In FY 96, the Trustee Council approved an additional \$42,000 for the completion of the proceedings (Project 96507).	Continued as 96507.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95001	Condition and Health of Harbor Seals	ADFG Castellini, UAF	Annual report submitted to Chief Scientist April 11, 1996; under peer review.	Castellini, J.M., N.J. Meiselman, and M.A. Castellini. Understanding and interpreting hematocrit measurements in pinnipeds. Marine Mammal Science 12(2):251-264. Hematocrit measurements of pinnipeds were 4-15% higher w utilizing clinical Coulter counter methods as opposed to the more direct method of microcentrifugation. Manual restraint of animals, isoflourane anesthesia, and developmental states also affected hematocrit measurements in pinnipeds. Thus, modeling efforts that require representative hematocrit values can be markedly impacted by variations in hematocrit measurement techniques and sampling regimens.	96001
95007A	Archaeological Site Restoration - Index Site Monitoring	ADNR Reger	Annual report peer reviewed; available to public at OSPIC.		
95007B	Archaeological Site Restoration	USFS Yarborough	FINAL REPORT OVERDUE. [Note: An FY 95 annual report was also submitted under this project number. It is available to the public at OSPIC, but has not been peer reviewed. The annual report was not required under Trustee Council report writing procedures.]		Report writing funded under 96007B.
95009D	Survey of Octopus and Chiton in Intertidal Habitats	USFS Scheel, PWSSC	Annual report peer reviewed; available to public at OSPIC.	Scheel, D., et al. 1996. Survey of octopus in the intertidal in PWS, AK. PWSSC, Cordova, AK	96009D
95012	Comprehensive Killer Whale Investigation	NOAA Matkin	Annual report peer reviewed; available to public at OSPIC.		96012A
95021	Seasonal Movement and Pelagic Habitat Use by Common Murres from the Barren Islands	DOI (NBS) Hatch	Final report available to public at OSPIC.		

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95025	Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI Holland-Bartels	Annual report peer reviewed; available to public at OSPIC.		96025
95025A	Nearshore Package: Project Planning and Development	DOI (NBS) Holland-Bartels	No report required.		96025
95026	Hydrocarbon Monitoring: Integration of Microbial and Chemical Sediment Data	ADEC Braddock	FINAL REPORT OVERDUE; delays in RSA of funds from ADEC to UAF.		
95027	Kodiak Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC Piper	Final report accepted by Chief Scientist; not yet at OSPIC.	E. Piper. 1995 Kodiak Shoreline Oiling Assessment of EVOS.	
95029	Population Survey of Bald Eagles in PWS	DOI (FWS) Schempf	Final report peer reviewed and returned to PI for revision April 8, 1996.	Bowman, T., Schempf, P., Hodges, J. 1996. Bald eagle populations in PWS, Alaska after the <i>Exxon Valdez</i> oil spill. USFWS/DOI Surveys indicated increase in population size and apparent recovery from spill.	
95031	Reproductive Success as a Factor Affecting Recovery of Murrelets in PWS	DOI (FWS) Kuletz	Final report submitted to Chief Scientist July 2, 1996; under peer review.	Kuletz, K.J., Kendell, S. developing a productivity index for marbled murrelets. USFWS/DOI Six sites in PWS were surveyed repeatedly by boat, June-August (n=65 surveys). Adult and juvenile seasonal patterns were described. Juvenile ratios and densities were significantly different between some sites. June adult numbers were most strongly correlated with juvenile numbers in July/August. An optional survey period was identified and power analysis defined necessary sample sizes.	94102; final report funded under 96031.

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95038	Symposium on Seabird Restoration	DOI (FWS) Harrison, PSG	Final report, in addition to publication of workshop proceedings, will be submitted. A preview draft of the report was submitted to the Executive Director April 15, 1996. Expect to submit draft to Chief Scientist November 1996.	Workshop took place September 29-October 2 in Girdwood, AK. Roughly 47 participants from Great Britain, Belgium, France, New Zealand, Japan, Canada, and USA. Primary focus was on common murre, harlequin duck, marbled murrelet, and pigeon guillemot. Achieved workshop goal by discussing seabird restoration in general, then applying the general discussions and conclusions to EVOS.	
95039	Common Murre Productivity Monitoring	DOI (FWS) Roseneau	Project is close-out/report writing for 94039. See 94039 for status.		94039
95041	Introduced Predator Removal from Islands - Follow-up Surveys	DOI (FWS) Bailey	Final report accepted by Chief Scientist; not yet at OSPIC.	Byrd, G.V., E.P. Bailey, and W. Stahl. 1996. Introduced predator removal from islands. USFWS/DOI. Homer, AK	
95043B	Carry-forward: Cutthroat and Dolly Varden Rehabilitation in Western PWS	USFS Wedemeyer	Annual report submitted to Chief Scientist May 8, 1996; under peer review.		96043B
95052	Community Interaction/Use of Traditional Knowledge	ADFG Miraglia	Final report submitted to Chief Scientist May 1, 1996; under peer review.		96052
95058	Landowner Assistance Program	ADFG Kuwada	No report required.		
95060	Spruce Bark Beetle Impacts	ADEC Piper	REPORT OVERDUE. Project conducted, and report being prepared, under RSA to ADFG. Report now expected by October 31, 1996.		
95064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in PWS	ADFG Frost	Annual report peer reviewed; undergoing format review at OSPIC.	Population model for harbor seals. Initial results of fatty acid analysis indicate this technique has great use for distinguishing differences in seal diets.	96064

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95074	Herring Reproductive Impairment	NOAA Carls	FINAL REPORT (which will include five chapters submitted as manuscripts) OVERDUE; now expected November 1996.	Carls, M.G., et al. Disease, mortality, and bioaccumulations of hydrocarbons in pre-spawn herring. Carls, M.G., et al. Impact of exposure of adult pre-spawn herring to weathered crude oil on subsequent progeny. Thomas, R.E., et al. Mixed function oxidase induction in pre- and post-spawn herring by petroleum hydrocarbons. Carls, M.G., et al. Effects of incubating herring eggs in water contaminated with weathered crude oil Johnson, S.W., et al. Reproductive success of Pacific herring in PWS six years after EVOS.	Final report funded under 96074.
95076	Effects of Oiled Incubation Substrate on Survival and Straying of Wild Pink Salmon	NOAA Wertheimer	Annual report (which includes results of Project 95191B) peer reviewed; available to public at OSPIC.	Wertheimer, A. C., et al. 1996. Effects of oiled incubation substrate on straying and survival of wild pink salmon. Auke Bay Fisheries Lab, NMFS, NOAA. Juneau, AK.	96076
95086C	Herring Bay Monitoring and Restoration Studies	ADFG Highsmith, UAF	Draft final report (which includes results of 93039) submitted to Chief Scientist September 25, 1996; under peer review.		Final report writing funded under 96086.
95089	Information Management System	ALL Fries	No report required.		
95090,	Mussel Bed Restoration and Monitoring in PWS and Gulf of Alaska	NOAA Babcock	FINAL REPORT OVERDUE; now expected November 10, 1996.	Babcock, M. and G. Irvine.	Final report funded under 96090.
95093	PWSAC: Restoration of Pink Salmon Resources and Services	ADFG Ferren, PWSAC	Project terminated; no report required.		
95100	Administration, Science Management and Public Information	All	No report required.		

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95102-CLO	Closeout: Murrelet Prey and Foraging Habitat in Prince William Sound	DOI (FWS) Kuletz	Project is close-out/report writing for 94102. See 94102 for status.	Kuletz, K.J., et al. 1995. Marbled murrelet foraging patterns in PWS, Alaska.	94102
95106	Subtidal Monitoring: Eelgrass Communities	ADFG Jewett, UAF	FINAL REPORT OVERDUE. Now expected October 31, 1996.		Final report writing funded under 96106.
95110-CLO	Closeout: Habitat Protection and Acquisition	ADNR Fries	No report required.		
95115	Sound Waste Management Plan	ADEC PWSEDC	Final report available to public at OSPIC (no peer review necessary).		
95117-BAA	Harbor Seals and EVOS: Blubber and Lipids as Indices of Food Limitation	NOAA Castellini, UAF	Draft annual report submitted to Chief Scientist September 15, 1996; under peer review.		Continued under 96001.
95121	Fatty Acid Signatures of Selected Forage Fish Species in PWS	NOAA Worthy, Texas A&M University	REPORT OVERDUE.		
95126	Habitat Protection and Acquisition Support	ADNR Fries	No report required.		
95126A	Carry-forward: Habitat Protection and Acquisition Support	ADNR Fries	No report required.		
95127	Tatitlek Coho Salmon Release Program	ADFG Kompkoff, Tatitlek IRA	No report required (project was NEPA only).		96127

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95131	Clam Restoration (Nanwalek, Port Graham, Tatitlek)	ADFG Brown-Schwalenberg, CRRC	Annual report peer reviewed July 1, 1996; not yet at OSPIC.		96131
95137-CLO	Closeout: Prince William Sound Salmon Stock Identification and Monitoring Studies	ADFG Fried	Project is close-out/report writing for 93068 and 94137. See 94137 for status.		93068, 94137
95138	Elders/Youth Conference	ADFG Simeone	Conference proceedings available to public at OSPIC.	Braund, S., et al. Community conference on subsistence and the oil spill: summary report. Oct. 1995.	
95139	Wild Stock Supplementation Workshop	ADFG Hauser	No report required. (Summation memo prepared by Chief Scientist is on file in Anchorage Restoration Office.)		
95139A1	Carry-forward: Salmon Instream Habitat and Stock Restoration -- Little Waterfall Creek Barrier Bypass	ADFG Honold	Annual report submitted to Chief Scientist June 13, 1996; under peer review.		96139A1
				Construction complete in field November 1995.	
95139A2	Port Dick Spawning Channel	ADFG Dudiak	No report required (project was NEPA only).		
95139B	Closeout: Otter Creek/Shrode Creek Instream Restoration	USFS Olson	Project is close-out/report writing for 94139B1 and 94139B2. See 94139B1 and 94139B2 for status.		94139B1, 94139B2
95139C1	Montague Riparian Rehabilitation	USFS Hodges	Annual report submitted to Chief Scientist May 8, 1996; under peer review.		96139C1
95139C2	Carry-forward: Salmon Instream Habitat and Stock Restoration -- Lowe River	ADFG	No report required (project canceled).		



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95163A	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species (interim funding)	NOAA Duffy (NOAA), Willette (ADFG)	NOAA: No report required. Project is funding for planning of integrated APEX/ ecosystem project. ADFG: Project is funding for close-out/report writing for 94163; see 94163 for status of annual report.		
95163A1	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species (APEX)	NOAA Haldorson	Integrated annual report submitted to Chief Scientist June 15, 1996; under peer review. Available to public at OSPIC.		96163
95163B	Foraging of Seabirds (APEX)	DOI Ostrand	See 95163A1.		96163
95163C	Fish Stomach Contents Analysis (APEX)	NOAA Sturdevant	See 95163A1.		96163
95163D	Tufted Puffin Foraging and Reproductive Success (APEX)	DOI Piatt	FINAL REPORT OVERDUE. Report was to be a chapter of the 95163 integrated report (see 95163A1), but it was not submitted at the time of the integrated report and still has not been submitted. (Is a final report because this component of APEX did not continue past FY 95.)		See 96163.
95163E	Reproduction and Foraging of Black-legged Kittiwakes (APEX)	DOI (FWS) Irons	See 95163A1.		96163
95163F	Factors Affecting Recovery of PWS Pigeon Guillemot Populations (interim funding)	DOI (FWS) Hayes	Project is close-out/report writing for 94173. See 94173 for status.		94173
95163F1	Reproduction of Pigeon Guillemots Populations in PWS in Relation to Food (APEX)	DOI Hayes	See 95163A1.		96163

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95163G	Seabird Energetics (APEX)	NOAA Roby	See 95163A1.		96163
95163I	Seabird/Forage Fish Interaction: Program Management and Integration	DOI (FWS) Duffy	See 95163A1.		96163
95163J	Barren Islands Seabird Studies (APEX)	DOI Roseneau	See 95163A1.		96163
95163K	Using Predatory Fish to Sample Forage Fish (APEX)	DOI Roseneau	See 95163A1.		96163
95163L	Historic Review of Ecosystem Structure in PWS/Gulf of Alaska and Abundance/ Distribution of Forage Fish in Barren Islands (APEX)	DOI Piatt	See 95163A1.		96163
95165	PWS Herring Genetic Stock Identification	ADFG J. Seeb	Annual report peer reviewed; available to public at OSPIC.		96165
95166	Herring Natal Habitats	ADFG Carpenter, Willette	Annual report peer reviewed June 10, 1996; returned to PI for revision.	Results indicate an improvement in the age structure among the age 3 and 4 herring to suggest the beginnings of recovery. Results are being compared with results of the herring disease study.	96166
95191A	Investigating and Monitoring Oil Related Egg and Alevin Mortalities	ADFG J. Seeb, Bue	Results will be presented in two reports: (1) Field component: Annual report peer reviewed; undergoing format review at OSPIC. (2) Genetics component: Annual report (in form of manuscript) submitted to Chief Scientist October 3, 1996.	(1) Bue, B. Injury to pink salmon embryos in Prince William Sound: field monitoring (2) Seeb, J.	96191A

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95191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA Rice	Results of this project are included in the report being prepared under 95076. See 95076 for status.		96191B
95199-CLO	Institute of Marine Science - Seward Improvements EIS	ADFG Sundberg	No report required.	Phase I (marine) construction completed. Phase II (building) construction bidding process underway. Private financing package assembled. Awaiting bid results and bond sale to proceed to construction, scheduled for May 8, 1996.	
95244	Seal and Sea Otter Cooperative Subsistence Harvest Assistance	ADFG Fall	FY 95 findings included in annual report submitted under 94244. See 94244 for status.		94244, 96244
95255	Kenai River Sockeye Restoration	ADFG L. Seeb, Tarbox	Annual report submitted to Chief Scientist June 14, 1996; under peer review.	Analysis of allozyme and mtDNA data revealed a substantial amount of genetic diversity among populations, suggesting significant local adaptation. Simulations indicated that Kenai River populations can be identified in mixtures. Results are currently being used in management.	96255
95258	Sockeye Salmon Overescapement (Kenai/Kodiak)	ADFG Schmidt	Annual report submitted to Chief Scientist May 13, 1996; under peer review.	Developed model which predicts fall fry production from seasonal copepod abundance. Established a single year shift in density-dependent response because of two-year life history of dominant copepod.	96258

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95259	Restoration of Coghill Lake Sockeye	ADFG Kyle	Annual report submitted to Chief Scientist April 11, 1996; under peer review.	Nutrient enrichment of Coghill Lake shows positive effects on lake productivity. Mean total phosphorus concentration increased by 22% after enrichment; mean chlorophyll concentration (algal biomass) increased by 250%, which improved quality of phytoplankton. Rearing sockeye fry were larger in 1995 compared to previous years. The 1995 smolt outmigration estimate of 1.6 million was the highest recorded since sampling began in 1989.	96259
95266	Experimental Shoreline Oil Removal	ADEC Piper	Redraft of final report (proceedings of Residual Oiling Workshop) submitted to Chief Scientist July 9, 1996; under review.		
95272	Chenega Chinook Release Program	ADFG Lindley, PWSAC	Annual report peer reviewed; available to public at OSPIC.		96272
95279	Subsistence Restoration Project - Food Safety Testing	ADFG Miraglia	Draft final report submitted to Chief Scientist April 23, 1996; under peer review.	The emphasis in 1995 was to establish a system whereby subsistence users could get samples of abnormal resources to biologists and pathologists for study, who would then report findings back to subsistence users. Training sessions were held in 19 spill-impacted communities.	
95285-CLO	Closeout: Subtidal Sediment Recovery Monitoring	NOAA O'Clair	Final report submitted to Chief Scientist May 9, 1996; under peer review.		94285
95290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance for Restoration and NRDA Environmental Samples Associated with the Exxon Valdez Oil Spill	NOAA Short	Results incorporated into report being prepared under ST8. See ST8 for status.		96290

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95320A	Salmon Growth and Mortality	ADFG Willette	Annual report, which integrates results of all subprojects, submitted to Chief Scientist May 20, 1996; under peer review.	Results indicate that predation on juvenile pink salmon by pollack and seabirds is less than had been forecast. This suggests predators may have caused significant mortality to juvenile pinks in nearshore habitats or that the pollack predation rate was underestimated if the feeding behavior or distribution of pollack was different than expected.	Integrated into 96320E in FY 96.
95320B	PWS Pink Salmon Stock Identification and Monitoring (CWT)	ADFG Joyce	Annual report peer reviewed; available to public at OSPIC.	Stock separation was complicated by non-standard marking rates for SEA project releases at AFK and WHN hatcheries. Also high tag loss rate at Cannery Creek hatchery biased results. In-season adjustments were made to compensate for the above mentioned biases. Solomon Gulch, Cannery Creek, wild stocks, WHN, and AFK hatcheries were the highest contributors to the PWS pink salmon return respectively.	96186
95320C	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in PWS	ADFG Joyce	Annual report peer reviewed; available to public at OSPIC.	Otolith thermal marks were applied on 100% of hatchery incubated pink salmon. The marks are distinct and blind tests have indicated that otolith lab personnel can identify hatchery fish from mixtures of hatchery and wild stocks. Preliminary results indicate a successful marking project.	96188
95320D	PWS Pink Salmon Genetics	ADFG J. & L. Seeb	Annual report peer reviewed; returned to PI for revision July 1, 1996. [NOTE: Report also includes results from 94320D.]	Allozyme and mtDNA analyses showed genetic differences between upstream and tidal collections within the same streams and among regions within PWS. These results support managing and restoring pink salmon on a regional basis rather than as a single panmictic population.	96196

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95320E	Juvenile Salmon and Herring Integration	ADFG Willette	See 95320A.	Movement and diet overlap for age zero pink salmon have been studied and compared.	96320
95320G	Phytoplankton and Nutrients	ADFG McRoy & Eslinger, UAF	See 95320A.	First complete data sets for the phytoplankton and nutrient cycles.	96320
95320H	Role of Zooplankton in the PWS Ecosystem	ADFG Cooney, UAF	See 95320A.		96320
95320I	Isotope Tracers - Food Web Dependencies in PWS (Fish, Marine Mammals, and Birds)	ADFG Schell	Annual report peer reviewed; available to public at OSPIC.	Schell, D.M. and A. Hirons. 1996. Isotope ratio studies of marine mammals in PWS. ADF&G, Habitat and Restoration Division, Anchorage, AK. Stable isotope analyses were conducted on a wide suite of samples for this project and associated SEA isotope studies. Preliminary data show geographic gradients in isotope ratios useful in separating Gulf of Alaska from PWS energy sources. These are now being used as biological markers for fishery studies and for estimation of harbor seal feeding habitats.	Continued as 96170.
95320I(2)	Isotope Tracers - Food Webs of Fish	ADFG Kline, UAF	See 95320A.		
95320J	Information Systems and Model Development	ADFG Patrick, PWSSC	See 95320A.		96320

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95320K	PWSAC: Experimental Fry Release	ADFG Ferren & Lindley, PWSAC	Annual report submitted to Chief Scientist March 20, 1996; under peer review. Available to public at OSPIC.		96320
The fish were successfully released on schedule.					
95320M	Observational Physical Oceanography in PWS and the Gulf of Alaska	ADFG Vaughan, PWSSC	See 95320A.		96320
95320N	Nearshore Fish	ADFG Thomas, PWSSC	See 95320A.		96320
Fish are typically light sensitive because of visibility by potential predators. In summer 1995 we noticed a trend in which pollock migrated downward with sunlight, and in fall 1995 we noticed a trend in which herring migrated towards the shore with both sunlight and moonlight. For better acoustic measurement of fish, one should perform herring surveys at night and during a new moon because they will more likely be in the open water, but perform pollock surveys in the day because they are farther from the surface.					
95320Q	Avian Predation on Herring Spawn	USFS Bishop	FINAL REPORT OVERDUE. Due date had been extended to June 30, 1996. [NOTE: Some results also included in integrated SEA report.]		96320Q
Documented avian abundance and distribution in spawn areas. Glaucous-winged gulls were the most numerous herring spawn predator. Analyzed stomach contents of the five most abundant avian species foraging in spawn areas in northern Montague Island. Herring spawn occurred in 100% of glaucous-winged gulls, mew gulls, and surf scoters, and in 75% of surfbirds and 69% of turnstones. Estimate that glaucous-winged gulls, mew gulls, surf scoters, and black turnstones obtained 99- 100% of total daily energy from spawn.					

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95320S	Disease Impacts on PWS Herring Populations (competitive solicitation under State of Alaska two-step, RFQ-RFP process)	ADFG Hauser	Annual report submitted to Chief Scientist April 5, 1996; under peer review. [NOTE: Report addendum on plasm lgm submitted May 3, 1996.]	Focal skin reddening or ulcers were more prevalent in spawning Pacific herring from PWS (2.8%) than from Sitka Sound (1.3%), but less prevalent at both sites than in PWS in 1994 (8.4%). Ichthyophonus prevalence in PWS spawning fish in 1995 (29%) was same as 1994 and same as Sitka Sound in 1995 (26%). VHS virus was not isolated from any spawning fish in PWS or Sitka Sound, but was isolated from 6.2% of prspawning fish from PWS. Lab experiments revealed that both VHS and Ichthyophonus can kill Pacific herring.	96162
95320T	Juvenile Herring Growth and Habitat Partitioning	ADFG Norcross	See 95320A.		96320
95320U	Somatic and Spawning Energetics of Herring/Pollock	ADFG Paul, UAF	See 95320A.		96320
95320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG Scheel, PWSSC	See 95320A. [NOTE: This component of SEA was funded for close-out/report writing only in FY 96.]	Estimate that from 1.1-2.4% of the 241.7 million pink and chum salmon fry released into Lake Bay (Esther Island, PWS) in 1995 were consumed by seabirds in and near Lake and Quilliam Bays in the period April-June 1995. Black-legged kittiwakes and marbled murrelets were the most abundant avian predators on these fry.	96320
95417	Carry-forward: Waste Oil Disposal Facilities	ADEC	No report required (project canceled).		
95422-CLO	Closeout: Restoration Plan EIS/Record of Decision	USFS	No report required.		



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95424	Restoration Reserve	All All	No report required.		
95427	Harlequin Duck Recovery Monitoring	ADFG Rosenberg	Annual report peer reviewed; not yet at OSPIC.	Males comprised a significantly greater proportion of the total population in western PWS during the first spring survey. Compared to eastern PWS, in western PWS the ratio of paired to non-paired females was significantly lower, males comprised a significantly greater proportion of the total population during the fall, a greater proportion of flightless females was observed in late July, and the influx of females was delayed. The influx of males was accelerated in eastern PWS. No broods were observed in PWS.	96427
95428-CLO	Closeout: Subsistence Planning Project	ADFG Fall	FY 95 findings included in annual report submitted under 94428. See 94428 for status.		94428
95505B	Data Analysis for Stream Habitat	USFS Olson	Final report available to public at OSPIC. Report also includes findings from 93051 and 94505.	Olson, R.A., 1995. Use of aerial photograph, channel-type interpretations to predict habitat availability in small streams, USDA, Forest Service, Chugach N.F., Anchorage, AK	93051, 94505

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96001	Recovery of Harbor Seals from EVOS: Condition and Health Status	ADFG Castellini/UAF	<u>Oct - Dec:</u> DONE: Analysis and statistical study of fall blood samples DONE: Analysis of blubber water content <u>Jan - Mar:</u> DONE: Modeling of body morphometrics CANCELED: First collection of field samples outside of PWS <u>Apr - June:</u> CANCELED: Second collection of field samples outside of PWS -- COLLECTED FIELD SAMPLES INSIDE PWS DONE: Analysis of all blood samples <u>July - Sept:</u> DONE: Modeling of body morphometrics and blubber data, and body condition indices DONE: Second collection of field samples inside PWS
96007A	Archaeological Index Site Monitoring	ADNR Reger/ADNR	<u>Oct - Mar:</u> DONE: Complete requirements for final approval of project including NEPA compliance <u>Apr - June:</u> DONE: Obtain field supplies, schedule field trips <u>July - Sept:</u> DONE: Conduct field visits to sites UNDERWAY: Sample analysis, report preparation
96007B	Site Specific Archaeological Restoration	USFS Yarborough/ USFS	<u>Oct - Dec:</u> DONE: Analysis of field data and specialists reports <u>April 15:</u> Final report on project 95007B due DUE DATE EXTENDED TO AUGUST 31, 1996 -- REPORT NOW OVERDUE

17.6.14c

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96009D	Survey of Octopuses in Intertidal Habitats	USFS Scheel/PWSSC	NOTE: Contract written for calendar year 1996, so includes first quarter of FY 97 <u>Jan - Mar:</u> DONE: Hire personnel DONE: Arrange insurance or dive contracts DONE: Advertise and award contract vessel charters DONE: Visit new sites <u>Apr - June:</u> DONE: Report results of FY95 to subsistence users in Tatitlek and Chenega Bay DONE: Begin field work including tag-recapture and SCUBA sampling monthly <u>July - Sept:</u> DONE: Continue tag-and-recapture and SCUBA sampling monthly DONE: Conduct habitat sampling at multiple sites at the end of June <u>Oct-Dec:</u> Last SCUBA survey
96012A-BAA	Comprehensive Killer Whale Investigation in Prince William Sound, Alaska	NOAA Matkin/N Gulf Oceanic	NOAA CONTRACT PERIOD IS 4/15/96-5/6/96; UNCLEAR HOW THIS AFFECTS SCHEDULE. <u>Jan-Mar:</u> DONE: Enter and tabulate available data <u>Apr-June:</u> Grid data, calculate sightings Examine dietary overlap <u>July-Sept:</u> DONE: Field work (monitoring) UNDERWAY: Analyze distribution of foraging behavior UNDERWAY: Estimate total predation on harbor seals UNDERWAY: Complete population separation using genetic techniques UNDERWAY: Finalize GIS/predation work
96025*	Mechanism of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI Holland-Bartels et al	Field season completed. Data analysis underway. Project PIs scheduled to meet Oct. 16-17.
96027	Kodiak Archipelago Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC Piper/ADEC	<u>Oct - Dec:</u> DONE: Draft report <u>Jan - Mar:</u> UNDERWAY: Report to general public DELETED: Community meetings. <u>April 15:</u> PEER REVIEWED; NEED TO SUBMIT TO OSPIC: Final report (being prepared under 95027) due.

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96031	Development of a Productivity Index to Monitor the Reproductive Success of Marbled and Kittlitz's Murrelets in Prince William Sound, Alaska	DOI Kuletz/DOI	<u>Oct - Mar:</u> Work on report <u>May 31:</u> DONE: Draft final report due -- REPORT SUBMITTED 7/2/96 (SEE PROJECT 95031).
96038	Publication of Seabird Restoration Workshop	DOI Pacific Seabird Group	<u>Oct - Dec:</u> DONE: Drafts of workshop discussions submitted <u>Jan - Mar:</u> Preparation of review articles based on recommendations of workshop attendees White papers and workshop discussion papers revised by authors based on information and opinions from reviews <u>April 15:</u> DELAYED TO MID-MAY: Final report due <u>July - Sept:</u> DELAYED TO NOV. 1996: Drafts submitted to editors for publication in a book APRIL 1997: MANUSCRIPT SUBMITTED TO PUBLISHER LATE FALL 1997: PAGE PROOFS PRODUCED BY PUBLISHER
96043B	Monitoring of Cutthroat Trout and Dolly Varden Habitat Improvement Structures	USFS Gillikin/USFS	<u>Oct - Dec:</u> UNDERWAY: Report on preliminary finds of population and distribution estimations. [NOTE: Preliminary results indicate population estimates may not be determined with present data.] <u>July - Sept:</u> DONE; STRUCTURES WORKING AS DESIGNED: Inspect and measure effects of installed structures DONE; TRAPPING EFFICIENCY LESS THAN DESIRABLE DUE TO HIGH WATER: Conduct population estimates
96048-BAA	Historical Analysis of Sockeye Salmon Growth Among Populations Affected by Overescapement in 1989	NOAA Ruggerone/ NRC, Inc.	PER NOAA CONTRACT: <u>Oct 1997</u> UNDERWAY: Collect and press scales UNDERWAY: Age scales and select scales for measurement <u>Nov 1997</u> UNDERWAY: Measure scales <u>Feb 1998</u> Analyze data <u>Mar 1998</u> Prepare final report

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96052	Community Involvement & Use of Traditional Knowledge	ADFG/Miraglia Brown/ ChugachRRC	<u>Oct-Dec:</u> DONE: ADFG and CRRC enter into contract for coordination of facilitator network DONE: MOU drafted between ADFG and CRRC DONE: Spill Area Wide Coordinator hired DRAFT DONE: Guidelines/protocols developed for TEK CANCELED: Identification of injured species for TEK <u>Jan-Mar:</u> DONE: Facilitator network in place and operating CANCELED: Begin work on TEK database DONE: Training workshop for local community facilitators <u>Apr-June:</u> CANCELED: Training workshop for local community facilitators WORKED WITH COMMUNITIES TO DEVELOP FY 97 PROJECT PROPOSALS
96064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	ADFG Frost/ADFG	<u>Oct - Dec:</u> DONE: Retrieve ARGOS data DONE: Analysis of fatty acid samples and aerial survey data DONE: Analysis of genetic samples DONE: Meet with hunters about study results, distribute newsletter DONE: Meet with SWFSC regarding genetics analyses <u>Jan - Mar:</u> DONE: Order SLTDRs for field season DONE: Coordination meeting with other ADFG harbor seal projects DONE: Arrange logistics (boats, airplanes, equipment, contracts, supplies) DONE: Reserve ARGOS satellite channels <u>Apr - June:</u> DONE: Field work to catch seals and collect sample DONE: Finalize manuscript on power analysis for submission DONE: Finalize population model and model simulations <u>July - Sept:</u> UNDERWAY: Analysis of fatty acid samples DONE: Conduct aerial surveys during molting DONE: Attach 12 SLTDRs, sampling REC'D FINAL REPORT FOR POPULATION MODELING COMPONENT FROM CONTRACTOR

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96074	Herring Reproductive Impairment	NOAA Rice & Carls/NOAA	<u>Oct-Dec:</u> DONE: Analyze field data <u>Apr-June:</u> UNDERWAY: Complete data analysis <u>June 15:</u> DELAYED TO NOVEMBER 1996: Submit final report (95074)
96076	Effects of Oiled Incubation Substrate on Straying and Survival of Wild Pink Salmon	NOAA Wertheimer/ NOAA	<u>Oct-Mar:</u> NO ACTIVITIES SCHEDULED THIS QUARTER. <u>Apr-June:</u> DONE: Oil exposure of 1995 brood embryos DONE: Marking of 1995 brood fry (MARKED AND RELEASED 459,000 PINK SALMON) <u>July-Sept:</u> DONE: Spawning of 1997 brood adults DONE: Survey stream to determine level of personnel effort needed for 1997 data collection
96086	Herring Bay Monitoring and Restoration Studies	ADFG Highsmith/ UAF	<u>Oct - Mar:</u> DONE: Lab analysis, data analysis <u>April 15:</u> SEPTEMBER 25: Submitted final report (on 95086C)
96090	Mussel Bed Restoration and Monitoring	NOAA Babcock/NOA A & Irvine/DOI	<u>Oct - Mar:</u> ONGOING: Chemical analyses conducted <u>September 30:</u> DELAYED TO NOVEMBER 10, 1996: Final report due
96101	Removal of Introduced Foxes From Islands	DOI Ebbert/DOI	<u>Apr 15:</u> DONE: Submit final report (on 95041)
96106	Subtidal Monitoring: Eelgrass Communities	ADFG Jewett/UAF	<u>Oct - Mar:</u> UNDERWAY: Process benthic, sediment, and hydrocarbon samples Data entry and analyses <u>May 30:</u> DELAYED TO 9/30/96: Final report due. NOT RECEIVED; NOW OVERDUE.

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96115	Sound Waste Management Plan	ADEC Roetman/ PWSEDC	<u>Oct-Dec:</u> DONE: Draft report <u>Jan:</u> DONE: PWSEDC report to the Prince William Sound communities recommending solutions for solid waste and marine pollution.
96127	Tatitlek Coho Salmon Release	ADFG/Moore Kompkoff/ Tatitlek IRA	<u>Oct - Dec:</u> DONE: Prepare contract with Tatitlek IRA through PWS Economic Development Council <u>Jan - March:</u> DONE: Incubate eggs for 1996 release DONE: Rear smolts for 1996 release <u>Apr - June:</u> DONE: Transport smolt to Boulder Bay and place in net pens DONE: Release smolt into Boulder Bay <u>July - Sept:</u> DONE: Egg take
96131	Chugach Native Region Clam Restoration	ADFG/Moore Brown/ ChugachRRC	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan-Mar:</u> DONE: Obtain permits and construct and install tidal FLUPSY at Tatitlek DONE: Obtain permits and initiate predator control studies on razor clam beaches near Eyak DONE: Obtain permits and initiate beach seeding experiments in Tatitlek and Port Graham/Nanwalek <u>Apr-June:</u> Collect broodstock -- SPAWNED BROOD (50 ANIMALS) ON HAND FROM LAST YEAR; 10 MILLION LARVAE ON HAND DONE: Obtain clearance and transport to hatchery DONE: Transfer 5mm seed to hatchery nursery and FLUPSY <u>July-Sept:</u> DONE: Conduct baseline shellfish surveys of tidelands near Ouzinkie and Chenega Bay ALSO SEEDED BEACHES AT NANWALEK, PORT GRAHAM, AND TATITLEK WITH LITTLENECK CLAMS

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96139A1	Salmon Instream Habitat and Stock Restoration - Little Waterfall Barrier Bypass Improvement	ADFG Honold/ ADFG	<u>Oct - Dec:</u> DONE: Project construction and oversight <u>Jan - Mar:</u> DONE: Egg-to-fry survival sampling <u>Apr - June:</u> DONE: Juvenile coho abundance sampling <u>July - Sept:</u> DONE: Spawner abundance and distribution surveys COMPLETED FIELD WORK: ESCAPEMENT ENUMERATION, MINNOW TRAPPING, FISH PASS INSPECTION
96139A2	Spawning Channel Construction Project Port Dick Creek, Lower Cook Inlet	ADFG Dudiak/ADFG	<u>Oct - Mar:</u> DONE: Continue groundwater fluctuation measurements DONE: Complete environmental assessment DONE: Develop engineers drawings DONE: Complete permit requirements <u>Apr - June:</u> DONE: Receive and award bid package DONE: Complete the construction of the channel <u>July - Sept:</u> DONE: Conduct stream side egg takes
96139C1	Montague Riparian Rehabilitation Monitoring Program	USFS Hodges/USFS	<u>April - June:</u> DONE: Monitor structures at low flow DONE: Map stream channels at structures and areas downstream DONE: Assess use of fish habitat and vegetation <u>July - Sept:</u> UNDERWAY: Report writing



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96142-BAA	Status and Ecology of Kittlitz's Murrelet in Prince William Sound	NOAA ABR, Inc.	NOAA CONTRACT PERIOD IS 4/4/96-12/31/97 <u>Jan - Mar:</u> Arrange logistics <u>Apr - June:</u> DONE: Conduct early summer cruise <u>July - Sept:</u> DONE: Conduct late summer cruise UNDERWAY: Analyze stomach contents UNDERWAY: Key punch data and QA/QC UNDERWAY: Digitize data, measure geographic data, QA/QC
96144	Common Murre Population Monitoring	DOI Roseneau/DOI	<u>Apr-June:</u> DONE: Vessel contract and seasonal employee hire DONE: Coordinate logistics with 96163K DONE: Check/repair equipment DONE: Update census plot booklets DONE: Purchase supplies <u>July-Sept:</u> DONE: Data collection - Barren Islands UNDERWAY: Data entry and analysis
96145	Cutthroat Trout and Dolly Varden: the Relation Among and Within Populations of Anadromous and Resident Forms	USFS Reeves/PacNW Research Lab	<u>Oct - Dec:</u> DONE: Develop cooperative agreement with OSU DONE: Secure appropriate collecting permits DONE: Obtain samples of Dolly Varden and cutthroat trout for analysis DONE: Hire technician for genetic analysis DONE: Hire field technician (Kitty Griswold) <u>Jan - Mar:</u> DONE: Complete genetic screening DONE: Select field sites DONE: Secure contract vessel DONE: Assemble required field gear and ship to Cordova <u>Apr - June:</u> DONE: Contract with people (2) or field work DONE: Begin analysis <u>July - Sept:</u> DONE: Collect samples of Dolly Varden at field sites UNDERWAY: Initial analysis of genetic data on cutthroat trout [NOTE: Semi-annual report submitted to OSPIC July 11, 1996. The annual report, which will be number 96145-1, is due April 15, 1997.]

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96149	Archaeological Site Stewardship	ADNR Reger/ADNR	<u>Oct - Dec:</u> DONE: NEPA compliance DONE: Preliminary site selection DONE: Preliminary steward selection <u>Jan - June:</u> DONE EXCEPT FOR KODIAK: Training documentation provided to stewards DONE: Site selection finalized DONE: Sites visited UNDERWAY: Site documentation (80% done) <u>July - Sept:</u> UNDERWAY: Monitoring reports from stewards to coordinators due for compilation
96154	Comprehensive Community Plan for Restoration of Archaeological Resources in PWS and Lower Cook Inlet	USFS Johnson/ Chugach HF	<u>Oct - Dec:</u> UNDERWAY: Organize working group, assess facility needs, evaluate alternatives, assess training needs <u>Jan - Mar:</u> Assess field reports DONE: Community review conference POSTPONED TO 5/15/96: Submit draft plan to Executive Director 3/14/96 <u>Apr - June:</u> Public meetings <u>July - Sept:</u> Submit revised plan to Executive Director 7/15/96 -- REVISED DRAFT NOW DUE 10/28/96 Present plan to Trustee Council 8/15/96 -- DELAYED Submit final plan and project reports 9/30/96 -- DELAYED TO 10/31/96
96159	Surveys to Monitor Marine Bird Abundance In Prince William Sound During Winter and Summer 1996	DOI Agler/DOI	<u>Oct-Dec:</u> DONE: Arrange logistics <u>Jan-Mar:</u> DONE: Hire and train personnel DONE: Conduct winter survey in PWS <u>Apr-June:</u> DONE: Enter data DONE: Arrange logistics for summersurvey <u>Jul-Sept:</u> DONE: Conduct summer survey in PWS UNDERWAY: Analyze data

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96161	Differentiation and Interchange of Harlequin Duck Populations Within N. Pacific Region	DOI Goatcher/DOI	NO ACTIVITIES SCHEDULED THIS QUARTER. <u>April - June:</u> DONE: Procure equipment and supplies DONE: Procure vessels <u>July-Sept:</u> DONE: Harlequin duck capture, sample collection, banding
96162	Investigations of Disease Factors Affecting Declines of Pacific Herring Populations in Prince William Sound, AK	ADFG UW/Kocan UCS/Marty SFU/Kennedy	<u>Oct - Dec:</u> DONE: Culture herring larvae and determine their SPF status DONE: Collect data on growth, survival, disease susceptibility Improve husbandry techniques DONE: Begin viral and fungal exposures <u>Jan - June:</u> UNDERWAY: Continue or begin infectivity studies with VHSV and <i>I. hoeri</i> DONE: Begin new year of SPF fish from eggs for future studies. DONE: Re-isolate organisms and verify that monoxenic infections were produced DONE: Begin blood chemistry on infected fish and physiological studies <u>July - Sept:</u> DONE: Collect 0-age herring for stress exposures DONE: Technique development for stress studies DONE: Analyze data UNDERWAY: Begin immune suppression studies on experimental fish for comparison with data from wild fish (PWS)
96163	APEX: Apex Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska	NOAA NOAA/DOI	See subprojects.
96163A	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species	NOAA Halderson/ NOAA	<u>July - Sept.</u> DONE: Cruise UNDERWAY: Data analysis
96163B	Foraging of Seabirds	DOI Ostrand/DOI	<u>Jan - June:</u> DONE: Logistics planning DONE: Coordinate with SEA's herring study for data collection <u>July - Sept:</u> DONE: Forage fish cruises <u>Oct - Dec:</u> UNDERWAY: Data evaluation

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96163C	Fish Diet Overlap Using Fish Stomach Content Analysis	NOAA Sturdevant/ NOAA	<u>April - June:</u> DONE: Complete processing of 1995 samples DONE: Purchase sampling supplies for 1996 <u>July - Sept:</u> DONE: Field season UNDERWAY: Process 1996 diet samples
96163D	Distribution of Forage Fish as Indicated by Puffin Diet Sampling	DOI Piatt/DOI	<u>April 15:</u> DELAYED: Submit final report (95163D).
96163E	Black-legged Kittiwakes as Indicators of Forage Fish Availability	DOI Irons/DOI	<u>April - June:</u> DONE: Prepare for field season DONE: Begin field work <u>July - Sept:</u> DONE: Complete field work UNDERWAY: Analyze data
96163F	Factors Affecting Recovery of Pigeon Guillemot Populations	DOI Hayes/DOI	<u>April - June:</u> DONE: Prepare for field season DONE: Begin field work <u>July - Sept:</u> DONE: Complete field work UNDERWAY: Begin data analysis
96163G	Diet Composition, Reproductive Energetics, and Productivity of Seabirds	NOAA Roby/OSU	NOAA CONTRACT PERIOD IS 5/1/96-4/30/97 <u>July - Sept:</u> DONE: Collect field data UNDERWAY: Sample and data analysis
96163H	APEX Planning and Project Leader	DOI Duffy/UAA	Not applicable.
96163J	Barren Islands Seabird Studies	DOI Roseneau/DOI	<u>April - June:</u> DONE: Finalize logistical needs DONE: Set up camp at East Amatuli Island DONE: Begin data collection <u>July - Sept:</u> DONE: Data collection UNDERWAY: Begin data analysis

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96163K	Using Predatory Fish to Sample Forage Fish	DOI Roseneau/DOI	<u>April 15:</u> DONE: Submit final report (95163K)
96163L	Historical Review of Ecosystem Structure in the PWS/GOA Complex	DOI Piatt/DOI	<u>April - June:</u> DONE: Decide on common format for combined database DONE: Produce comma-delimited data tables DONE: Begin exploratory data analysis and structuring of data for GIS work <u>July - Sept:</u> DONE: Continue data analysis
96163M	Lower Cook Inlet Study	DOI Piatt/DOI	<u>April - June:</u> DONE: Initiate hydroacoustic and seabird surveys in Kachemak Bay DONE: Trawl sampling DONE: Set up field camps UNDERWAY: Colony censusing and plot monitoring <u>July-Sept:</u> ?: Initiate pilot studies using radio telemetry DONE: Trawling and hydroacoustic surveys in lower Cook Inlet DONE: Initiate colony observations on chick feeding and adult attendance DONE: Remove field camps UNDERWAY: Data analysis
96163N	Black-legged Kittiwake Feeding Experiment	DOI Romano/DOI	<u>April - June:</u> DONE: Begin catching fish for food during captive feeding trials DONE: Mark accessible nests to obtain chicks for capture <u>July - Sept:</u> DONE: Continue feeding experiment UNDERWAY: Lab analysis of fish and bird data
96163O	Statistical Review	DOI McDonald/ Western Ecosystem	<u>April - June:</u> DONE: Continue spatial analysis of 1996 acoustic survey data DONE: Develop sampling plans <u>July - Sept.</u> ?

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96163P	Sand Lance Hydrocarbon Exposure	NOAA Anderson/ NOAA	<u>April - June:</u> DONE: Search for sand lance sites <u>July - Sept:</u> DONE: Collect samples DONE: Ship fish samples to Kelso, WA for extraction Send selected extracts to Auke Bay lab UNDERWAY: Sample analysis
96165	Genetic Discrimination of Prince William Sound Herring Populations	ADFG J. Seeb/ADFG	<u>Oct - Dec:</u> DONE: Laboratory analysis -- REPORT PENDING FROM CONTRACTOR <u>Jan - Mar:</u> UNDERWAY: Evaluate lab results DONE: Collect herring from Sitka Sound <u>Apr - June:</u> DONE: Collect samples of early spawning herring in PWS DONE: Plan for collection in PWS, Kodiak, Togiak Bay, and Norton Sound Begin laboratory analysis -- WILL BEGIN IN OCTOBER (subsample 1996 samples for contractors; archive original samples)
96166	Herring Natal Habitats	ADFG Carpenter & Willette/ADFG	<u>Jan - Mar:</u> DONE: Biomass estimates <u>Apr - June:</u> DONE: Conduct acoustic survey DONE: Collect AWL, fecundity, disease, genetic stock ID, and bioenergetics samples DONE: Initiate dive surveys DONE: Assist reproductive impairment sample collection DONE: Lab processing of diver samples <u>July - Sept:</u> DONE: Finalize estimate of spawning
96170	Isotope Ratio Studies of Marine Mammals in Prince William Sound	ADFG Schell/UAF	<u>Oct - Mar:</u> DONE: Analyze isotope ratio samples collected in 1994 - 1995 (THROUGH MARCH 1996) DONE: Initial captive animal experiments <u>Apr - Sept:</u> UNDERWAY: Field work and sampling UNDERWAY: Captive animal experiments (CONTINUING WITH HARBOR SEALS; STELLER SEA LIONS INITIATED IN AUGUST) UNDERWAY: Analysis of samples collected from Native hunts and NMFS collections of sea lion tissues

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96180	Kenai Habitat Restoration & Recreation Enhancement Project	ADNR Fries/ADNR	<u>Oct - Mar:</u> DONE: Review existing data on Kenai River DONE: Develop implementation strategy DONE: Develop site evaluation, ranking and prioritization system DONE: Conduct preconstruction site surveys DONE (DRAFT): Develop design plans UNDERWAY: Apply for permits DONE: Conduct public scoping meetings and prepare environmental compliance documents Organize volunteer support <u>Apr - June:</u> DONE: Develop cooperative agreements DONE FOR 5 PROJECTS: Work with applicants to develop detailed project plans/budgets Secure construction permits DELAYED: Conduct construction work on first priority sites <u>July - Sept:</u> Monitor revegetation sites Monitor public use of completed project and proposed sites for next year UNDERWAY: Begin work on Kenai Beach Dunes, Endicott, Funny River, Big Eddy, and Ciechanski projects
96186	Coded Wire Tag Recoveries From Pink Salmon in Prince William Sound	ADFG Joyce/ADFG	<u>Oct - Dec:</u> DONE: Order supplies; create and test computer programs <u>Apr - June:</u> DONE: Hire personnel DONE: Apply tags to pink salmon fry at hatcheries <u>July - Sept:</u> DONE: Scan catches; recover tagged fish DONE: Decode tags DONE: Provide inseason catch composition estimates UNDERWAY: Post-season analysis using decoded tag information
96188	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in Prince William Sound	ADFG Joyce/ADFG	<u>Oct - Dec:</u> DONE: Apply thermal marks to embryos at four pink salmon hatcheries <u>Jan - Mar:</u> DONE: Collect samples from incubators <u>Apr - June:</u> DONE: Process and evaluate otoliths DONE: Develop methodology for collecting unbiased representative sampling from tenders <u>July - Sept:</u> UNDERWAY: Analyze data

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96190	Construction of a Linkage Map for the Pink Salmon Genome	ADFG Allendorf/UM	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan-Mar:</u> DONE: Initial screen of even-year fish for DNA polymorphisms DONE: Initial screen of odd-year fish for DNA polymorphisms <u>July-Sept:</u> UNDERWAY: Screen DNA polymorphisms to test for Mendelian inheritance and joint segregation DONE: Obtain gametes and create families for inheritance studies with even-year fish
96191A	Oil-Related Embryo Mortalities in PWS Pink Salmon Populations	ADFG J. Seeb/ADFG	<u>Oct - Dec:</u> DONE: Embryo deposition sampling DONE: Initiate haploid androgenesis and novel mutation screen contracts DONE: Obtain gametes, spawn second generation DONE: Send milt to University of Washington on contract to produce androgenetic haploids DONE: Begin fertilized egg incubation UNDERWAY: Analysis of embryos at ADFG genetics laboratory <u>Jan - Sept:</u> UNDERWAY: Analyze data for brood year 1995 (contracts with UAF and NYU, plus at ADFG genetics lab)
96191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA Rice/NOAA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr-June:</u> ONGOING: Final evaluation of progeny
96195	Pristane Monitoring in Mussels and Predators of Juvenile Pink Salmon & Herring	NOAA Short/NOAA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan - Mar:</u> DONE: Prepare logistics for FY96 field season <u>April - June:</u> DONE: Spring collection <u>July - Sept:</u> DONE: Collect mussel and predator tissue samples UNDERWAY: Analyze collected samples for pristane



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96196	Genetic Structure of Prince William Sound Pink Salmon	ADFG J. & L. Seeb/ ADFG	<u>Jan - Sept:</u> DONE: In-house allozyme analysis of archive samples collected prior to 1995 DONE FOR 1994-95: mtDNA analysis <u>July - Sept:</u> DONE: Field collections of 1996 samples UNDERWAY: Allozyme and DNA analyses of 1996 samples; statistical analyses of 1995 data
96210	Prince William Sound Youth Area Watch	ADFG Chugach RRC	<u>Oct - Dec:</u> DONE: Students selected to participate DONE: Students receive training DONE: Students select onshore research and testing sites DONE: Students select offshore sites DONE: Students set up database <u>Ongoing:</u> DONE: Students check onshore testing sites twice weekly DONE: Students check offshore area testing sites twice monthly DONE: Students provide data to PWSSC weekly
96214	Documentary on Subsistence Harbor Seal Hunting in PWS	ADFG Tatitlek Village	<u>Oct - Dec:</u> DONE: Award contract <u>Jan - Mar:</u> DONE: Develop story line and story board for video <u>Apr - June:</u> DONE: Shoot necessary footage, conduct interviews <u>July - Sept:</u> UNDERWAY: Edit film DELAYED TO FEBRUARY: Contractor will deliver 40 copies of videos
96220	Eastern PWS Wildstock Salmon Habitat Restoration	USFS/Schmid Eyak Native Village	<u>Oct - Mar:</u> Review of existing information DONE: Recruit fish habitat survey crew leader <u>Apr - June:</u> DONE: Identify study streams DONE: Recruit student interns DONE: Arrange logistics <u>July - Sept:</u> DONE: Conduct fisheries habitat surveys UNDERWAY: Analysis of field data

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96222	Chenega Bay Salmon Restoration -- Anderson Creek	USFS/Murphy Chenega IRA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> Interview Chenega Bay residents about Anderson Creek <u>July - Sept:</u> Complete habitat surveys Complete project EA and preliminary fish pass design  PROJECT CANCELED -- NOT FEASIBLE DUE TO STREAM POLLUTION.
96225	Port Graham Pink Salmon Subsistence Project	ADFG/Moore Port Graham	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> 250,000 pink salmon fry placed in net pens and reared to an average weight of 8 grams -- HALF RELEASED AT 0.75 GRAM AS PER MODIFIED PROPOSAL; HALF RELEASED AT 1.0 GRAM END OF JUNE DUE TO OUTBREAK OF VIBRIO <u>July - Sept:</u> DONE: Monitor pink salmon escapement into Port Graham DONE: Capture hatchery broodstock DONE: Egg take
96244	Community-Based Harbor Seal Management and Biological Sampling	ADFG/Fall Reidel/ANHSC Fall/ADFG	<u>Oct-Dec:</u> DONE: Develop contracts with the Alaska Native Harbor Seal Commission and the University of Alaska, hire technicians DONE: Hold regional training sessions for biological sampling DONE: Begin biological sample collection DONE: Hold first workshop (ANHSC) <u>Jan-Mar:</u> DONE: Distribute first proceedings report <u>Apr-June:</u> DONE: Demonstrate harbor seal traditional knowledge database (ADFG) <u>July - Sept:</u> DONE: Hold second workshop (ANHSC) -- HELD 9/18/96 DELAYED TO OCTOBER: Produce/distribute second proceedings report (ANHSC) <u>Ongoing:</u> Conduct interviews with hunters to collect traditional knowledge (ADFG)

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96255	Kenai River Sockeye Salmon Restoration	ADFG L. Seeb & Tarbox/ADFG	<u>Oct - Dec:</u> DONE: Lab analysis of 1995 allozyme samples DONE: Lab analysis of DNA samples DONE: Award contracts for DNA analysis <u>Jan-Sept:</u> DONE: Refine fishery model DONE: Fishery sample collection and in-season estimation DONE: Hydroacoustic assessment
96256	Columbia and Solf Lakes Sockeye Salmon Stocking	USFS Gillikin/USFS	<u>Oct - Dec:</u> DONE: Review by Regional Planning Team <u>July - Sept:</u> DONE; NEPA READY TO BE SIGNED ON SOLF: Analyze stream flows and update baseline limnological data
96258A	Sockeye Salmon Overescapement Project	ADFG Schmidt & Tarbox/ADFG	<u>Jan - Mar:</u> DONE: Analyze zooplankton, water quality, and hydroacoustic data <u>Apr - June:</u> DONE: Skilak -Tustumena spring fry hydroacoustics DONE: Kenai Peninsula lakes limnology DONE: Kasilof smolt program DONE: Red and Akalura lakes smolt DONE: Red and Akalura lakes limnology <u>July - Sept:</u> DONE: Skilak - Tustumena fall fry hydroacoustics DONE: Kenai Peninsula lakes limnology DONE: Red and Akalura lakes limnology UNDERWAY: Lab water chemistry and limited zooplankton analysis UNDERWAY: Data entry for final report preparation

**Exxon Valdez Oil Spill Project Status Summary**  
**1996 Work Plan**  
**Quarter Ending September 30, 1996**

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96259	Restoration of Coghill Lake Sockeye Salmon	ADFG Kyle/ADFG	<u>Jan - Mar:</u> DONE: Personnel and logistics for field season DONE: Contact USFS regarding purchase and application of fertilizer <u>April - June:</u> DONE: Enumeration and AWL sampling of smolt DONE: Apply fertilizer DONE: Three limnological surveys UNDERWAY: Analysis of smolt data <u>July - Sept:</u> DONE: Limnological surveys UNDERWAY: Analysis of limnological data
96272	Chenega Chinook Release Program	ADFG PWSAC	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> DONE: Install netpen at Crab Bay DONE: Feed and imprint smolts <u>July - Sept:</u> DONE: Take chinook eggs for incubation
96290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	NOAA Nelson/NOAA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan - Sept:</u> UNDERWAY: Solicit information from potential new user groups and begin development of interface for such groups
96291	Chenega-area Shoreline Residual Oiling Reduction	ADEC Chenega Bay and ADEC	<u>July - Sept:</u> DONE: Enter into contract with PWSEDC DONE: Form Advisory Committee UNDERWAY: Remediation plan 50% complete
96320	Sound Ecosystem Assessment (SEA)	ADFG Cooney, et al	<u>Oct - Dec:</u> Begin herring overwintering program; continue oceanographic sampling Continue data evaluation, integration and synthesis <u>Jan - Mar:</u> Plan and stage the remainder of the FY96 field studies <u>Apr - Sept:</u> Undertake remaining FY96 field studies

**Exxon Valdez Oil Spill Project Status Summary**  
**1996 Work Plan**  
**Quarter Ending September 30, 1996**

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96320E Samp	Salmon and Herring Predation	ADFG Willette/ADFG	<u>Oct-Dec:</u> DONE: Field sampling DONE: Sample processing and data entry <u>Apr-June:</u> DONE Field sampling in May DONE: Field sampling in June DONE: Sample processing and data entry <u>July-Sept:</u> DONE: Field sampling in July UNDERWAY: Limited data analysis UNDERWAY: Sample processing and data entry
96320G	Phytoplankton and Nutrients	ADFG McRoy/UAF	<u>Oct-Mar:</u> DONE: Planning for field season <u>April - June:</u> DONE: Cruises in April, May, June DONE: Hatchery time series <u>July - Sept:</u> DELAYED (CITE LACK OF FUNDS): Analyze samples
96320H	Zooplankton in the PWS Ecosystem	ADFG Cooney/UAF	<u>Oct-Mar:</u> DONE: Planning for field season <u>April - June:</u> DONE: Complete Alpha Helix cruise UNDERWAY: FY 96 data analysis and sample processing <u>July - Sept.</u> DONE: Attend SEA workshop in Seward
96320I	Isotope Tracers - Food Webs of Fish	NOAA PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Apr. 15, 1997:</u> Report due

**Exxon Valdez Oil Spill Project Status Summary**  
**1996 Work Plan**  
**Quarter Ending September 30, 1996**

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96320J	Information Systems and Model Development	NOAA/ADFG PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>April - June:</u> DONE: Second generation Catalog Services Interface online via World Wide Web interface DONE: Implement new generation visualization tools involving UCS-to-geometry UNDERWAY: Testing and refinement of 1-d nekton model DONE: Expand SEA home page
96320K	PWSAC: Experimental Fry Release	ADFG PWSAC	<u>Oct-Dec:</u> DONE: Eggs taken and incubating <u>Jan - Mar:</u> DONE: Pink fry ponded and reared DONE: Release fry -- FRY RELEASED 6/15/96 <u>July - Sept:</u> DONE: Take eggs for release in 1997
96320M	Physical Oceanography in PWS	NOAA/ADFG Salmon/ PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Jan - Mar:</u> UNDERWAY: Process data from March cruise UNDERWAY: Plan data collection for April cruise <u>April - June:</u> DONE: Cruises April, May, June
96320N	Nekton/Plankton Acoustics	NOAA/ADFG PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Jan - Mar:</u> DONE: Field measure spring herring distribution <u>April - June:</u> DONE: Field measurements DONE: Apply electroacoustic calibrations to spring 1996 data
96320Q	Avian Predation on Herring Spawn	USFS Bishop/USFS	<u>Oct-Dec:</u> UNDERWAY: Data analysis <u>June 30:</u> Submit final report -- DELAYED. REPORT OVERDUE.

**Exxon Valdez Oil Spill Project Status Summary**  
**1996 Work Plan**  
**Quarter Ending September 30, 1996**

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96320R	SEA Trophodynamic Modeling and Validation Through Remote Sensing	ADFG Eslinger/UAF	<u>Oct-Dec:</u> DONE: Planning for field season <u>Jan - Mar:</u> DONE: Deploy CLAB buoy DONE: Determine utility of remotely sensed data for monitoring flow into (vs. by) PWS UNDERWAY: Compare AVHRR and CTD data DONE: Define 3-D model grid DONE: Test physical/phytoplankton coupling with model DONE: Test phytoplankton/zooplankton coupling with model <u>April - June:</u> UNDERWAY: Build 3-D biophysical model code <u>July - Sept:</u> ONGOING: Routinely collect data through remote-sensing devices
96320T	Juvenile Herring Growth and Habitat Partitioning	ADFG Norcross/UAF	<u>Oct-Dec:</u> DONE: Develop conceptual herring recruitment model DONE: Stomach analysis UNDERWAY: Analyze broadscale horizontal distribution data UNDERWAY: Compile companion datasets for habitat analysis <u>Jan - Mar:</u> DONE: Broadscale cruise; acoustics and net sampling DONE: Catch database UNDERWAY: Historic interviews with fishermen and Native communities <u>April - June:</u> DONE: Diel surveys 4 Bays, cruises May and June, acoustics and net sampling DONE: Aerial surveys PWS, coordinated surveys of 4 diel bays DONE: Meet with APEX group to coordinate July field sampling DONE: Meet with SEA modelers and herring PIs to design survival-growth-recruitment model UNDERWAY: Stomach analysis, 1996 samples UNDERWAY: Analyze March 1996 broadscale horizontal distribution data UNDERWAY: Analyze March 1996 age-length-weight data <u>July - Sept:</u> DONE: Broadscale cruise, July cruise, acoustics and net sampling DONE: Meet with SEA group to coordinate modeling efforts (Seward, September) UNDERWAY: Analyze Mar, May, June, July, Aug, Oct age-length-weight data

**Exxon Valdez Oil Spill Project Status Summary**  
**1996 Work Plan**  
**Quarter Ending September 30, 1996**

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96320U	Energetics of Herring and Pollock	ADFG Paul/UAF	<u>Oct-Dec:</u> DONE: Process bioenergetic samples collected fall 1995 <u>Apr-June:</u> DONE: Complete sample analysis of 1995 samples DONE: Process bioenergetic samples collected spring 1996 <u>July - Sept:</u> DONE: Complete analysis of spring 1996 samples DONE: Analyze summer samples
96320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG PWSSC	<u>Apr 15:</u> DONE: Report due
96320Z1	Synthesis and Integration	ADFG Cooney/UAF	<u>Oct-Dec:</u> DONE: Develop model-based structures <u>Jan - Mar:</u> UNDERWAY: Develop synthesis plans for FY97 <u>April - June:</u> DONE: Submit single FY97 DPD and single collated FY97 report UNDERWAY: Convene workgroup meetings and teleconferences DONE: Herring working group workshop (May) <u>July - Sept:</u> DONE: Convene major synthesis workshop for SEA in Seward
96326	Completion of NRDA MM6/Data Re-analysis	DOI Ballachey/DOI	<u>July - Sept:</u> Data sets sent to contractor for re-analysis
96427	Harlequin Duck Recovery Monitoring	ADFG Rosenberg/ ADFG	<u>Oct-Dec:</u> DONE: Apply for USFS permits <u>Jan - Mar:</u> DONE: Initiate hiring process for seasonal technicians <u>Apr - June:</u> DONE: Hire technicians, arrange field logistics for field camps, boats, motors, survey equipment UNDERWAY: Begin surveys <u>July - Sept:</u> DONE: Finish surveys DONE: Data entry <u>Oct - Dec:</u> Analyze field data and begin report preparation



**Exxon Valdez Oil Spill Project Status Summary  
1996 Work Plan  
Quarter Ending September 30, 1996**

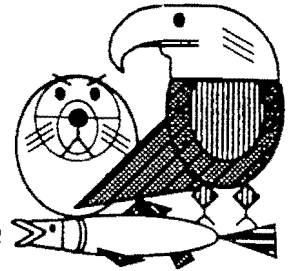
<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks To Be Completed this Quarter</u>
96507	EVOS Symposium Publication	NOAA Wright/NOAA	<u>Oct - Dec:</u> DONE: Manuscripts to project editor <u>Jan - Mar:</u> DONE: Manuscripts to typesetter DONE: Proof to authors DONE: Corrected proof to typesetter <u>Apr - June:</u> DELAYED TO AUGUST: DONE: Text to printer DONE: Proceedings published

# Exxon Valdez Oil Spill Trustee Council

Restoration Office

645 G Street, Suite 401, Anchorage, Alaska 99501-3451

Phone: (907) 278-8012 Fax: (907) 276-7178



## MEMORANDUM

TO: Trustee Council Members

FROM: Sandra Schubert  
Project Coordinator

THROUGH: Molly McCammon  
Executive Director

DATE: August 16, 1996

RE: Quarterly Project Status Summary -- June 30, 1996

RECEIVED  
AUG 26 1996

EXXON VALDEZ OIL SPILL  
TRUSTEE COUNCIL  
ADMINISTRATIVE RECORD

Attached is the *Exxon Valdez* Oil Spill Project Status Summary for the quarter ending June 30, 1996, for all projects funded by the Trustee Council during 1992, 1993, 1994, 1995, and 1996. The Summary focuses on the status of annual and final reports, and includes progress updates for FY 96 projects.

As of June 30, 1996, a total of 137 project reports had been peer reviewed and accepted by the Chief Scientist. Once accepted by the Chief Scientist, reports are submitted to the Oil Spill Public Information Center (OSPIC) where they are reviewed for proper technical formatting, and then made available to the public. As of June 30, 1996, 86 reports were available to the public through OSPIC and other libraries around the state. (See **Attachment C** for a list of libraries, and a list of reports available). An additional 28 reports were undergoing formatting review at OSPIC.

This memorandum summarizes the status of reports for each project year. **Attachment A** summarizes the status of 1992, 1993, 1994 and 1995 reports by agency. **Attachment B** lists the reports that are significantly behind schedule. Reports are considered significantly behind schedule if (1) they have not yet been submitted to the Chief Scientist or were reviewed by the Chief Scientist, returned to the PI for revision longer ago than six months, and have not been revised and resubmitted to the Chief Scientist and (2) an extended due date has not been approved by the Restoration Office.

### Status of 1992 Project Reports as of March 31, 1996

A total of 60 projects were funded in the 1992 Work Plan. With very few exceptions, a final report -- that is, a report that is subject to peer review and approval by the Chief Scientist -- is required on each 1992 project. Some projects require more than one report. (NOTE: Reports "in progress" are in peer review, are under revision by the PI in response to peer reviewer comments, or have been revised and are undergoing a second review by the Chief Scientist.)

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
76	65	9	2
Status as of March 31, 1996			
76	65	9	2

### Status of 1993 Project Reports as of June 30, 1996

A total of 37 projects were funded in the 1993 Work Plan. With some exceptions, a final report -- that is, a report that is subject to peer review and approval by the Chief Scientist -- is required on each 1993 project. Some projects require more than one report.

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
29	21	6	2
Status as of March 31, 1996			
29	21	6	2

### Status of 1994 Project Reports as of June 30, 1996

A total of 42 projects were funded in the 1994 Work Plan. Beginning with the 1994 project year, "multi-year" projects that receive Trustee Council funding in consecutive years are required to submit an "annual" report each year until the project is complete, at which point a "final" report is required. The annual report, although subject to peer review, need not be rewritten in response to peer review comments. Rather, the peer review comments are to be used to guide future work on the project. Annual reports are available to the public through OSPIC, and state on their front covers that "peer review comments have not been addressed in this report."

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
37	29	8	0
Status as of March 31, 1996 36	27	9	3

#### **Status of 1995 Project Reports as of June 30, 1996**

A total of 66 projects were funded in the 1995 Work Plan. As with FY 94 projects, annual reports are required on multi-year projects, and final reports are required on all other projects.

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
55	22	22	11
Status as of March 31, 1996 54	7	31	16

#### **Status of 1996 Projects as of June 30, 1996**

As indicated on the attached project status summary, the agency liaisons continue to report that essentially all projects are proceeding according to schedule. Of interest, construction of the spawning channel at Port Dick was completed (Project 96139A2), smolt were released on schedule into Boulder Bay near Tatitlek (Project 96127), and the final footage was filmed for the documentary on harbor seal subsistence hunting (Project 96214). The feasibility study for habitat improvements to Anderson Creek (Project 96222) was completed, and the project will be canceled due to serious probable hazardous material contamination within the stream.

In addition, you should be aware that the development of a comprehensive plan for restoring archaeological resources in Prince William Sound and Lower Cook Inlet (Project 96154) has fallen behind schedule. The plan, which is being prepared by the Chugach Heritage Foundation under contract to the USFS, is now due to be submitted to the Executive Director on August 31, 1996. The Port Graham pink salmon project (Project 96225) has also faced some difficulty. One aspect of the project is to rear a portion of the pink salmon fry to eight grams before release as a strategy for enhancing their survival rate. In fact, these fry were released ahead of schedule at the end of June due to an outbreak of "warm water vibrio," a highly infectious bacterial disease. Anticipating this potential problem, the FY 97 proposal for continuation of the project calls for rearing the fry to one gram in the event of a vibrio outbreak in FY 96.

### Conclusion

In brief, significant progress continues to be made toward the goal of making the results of studies funded by the Trustee Council available to the public through project reports. In total, 197 reports will be produced for projects funded in 1992, 1993, 1994, and 1995. As of June 30th, 137 of these reports had been peer reviewed and accepted by the Chief Scientist and only 15 had not yet been submitted for peer review. Perhaps more importantly, 86 reports on studies funded by the Trustee Council are now available to the public through OSPIC.

## ATTACHMENT A

Summary of Project Report Status as of June 30, 1996

### 1992 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	0	2	2
ADFG	26	1	4	21	20
ADNR	1	0	0	1	1
DOI	33	0	5	28	10
NOAA	12	1	0	11	9
USFS	2	0	0	2	1
<b>TOTAL</b>	<b>76</b>	<b>2</b>	<b>9</b>	<b>65</b>	<b>43</b>

### 1993 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	1	1	1
ADFG	13	1	4	8	8
ADNR	0	0	0	0	0
DOI	9	1	1	7	4
NOAA	3	0	0	3	3
USFS	2	0	0	2	1
<b>TOTAL</b>	<b>29</b>	<b>2</b>	<b>6</b>	<b>21</b>	<b>17</b>

### 1994 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	1	0	0	1	0
ADFG	18	0	2	16	9
ADNR	2	0	0	2	2
DOI	6	0	2	4	2
NOAA	6	0	2	4	5
USFS	4	0	2	2	2
<b>TOTAL</b>	<b>37</b>	<b>0</b>	<b>8</b>	<b>29</b>	<b>20</b>

## ATTACHMENT A

Summary of Project Report Status as of June 30, 1996

### 1995 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	5	2	1	2	0
ADFG	28	3	13	12	2
ADNR	1	0	0	1	1
DOI	7	1	4	2	0
NOAA	8	3	2	3	2
USFS	6	2	2	2	1
<b>TOTAL</b>	<b>55</b>	<b>11</b>	<b>22</b>	<b>22</b>	<b>6</b>

# **ATTACHMENT B** **Reports Significantly Behind Schedule**

Agency	Project Number	PI	Final or Annual	Project Title	Status of Report	FY 97 Project
DOI	93006	Birkedahl	Final	Site specific archaeology	Never submitted. Bud Rice sent memo 4/19/96 to Birkedahl's supervisors asking that it be made a priority	None
DOI	94039	Roseneau	Final	Common murre population monitoring	Returned to PI for revision 11/14/95	97144, 97163
ADFG	FS01	Fried, Bue	Final	Spawning area injury	Never submitted. Delay due to departure of Sam Sharr. June Qtr. Rpt. says expect to submit 10/1/96	None
ADFG	93033-1	?	Final	Harlequin duck - Afognak habitat assessment/PWS production	Returned to PI for revision 11/14/95	
ADFG	93033-2	Rothe	Final	Harlequin duck restoration	Waiting for Fry's analysis; 2 yrs. overdue. Sullivan contacted Fry's superiors at UCDavis 4/96	None
ADFG	95191A	J. Seeb	Annual	Egg and alevin mortalities	Due date extended to 6/30/96; still not submitted	97165, 97191A, 97196
DEC	95026	Braddock	Final	Hydrocarbon monitoring	Never submitted.	None
DEC	95060	Piper	Final	Spruce bark beetles	Never submitted. RSA'd to ADFG. June Qtr. Rpt. says expect to submit 8/31/96	None
USFS	95320Q	Bishop	Final	Avian predation on herring spawn	Due date extended to 6/30/96; still not submitted	97025



**OIL SPILL PUBLIC INFORMATION CENTER**

**645 G Street  
Anchorage, AK 99501  
(907) 278-8008  
(907) 265-9359 fax  
1-800-478-7745 Alaska  
1-800-283-7745 outside Alaska**

**Final Reports  
June 1996**

Attached is a list of published final reports for Natural Resource Damage Assessment Studies and Restoration Projects. Copies of these reports may be checked out from the Oil Spill Public Information Center. Copies are also available for viewing at the following libraries:

A. Holmes Johnson Library - Kodiak  
Alaska Historical Library - Juneau  
Alaska Resources Library - Anchorage  
Alaska State Library - Juneau  
Alaska Department of Environmental Conservation Library - Juneau  
Alaska Department of Fish and Game Habitat Library - Anchorage  
Auke Bay Fisheries Lab Library - Juneau  
Cordova Public Library - Cordova  
E.E. Rasmusson Library - University of Alaska, Fairbanks  
Fairbanks North Star Borough Library - Fairbanks  
Kenai Community Library - Kenai  
Ketchikan Public Library - Ketchikan  
Kuskokwim Consortium Library - Bethel  
Library of Congress - Washington, D.C.  
National Library of Canada - Ottawa  
Northwest Community College Learning Resource Center - Nome  
Tuzzy Consortium Library - Barrow  
University of Alaska, Anchorage Consortium Library - Anchorage  
University of Alaska, Southeast Library - Juneau  
University of Washington Library - Seattle  
U.S. Fish and Wildlife Service Library - Anchorage  
Valdez Consortium Library - Valdez  
Z.J. Loussac Library - Anchorage

Copies of the final reports may be purchased from the following:

**Anchorage Copy Centers:**

Clay's Printing - (907) 561-6270  
TimeFrame - (907) 562-3822  
National Technical Information Service (NTIS) - (703) 487-4650

## FINAL REPORTS

June 1996

### Natural Resource Damage Assessment Studies

\* = new additions to this list.

#### Air/Water 3

Short, J.W. and P.M. Harris. 1996. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill I: Chemical sampling and analysis, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay, Alaska.

#### Air/Water 3 (Subtidal 3A)

Short, J.W. and P. Rounds. 1995. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill II: analysis of caged mussels, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3, Subtidal Study Number 3A), National Oceanic and Atmospheric Administration, Juneau, Alaska.

#### Archaeology 1

Reger, D.R., J.D. McMahan, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Archaeology Study Number 1), Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology, Anchorage, Alaska.

#### \*Coastal Habitat 1B

Babcock, M.B. and J.W. Short. 1996. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites within Prince William sound and the Gulf of Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Coastal Habitat Study Number 1B), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

## **Fish/Shellfish 2**

Sharr, S., B.G. Bue, S.D. Moffitt, A. Craig, and D.G. Evans. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 2), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska.

## **Fish/Shellfish 3**

Sharr, S., C.J. Peckham, D.G. Sharp, L. Peltz, J.L. Smith, M.T. Willette, D.G. Evans, and B.G. Bue. 1996. Coded wire tag studies on Prince William Sound salmon, 1989-1991, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 3), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Anchorage, Alaska.

## **Fish/Shellfish 4**

Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4, NMFS Component), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

## **Fish/Shellfish 4A**

Willette, T.M., G. Carpenter, P. Shields, and S.R. Carlson. 1994. Early marine salmon injury assessment in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4A), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska.

## **\*Fish/Shellfish 5 (Restoration 90)**

Hepler, K.R., P.A. Hansen and D.R. Bernard. 1994. Impact of oil spilled from the *Exxon Valdez* on survival and growth of Dolly Varden and cutthroat trout in Prince William Sound, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 5; Restoration Study Number 90), Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Alaska.

#### Fish/Shellfish 7B and 8B

Swanton, C.O., T.J. Dalton, B.M. Barrett, D. Pengilly, K.R. Brennan, and P.A. Nelson. 1993. Effects of pink salmon (*Oncorhynchus gorbuscha*) escapement level of egg retention, preemergent fry, and adult returns to the Kodiak and Chignik management areas caused by the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 7B and 8B), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Alaska.

#### Fish/Shellfish 18

Haynes, E., T. Rutecki, M. Murphy, and D. Urban. 1995. Impacts of the *Exxon Valdez* oil spill on bottomfish and shellfish in Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 18), U.S. National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

#### Fish/shellfish 22

Freese, J.L. and C.E. O'Clair. 1995. Injury to crabs outside Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 22), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

#### Fish/Shellfish 27

Schmidt, D.C., K.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. Kind, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. 1993. Sockeye salmon overescapement, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Fish/Shellfish Study Number 27), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Soldotna, Alaska.

#### Fish/Shellfish 30

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**Exxon Valdez Oil Spill Project Status Summary**  
**1992 Work Plan**  
**Quarter Ending June 30, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
AD	Administrative Director's Office	ALL	No report required.		
ARC1	Archaeological Survey	ADNR	Final report accepted by OSPIC; available to public.	<p>Reger, D.R., J.D. McMahon, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations.</p> <p>Four archaeological sites from which adequate collections and radiocarbon samples were obtained were sampled for sediments to test for presence of oil. Two sediment samples (Shuyak Island and Chenega Island) tested positive for oil. None of the sites yielded radiocarbon dates which appear to be significantly skewed from the expected age range. The results of the study show that reasonable dates can be obtained from the test sites despite presence of oil remains on the beach surface or in the case of two sites from within the cultural deposits. The results of the study are applicable to the sites studied and useful for management decisions based on broad general conclusions.</p>	
AW1	Surface Oil Maps	ADEC	Project terminated. DEC/NOAA overflight charts stored in Alaska Archives.	DEC/NOAA overflight charts stored in Alaska Archives.	
B02	Boat Surveys	DOI	Final report submitted to OSPIC; undergoing format review.	<p>Klosiewski, S.P. and K.K. Laing. 1994. Marine bird populations of Prince William Sound, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Populations of 9 species or species groups (black oystercatcher, pigeon guillemot, cormorants, harlequin duck, loons, scoters, newgull, arctic tern, northwestern crow) declined more than expected in the oiled zone of Prince William Sound suggesting an oil effect. Most injured species were ecologically tied to intertidal or nearshore areas.</p>	Continued as 93045 and 94159.

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**Exxon Valdez Oil Spill Project Status Summary**  
**1992 Work Plan**  
**Quarter Ending June 30, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
B03	Murres Damage Assessment Closeout	DOI	Final report submitted to OSPIC; undergoing format review.	<p>Nysewander, D.R., C.H. Dippel, G.U. Byrd and E.P. Knudtson. 1993. Effects of the T/V Exxon Valdez oil spill on murres: A perspective from observations at breeding colonies. U.S. Fish and Wildlife Service. Homer.</p> <p>Numbers were reduced, nesting was delayed, and productivity rates were far below normal at major colonies within the spill trajectory. Reproductive success improved slightly in 1991.</p>	Related to R11, 93022 and 94039.
B04	Eagles Damage Assessment Closeout	DOI	Final report accepted by OSPIC; copies currently being made.	<p>Bauman, T.D., P.F. Schempff, and J.A. Bernatowicz. 1994. Effects of the Exxon Valdez oil spill on bald eagles. U.S. Fish and Wildlife Service. Anchorage.</p> <p>Reproductive success of Prince William Sound bald eagles was significantly impaired in 1989, and nest failures were correlated with the distribution of crude oil on beaches. Although estimated direct mortality throughout the spill area was relatively large (about 300 - 900 eagles), no change in the population could be detected due to wide variation in population counts. The Prince William Sound eagle population was expected to return to its prespill level by 1993.</p>	
B06	Marbled Murrelets Damage Assessment Closeout	DOI	Final report submitted to OSPIC; undergoing format review.	<p>Kuletz, K.J. 1994. Marbled murrelet abundance and breeding activity at Naked Island, Prince William Sound, and Kachemak Bay, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>The marbled murrelet population at a site within the path of the oil (Naked Island) was lower in 1989 than in prespill years, but returned to normal in 1990. Murrelet numbers in Kachemak Bay where oiling was minimal did not change following the spill.</p>	Related to R15, 93051B and 94102.

**DRAFT**

**Exxon Valdez Oil Spill Project Status Summary**  
**1992 Work Plan**  
**Quarter Ending June 30, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
B07	Storm Petrels Damage Assessment Closeout	DOI	Final report submitted to OSPIC; undergoing format review.	<p>Nishimoto, M. and G.U. Byrd. 1994. Effects of oil from the T/V <i>Exxon Valdez</i> spill on fork-tailed storm petrels breeding in the Barren Islands, Alaska. U.S. Fish and Wildlife Service. Homer.</p> <p>At the largest storm-petrel colony within the spill trajectory (Barren Islands), no evidence of adverse effects to breeding petrels was found. Burrow occupancy rates were above average, nesting chronology was not delayed, and productivity was normal.</p>	
B08	Kittiwakes Damage Assessment Closeout	DOI	Draft report peer reviewed; returned to PI for revision March 22, 1996.	<p>Irons, D.B. 1994. Effects of the <i>Exxon Valdez</i> oil spill on black-legged kittiwake colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The number of breeding pairs did not decline at colonies in the oiled area of Prince William Sound but reproductive success in 1989 was less than expected, apparently due to low hatching success. Reproductive success did not recover by 1992 but whether the decline was due to the spill is unknown.</p>	TSI
B09	Pigeon Guillemots Damage Assessment Closeout	DOI	Final report accepted by OSPIC; copies currently being made.	<p>Oakley, K.L. and K.J. Kuletz. 1994. Population, reproduction and foraging of pigeon guillemots at Naked Island, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The population at a major breeding site within the spill trajectory (Naked Island) declined by 50% compared to 1972-1973 levels. A long-term decline within Prince William Sound predated the spill and, therefore, the decline at naked Island could not be attributed totally to the spill. Reproduction was largely normal following the spill.</p>	93034 and 94173

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
B11	Harlequin Ducks Damage Assessment Closeout	ADFG	Draft report peer reviewed; returned to PI for revision February 13, 1996.	<p>New statistical analysis of bile results indicates elevated hydrocarbon concentrations in western Prince William Sound and Kodiak birds, but also in eastern Prince William Sound birds, compared to Juneau samples. Concentrations correlate positively with proximity to the spill origin.</p>	Project conducted in conjunction with R71 and continued as 93033. Also related to B2, CH1B, TS1, R103, and 93036.
B12	Shorebirds Damage Assessment Closeout	DOI	<p>The results of this project will be presented in two reports:</p> <p>(1) Final report on migrant shorebirds accepted by Chief Scientist. Not yet at OSPIC.</p> <p>(2) Final report on black oystercatchers accepted by OSPIC; copies currently being made.</p>	<p>(1) Martin, P.D. 1993. Effects of the <i>Exxon Valdez</i> oil spill on migrant shorebirds using rocky intertidal habitats of Prince William Sound, Alaska, during Spring 1989. U.S. Fish and Wildlife Service, Anchorage.</p> <p>(2) Andres, B.A. 1994. The effects of the <i>Exxon Valdez</i> oil spill on black oystercatchers breeding in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>(1) Spring migrant shorebirds (surfbirds and black turnstones) escaped impacts because shorelines used by these species (particularly around Montague Island) were largely unoiled.</p> <p>(2) Black oystercatcher breeding was disrupted and hatching success reduced. Chicks raised on oiled beaches grew more slowly than chicks raised on unoiled beaches, perhaps due to ingestion of contaminated food.</p>	Related to R17, R103 and 93035.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
CH1A	Coastal Habitat Damage Assessment	USFS	Final report accepted by OSPIC; copies currently being made.	Highsmith, R.C., et al. Comprehensive assessment of coastal habitat. School of Fisheries and Ocean Sciences, UAF.  Serious and long-term lasting effects on intertidal algae. Recovery occurring but slow to none in upper intertidal habitat. Full recovery expected. Intertidal invertebrates indicate negative effects from spill. Intertidal fish findings were inconclusive.	Continued as R102, 93039 and 94086.
CH1B	Hydrocarbons in Mussels	NOAA	Redraft of final report submitted to Chief Scientist March 4, 1996.	Babcock, M. NOAA. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites in PWS and the Gulf of Alaska.  <i>Exxon Valdez</i> oil is located in several sites. Reductions in hydrocarbons are seen at several sites in PWS over 1989.	R103
FS01	Spawning Area Injury	ADFG	REPORT OVERDUE. Was to be submitted to Chief Scientist by August 15, 1995; now expected October 1, 1996. [Note: Report will present findings from both FS01 and R60B.]	Fried, S. and B. Bue  Documented oil contamination of Prince William Sound pink salmon spawning area. Improved current and historic pink salmon escapement estimates which are necessary for accurate estimates of total wild returns. For preliminary results, see 1989, 1990 and 1991 NRDA Draft Status Reports.	Project conducted in conjunction with R60B.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS02	Pre-emergent Fry	ADFG	Final report accepted by OSPIC; available to public.	Sharr, S, B. Bue, et al. Injury to salmon eggs and pre-emergent fry in PWS. ADF&G.  Measured higher embryo mortalities in oil-contaminated streams than in unoiled streams.	Project conducted in conjunction with R60C; continued as 93002 and 94191.
FS03	Coded-Wire Tags Damage Assessment	ADFG	Final report accepted by OSPIC; available to public.	Sharr, S., et al. Coded wire tag studies on PWS salmon, 1989-91.  Unable to detect significant differences in survival to adults from fry emerging from oiled and control streams. Also unable to detect significant difference in survival of hatchery fish reared in oiled versus unoiled areas of Prince William Sound.	Project conducted in conjunction with R60A; continued as 93067, 93068, 94185, and 94320B.
FS04A	Early Marine Salmon Damage Assessment	ADFG	Final report accepted by OSPIC; available to public.	Willette, M., et al. Early marine salmon injury assessment in PWS. ADF&G  Detected reduced growth and survival of fry rearing in oiled areas in 1989. No significant differences in growth and survival between oiled and nonoiled areas in subsequent years. Rate of adult returns to unoiled hatcheries twice that of oiled hatcheries in 1990.	Related to most projects in 94320 (PWS System Investigation). FS1, FS2, FS3, FS4A, and FS4B measured oil damages to specific life stages. FS28 incorporated their results into a model to estimate population level damages.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS04B	Juvenile Pinks	NOAA	Final report accepted by OSPIC; available to public.	<p>Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats. NOAA, NMFS, Auke Bay Lab, Juneau, AK.</p> <p>Documented exposure and contamination of juvenile salmon in Prince William Sound. Contamination was associated with reduced growth. Ingestion of oil or oiled prey was route of contamination.</p>	FS4A, AW3, and ST3A.
FS05	Dolly Varden Damage Assessment	ADFG	Final report accepted by Chief Scientist. Not yet at OSPIC. Report includes data from R090.	<p>Hepler, K.R., P. A. Hansen, D.R. Bernard. Impact of oil spilled from the <i>Exxon Valdez</i> on survival and growth of Dolly Varden and cutthroat trout in PWS, AK. ADF&amp;G.</p> <p>Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.</p>	Combined with R90.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
FS11	Herring Injury	ADFG	Redraft of report submitted to Chief Scientist March 14, 1995. [NOTE: Report will include nine articles prepared for the Canadian Journal of Fisheries and Aquatic Science and will be included in the proceedings of the EVOS symposium.]	Brown, E. D., et al. Injury to Prince William Sound Following the <i>Exxon Valdez</i> Oil Spill.  Adult herring migrating to the spawning grounds in 1989 were exposed to oil. Exposure to oil continued throughout 1989 and into 1990. Internal tissues were damaged but the short- and long-term effects are speculative. There may have been a short-term effect which inhibited egg deposition and a long-term reproductive impairment (reduced survival of offspring). Eggs were deposited in oiled areas in 1989. Larvae hatched from exposed embryos suffered reduced survival.	Similar to 94166 (Herring Spawn Deposition). Also related to 94165 and 94320.
FS13	Effects of Hydrocarbons on Bivalves	ADFG	Redraft of report submitted to Chief Scientist February 14, 1996.		Clams are important prey for ducks, sea otters, river otters, and bears. This study is related to studies of these species and to 93017.

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FS27	Sockeye Salmon Overescapement	ADFG	Final report accepted by OSPIC; available to public.	<p>Schmidt, D.C., T.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. King, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. 1993. Sockeye salmon overescapement, <i>Exxon Valdez</i> Oil Spill State/Federal Natural Resource Damage Assessment Final Report, ADFG, Commercial Fisheries Management and Development Division, Soldotna, AK.</p> <p>Approximately ten to fifteenfold reduction in Kenai River smolt when compared to brood year 1987. Reduced smolt production from Akalura and Red Lakes, Kodiak Island. Reduced harvests for the Kenai are forecast for 1994 with returns below escapement levels possible for 1995 and 1996. Minimal harvests of Kenai River sockeye salmon are likely. Reduced harvests are forecast for Red and Akalura Lakes for 1994 through 1996.</p>	Continued as 93002 and 94258. R53 acquired new information to facilitate management of anticipated reduced future runs. R113 examined potential for hatchery-reared fry in Red Lake, but forecasted returns make the project unfeasible.
FS28	Run Reconstruction	ADFG	Final report accepted by Chief Scientist January 26, 1996; undergoing format review at OSPIC.	<p>Geiger, H., et al. Run reconstruction and life-history model.</p> <p>Estimated losses to adult populations from oil damages to early life stages at 2 to 3 million in 1990, and 40 to 70 thousand in 1991. Projected losses of 100 to 200 thousand adults in 1993 and 1994.</p>	Through this project, results from FS1, FS2, FS3, FS4A and FS4B were incorporated into a model to estimate population level damage.

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FS30	Database Management	ADFG	Final report accepted by OSPIC; available to public.	<p>DiCostanzo, C. and B.P. Simonson. 1993. Database management, <i>Exxon Valdez</i> Oil Spill Final Report, ADF&amp;G, Division of Commercial Fisheries, Juneau, AK.</p> <p>Software was written to provide access to fish harvest database using the ADFG commercial fisheries Wide-Area Network (WAN). Procedures were implemented to provide reports in numerous database, spreadsheet, and statistical formats. Documentation and guidelines for using the harvest database were completed. WAN capability is now available between Juneau, Cordova, Anchorage, Kodiak, Soldotna, and Homer.</p>	This database provides a repository for all NRDA and restoration projects information.
MM1	Humpback Whales Damage Assessment	NOAA	Final report accepted by OSPIC; available to public.	<p>Dalheim, M. and O. von Ziegesar. 1993. Effects of the <i>Exxon Valdez</i> oil spill on the abundance and distribution of humpback whales (<i>megaptera novaeangliae</i>) in Prince William Sound. NMFS, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, photographic analysis of PWS humpbacks revealed 59 whales identified in 119 encounters. In 1990, 66 whales were identified in 201 encounters. The number of humpbacks encountered per day was less in 1989 and 1990 than in 1988. Because of the difference in survey effort before and after the spill, it is difficult to determine whether there was a difference in the number of humpbacks using PWS. Regarding distribution of whales in PWS: In 1988 and 1990, more whales used the Lower Knight Island Passage than in 1989. Increased vessel and aircraft traffic and distribution of prey may have been contributing factors for the temporary redistribution of whales during 1989. Despite considerable research effort, only one PWS humpback was documented to move from PWS to southeastern Alaska during 1989.</p>	

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MM2	Killer Whales Damage Assessment	NOAA	Final report accepted by OSPIC; available to public.	<p>Dalheim, M. and C. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound, Kodiak Archipelago, and Southeast Alaska. National Marine Mammal Laboratory, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, 8 resident (143 killer whales) and 4 transient pods (34 whales) were documented in 89 encounters. In 1990, 9 resident pods (148 whales) and 4 transient pods (30 whales) were identified in 80 encounters. During 1991, 7 resident pods (105 whales) and 2 transient pods (14 whales) were identified in 54 encounters. Despite increased effort over these 3 years, the number of encounters appears to be decreasing. The missing animals were not seen near Kodiak Island or southeast Alaska. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the 1989-1991 period. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, 4.3% in 1991, and zero in 1992. Killer whale annual mortality rates are usually less than 2%.</p>	

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MM6 (1of3)	Sea Otter Damage Assessment	DOI	The results of this project will be presented in 19 reports -- 15 reports have been accepted by the Chief Scientist (10 are available to the public at OSPIC); 4 reports have been peer reviewed and returned to the PIs for revision.	(1) Ballachey, B.E. Biomarkers of damage to sea otters in PWS following potential exposure to oil spilled from the T/V <i>Exxon Valdez</i> . [Final report accepted by OPSIC; available to public] (2) Ballachey, B.E. and D.M. Mulcahy. Hydrocarbon residues in tissues of sea otters ( <i>Enhydra lutris</i> ) collected from southeast Alaska. [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.] (3) Ballachey, B.E. and D. M. Mulcahy. Hydrocarbons in hair, livers and intestines of sea otters ( <i>Enhydra lutris</i> ) found dead along the path of the <i>Exxon Valdez</i> oil spill [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.] (4) Bodkin, J.L., D.M. Mulcahy and C. Lensink. Age-specific reproduction in female sea otters ( <i>Enhydra lutris</i> ) from southcentral Alaska: analysis of reproductive tracts. [Report approved by OSPIC; copies being made] 5) Bodkin, J.L. and M.S. Udevitz. An intersection model for estimating sea otter mortality from the <i>Exxon Valdez</i> oil spill along the Kenai Peninsula. [Final report accepted by OSPIC; available to public]	Continued as 93043.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
MM6(2of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	<p>(6) Burn, D.M. Boat-based population surveys of sea otters (<i>Enhydra lutris</i>) in PWS in response to the <i>Exxon Valdez</i> oil spill. [Report accepted by Chief Scientist; not yet at OSPIC.]</p> <p>(7) DeGange, A.R., D.C. Douglas, D.H. Monson and C. Robbins. Surveys of sea otters in the Gulf of Alaska in response to the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public.]</p> <p>(8) Doroff, A.M. and J.L. Bodkin. Sea otter foraging behavior and hydrocarbon levels in prey following the <i>Exxon Valdez</i> oil spill in PWS, Alaska [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.]</p> <p>(9) Doroff, A.M. and A.R. DeGange. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public.]</p> <p>(10) Lipscomb, T.P., R.K. Harris, R.B. Moeller, J.M. Fletcher, R.J. Haebler and B.E. Ballachey. Histopathologic lesions associated with crude oil exposure in sea otters. [Final report accepted by OSPIC; copies being made]</p> <p>(11) Lipscomb, T. P., R.K. Harris, A.H. Rebar, B.E. Ballachey and R.J. Haebler. Pathological studies of sea otters. [Report approved by OSPIC; copies being made]</p> <p>(12) Monnett, C. and L.M. Rotterman. Movements of weanling and adult female sea otters in PWS after the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public.]</p>	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
MM6(3of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	(13) Monnett, C. and L.M. Rotterman. Mortality and reproduction of female sea otters in PWS. [Final report accepted by OSPIC; available to public.] (14) Monnett, C. and L.M. Rotterman. Mortality and reproduction of sea otters oiled and treated as a result of EVOS. [Final report accepted by OSPIC; available to public.] (15) Monson, D.H. and B.E. Ballachey. Age distributions and sex ratios of sea otters found dead in PWS following the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public] (16) Mulcahy, D.M. and B.E. Ballachey. Hydrocarbon residues in tissues of sea otters ( <i>Enhydra lutris</i> ) collected following the <i>Exxon Valdez</i> oil spill. [Draft report peer reviewed; returned to PI for revision March 25, 1996; redraft expected January 31, 1997.] (17) Rebar, A.H., B.E. Ballachey, D.L. Bruden and K.A. Kloecker. Hematology and clinical chemistry of sea otters captured in PWS following the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; copies being made] (18) Rotterman, L.M. and C. Monnett. Mortality of sea otter weanlings in eastern and western PWS during the winter of 1990-91. [Final report accepted by OSPIC; available to public.] (19) Udevitz, M.S., J.L. Bodkin and D.P. Costa. Detection of sea otters in boat based surveys in PWS. [Final report accepted by OSPIC; available to public.]	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R011	Murre Recovery Monitoring	DOI	Final report accepted by OSPIC; copies currently being made.	<p>Dragoo, D.E., G.V. Byrd, D.G. Roseneau, D.A. Dewhurst, J.A. Cooper, and J.H. McCarthy. 1994. Population levels and reproductive performance of murres based on observations at breeding colonies four years after the T/V <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Homer</p> <p>Numbers of murres breeding at major colonies within the trajectory remained lower in 1992. Breeding chronology was delayed. Productivity at the Barren Islands was higher than in other postspill years, but still lower than normal. Productivity at Puale Bay was normal.</p>	Continued as 93022 and 94039. Also related to B3.
R015	Marbled Murrelet Restoration Study	DOI	<p>The results of this project will be presented in two reports:</p> <p>(1) Final report submitted to OSPIC; undergoing format review.</p> <p>(2) Final report submitted to OSPIC; undergoing format review.</p>	<p>(1) Kuletz, K.J., D.K. Marks, and N.L. Naslund. 1994. At-sea abundance and distribution of marbled murrelets in the Naked Island area, Prince William Sound, Alaska, in Summer, 1991 and 1992. U.S. Fish and Wildlife Service, Anchorage</p> <p>(2) Kuletz, K.J., N.L. Naslund, and S.K. Marks. 1994. Identification of marbled murrelet nesting habitat in the <i>Exxon Valdez</i> oil spill zone. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Using ground search techniques, 10 tree nests were found on Naked Island in 1991 and 1992. Nest trees were in stands of high volume and size class trees, and upland activity of murrelets throughout Prince William Sound was highest in such stands.</p>	Continued as part of 93051 and 94505 (closeout).

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R047	Stream Habitat Assessment	ADFG	Final report accepted by OSPIC; available to public.	<p>Kuwada, M. and K. Sundet. 1993. Stream Habitat Assessment Project: Afognak Island. ADF&amp;G.</p> <p>About 250 km of shoreline and 260 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on Afognak Island, resulting in discovery of 167 anadromous streams totaling about 56 km. Stream habitat parameters and upper extents of anadromous distribution were documented, and streams were mapped by GPS.</p>	Continued as part of 93051 and 94505 (closeout). Supported evaluation of land for habitat protection.
R053	Kenai River Sockeye Salmon Restoration	ADFG	Final report accepted by OSPIC; available to public.	<p>Tarbox, K., et al. Kenai River sockeye salmon restoration.</p> <p>Successful collection of baseline and fishery samples for genetic stock identification. Unsuccessful in choosing new adult in-river hydroacoustic equipment. Successful hydroacoustic enumeration of returning adult salmon in Upper Cook Inlet.</p>	R59 analyzed genetic samples collected by this project.
R059	Genetic Stock Identification	ADFG	Annual report accepted by OSPIC; available to public.	<p>Seeb, J. and L. Seeb. Assessment of genetic stock structure of salmonids. ADF&amp;G. June 1993.</p> <p>Genetic data were collected during 1992 from spawning populations contributing to mixed-stock harvests of sockeye salmon in Cook Inlet. These data can be used to estimate the presence of Kenai River stocks in mixed-stock areas of Upper Cook Inlet.</p>	R53 collected spawning samples.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R060A/B	Prince William Sound Pink Salmon	ADFG	R060A: Final report submitted to OSPIC; available to public. R060B: Findings will be presented in report being prepared under Project FS01.	R060A: Sharr, S., et al. Coded wire tag studies on PWS salmon, 1992. R060B: See FS01.  R060A: The CWT program helped reduce the commercial harvest on damaged pink salmon populations by providing fishery managers with timely inseason fishery stock composition estimates. R060B: The escapement project provided improved pink salmon escapement information which was essential for the precise fisheries management required to protect damaged wild stocks.	Continued as 93067, 94184 (report preparation) and 94320B. Also related to R60C, which monitors and investigates mechanisms for oil damage to early life stages of pink salmon populations.
R060C	Pink Salmon Egg/Fry	ADFG, NOAA	The results of this project will be presented in two reports: (1) ADFG report accepted by OSPIC; available to public. (2) NOAA findings included in annual report prepared under 94191. See 94191 for status.	(1) Sharr, Samuel and C. Peckham. 1994. Coded wire tag studies on Prince William Sound salmon, 1992. ADFG (2) See 94191.  (1) Persistence of elevated mortalities among embryos in oiled streams versus those in unoiled streams suggests genetic damage. (2) Oil exposures completed for 1992 and 1993 brood years. All 1992 brood pinks died from bacterial kidney disease by June 1994. Spawning of 1993 brood expected in September 1995, with survival of progeny to be determined in early 1996.	Continued as 93003 and 94191. Other related projects include B11, CH1B, R60AB, R103, and 93036.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R071	Harlequin Duck Restoration and Monitoring	ADFG	Draft final report submitted to Chief Scientist April 15, 1996.	<p>Rothe, T. Breeding ecology of harlequin ducks in PWS, Alaska. ADF&amp;G.</p> <p>Crowley, D.W. 1993. Breeding habitat of harlequin ducks in PWS, AK. MS Thesis. Oregon State University, Corvallis, OR.</p> <p>Comparative harlequin data in eastern Prince William Sound for B11. 1991-1992 harlequin production in eastern Prince William Sound similar to prespill. Techniques devised to capture and track harlequins. Breeding stream parameters and nest sites described. Additional oiled mussel beds identified. Description and analysis of harlequin breeding stream habitat in eastern PWS produced in an M.S. thesis, Oregon State University (Crowley 1994).</p>	B11 corroborated harlequin status in Prince William Sound. R103 documented continued oiled prey. B2 corroborates harlequin status in PWS.
R073	Harbor Seals	ADFG	Final report accepted by OSPIC; available to public.	<p>Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in PWS and adjacent areas following EVOS. ADF&amp;G, Wildlife Conservation Division, Fairbanks, AK.</p> <p>Harbor seals continued to use heavily oiled haulouts even when unoiled sites were available nearby. They were observed to give birth and care for their pups on these sites. The pelage of both pups and adults became oiled when they used these sites or contacted oil in the water. However, the pelage became cleaner with time if they did not continue to use oiled sites. Many carcasses recovered were either stillborn or died shortly after birth. Observations suggest that stress and/or toxic effects of oil resulted in abortions, premature births, and increased mortalities in heavily oiled areas. Four book chapters prepared and in press detailing results of MM5 study.</p>	Started in 1989 as MM5. Continued as 93046 and 94064.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R090	Dolly Varden Char Monitoring	ADFG	Report being prepared under Project FS05.	See FS05.  Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.	Project combined with FS05. R90 and R106 provide information on populations of Dolly Varden and cutthroat trout for 94320 (Ecosystem Study Plan).
R092	GIS Mapping and Analysis: Restoration	ADNR	No report required.	Provided mapping and database support for restoration projects. Developed timber harvest database and land status and parcel maps for imminent threat parcels. Contributed to a 3-volume data dictionary produced for the Trustee Council by the Nature Conservancy.	Supported numerous restoration projects.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
3102	Herring Bay Experimental and Monitoring Study	ADFG	Final report accepted by OSPIC; available to public.	Highsmith, R.C., M.S/ Stekoll, A.J.Hooten, P. van Tamelen, L. Deysher, L. McDonald, D. Strickland and W.P. Erickson. 1993. Herring Bay experimental and monitoring studies. School of Fisheries and Ocean Sciences, UAF.  Cover of the dominant intertidal alga, <i>Fucus gardneri</i> , was reduced at oiled/cleaned sites. <i>Fucus</i> recruitment was poor in the mid- to upper intertidal, probably due to lack of shelter from desiccation and heating by adult plants. Limpet densities continued to be lower in the upper intertidal. Recovery appeared to be occurring in the lower intertidal zone in 1990-1991 and in the upper intertidal in 1993. Results have been incorporated into an interaction web to elucidate potential oil spill effects on community dynamics.	Continued as 93039 and 94086.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93103	Oiled Mussels	ADFG, NOAA, DOI	The results of this project will be presented in four reports: (1) NOAA annual accepted by OSPIC; available to public. (2) DOI/FWS findings being incorporated into report on 93035. (3) ADFG final report approved by OSPIC. Available to public. (4) DOI/NPS final report accepted by Chief Scientist. Not yet at OSPIC.	(1) Babcock, M., P.M.Rounds, C. Brodersen and S. Rice. 1993. Recovery monitoring and restoration of intertidal oiled mussel beds in Prince William Sound impacted by the <i>Exxon Valdez</i> oil spill. NOAA, NMFS, Auke Bay Laboratory, Juneau, Alaska. (2) See 93035. (3) Faro, J.B., R.T. Bowyer, et al. 1994. River otter component of the oiled mussel bed study. (4) Irvine, G. 1993 Geographic extent and recovery monitoring of intertidal oil in mussel beds in Gulf of Alaska effected by the <i>Exxon Valdez</i> oil spill.  (1) Identified 27 mussel beds within PWS with total petroleum hydrocarbons greater than 10,000 mg/g wet weight. Site manipulation was conducted at three heavily oiled mussel beds. (2) Black oystercatcher chicks raised on oiled sites grew more slowly than chicks raised on unoiled sites. (3) Differences in levels of blood haptoglobin and Interleukin-6 ir, previously found to be elevated in river otters inhabiting oiled compared to nonoiled areas in PWS, were not observed in summer 1992. River otters from oiled areas continued to regain body size from levels noted in 1990. Suggests that river otters may be recovering from chronic effects that were observed in 1990 and 1991.	Continued as 93036, 94090, and 95090.
R104A	Site Stewardship	DOI	Final report accepted by OSPIC; copies currently being made.	Corbett, D.G. 1994. Development of the Alaska Heritage Stewardship Program for protection of cultural resources at increased risk due to the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage, AK.  Increased public knowledge of archaeological sites following the spill led to increased vandalism. A stewardship program to train local residents to protect cultural resources was developed.	93006, 94007

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R105	Instream Survey Restoration Implementation Planning	ADFG, USFS	The results of this project will be presented in two reports (report writing funded under 93063): (1) Final report available to public at OSPIC. (2) USFS report accepted by Chief Scientist. Not yet at OSPIC.	(1) Willette, M. Survey and evaluation of instream habitat and stock restoration techniques for wild pink and chum salmon. (2) Weidemeyer, K. Survey and evaluation of instream habitat and stock restoration techniques for anadromous fish.  A number of sites were reviewed, evaluated, and ranked for possible instream restoration efforts. A number of efforts have subsequently been implemented.	Continued as 93063.
R106	Dolly Varden Restoration	ADFG	Final report accepted by OSPIC; available to public.	McCarron, S. and A.G. Hoffman, 1993. Technical support study for the restoration of Dolly Varden and cutthroat trout populations in PWS. ADF&G, Division of Sport Fish, Anchorage, AK.  The nature and extent of injury to Dolly Varden and cutthroat trout was documented in FS5. The goal of R106 was to provide information for developing a management plan to protect impacted stocks, while allowing for continued recreational fishing for sport anglers where stocks could support fisheries. Sixty-one streams were surveyed to provide this information.	FS5 and 94139.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320H	Role of Zooplankton in PWS Ecosystem	ADFG	See 94320A.	Time series of zooplankton biomass tracks predation on 0-class fish in April, May, and June.	95320H
94320I	Food Web Dependencies in PWS Ecosystem/Stable Isotopes	ADFG	See 94320A.	<u>Food Web of Fishes</u> - Conducted isotopic analysis of approximately 500 samples (i.e, roughly 2,000 isotopic determinations). <u>Marine Mammal Trophic Energetics</u> - Conducted isotopic analysis of vibrissae of 23 seals, roughly 30 samples per whisker.	
94320J	Information Systems and Model Development	ADFG	See 94320A.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R113	Red Lake Sockeye Salmon Restoration	ADFG	Project canceled based on findings of FS27.	Red Lake does not need restoration effort. This project was funded in anticipation of poorer returns of sockeye salmon to Red Lake than actually occurred.	Related to FS27. NEPA compliance for Red Lake restoration project was funded through 93030, which was canceled when the project was dropped.
RT	Restoration Team	ALL	No report required.		
ST1A	Subtidal Sediments	NOAA	Final report approved by OSPIC; available to public.	O'Clair, et al. NOAA. Petroleum hydrocarbon induced injury to subtidal sediment resources.  Subtidal sediments have been found to be contaminated at no fewer than 15 sites within Prince William Sound by June 1990. Contamination had reached at least 20 meters at some sites. Evidence of hydrocarbon movement downslope into subtidal sediments was detected by 1991.	Continued as 93047 and 94285. Other related projects include ST1B.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST1B	Subtidal Microbial	ADEC	Final report accepted by OSPIC; available to public.	<p>Braddock, Joan F., B. Rasley, T. Yeager, J. Lindstrom, D. Brown. Hydrocarbon mineralization potentials and microbial populations in marine sediments following the <i>Exxon Valdez</i> oil spill. DEC</p> <p>The numbers and activity of oil-degrading microorganisms were measured in sediments periodically for two years after the oil spill. Populations of oil-degrading microorganisms were significantly higher in sediments collected at oiled sites relative to reference sites. This information is useful in establishing the extent of contamination of the oil with time and also provides evidence that biodegradation is occurring naturally in Prince William Sound.</p>	93047
ST2A	Shallow Benthic	ADFG	No report required. (Data/findings incorporated into report on 93047.)	<p>See 93047.</p> <p>At oiled sites there was a decrease in some subtidal organisms relative to unoiled sites. Partial recovery observed in 1991.</p>	Continued as 93047 and 94285. Other related projects include B11, CH1A, R103, and TM3.
ST2B	Deep Water Benthic	ADFG	Final report accepted by OSPIC; available to public.	<p>Feder, H. 1995. Injury to deep benthos. ADFG</p> <p>No indication of oil-related damage to deep benthic environment. No oil fractions appear related to unusual benthic faunal composition. Differences between stations within and outside of oil trajectory were mainly related to sediment differences. No oil effects demonstrated.</p>	CH1A, ST1B, ST2A, ST4, ST5, ST6, ST7, ST8, and TS1.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST3A	Caged Mussels Damage Assessment	NOAA	The results of this project will be presented in two reports: (1) Final report accepted by Chief Scientist. Not yet at OSPIC. (2) Final report accepted by OSPIC; available to public.	(1) Petroleum hydrocarbons in near surface seawater of PWS: chemical sampling and analysis. (2) Petroleum hydrocarbons in near surface seawater of PWS: analysis of caged mussels.  Mussels transplanted along spill trajectory accumulated particulated oil at concentrations that decreased with depth, elapsed time, and distance from heavily oiled beaches. In 1990 and 1991, low concentrations of polynuclear aromatic hydrocarbons were sporadically detected at locations adjacent to heavily oiled beaches. Petroleum hydrocarbons were detected only sporadically in mussels deployed in locations outside Prince William Sound in 1989.	ST3B
ST3B	Sediment Traps Damage Assessment	ADEC	Final report accepted by OSPIC; available to public.	Sale, David M., J. Gibeau, J. Short. Nearshore subtidal transport of hydrocarbons and sediments following the <i>Exxon Valdez</i> oil spill. ADEC  The subtidal sediment trap study demonstrated that oiled particulate matter derived from oil-impacted beaches in Prince William Sound contaminated adjacent subtidal sediments. The study further showed that the transfer rate of oil from beach to subtidal sediment was highest the year following the spill, and declined steadily thereafter.	ST3A and ST4

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST4	Fate and Toxicity Damage Assessment	NOAA	Final report submitted to OSPIC; available to public.	<p>Fate and toxicity of spilled oil from the <i>Exxon Valdez</i>. 1994.</p> <p>Results indicate that some toxicity was still associated in 1990 and 1991 with sediments from lower intertidal zones of heavily oiled sites. The fate of <i>Exxon Valdez</i> oil will include transformation of most constituents (through biodegradation and photooxidation) mainly into carbon dioxide and water, although some constituents may persist indefinitely.</p>	AW4, ST1, ST2, ST3A, ST3B, ST7, TS1 and response studies.
ST5	Shrimp	ADFG	Final report accepted by OSPIC; available to public.	<p>Trowbridge, C. 1992. Injury to Prince William Sound spot shrimp. ADF&amp;G, Commercial Fisheries Management and Development Division, Anchorage, AK.</p> <p>Hydrocarbon analyses did not detect oil contamination with sampled spot shrimp. Shrimp collected in unoiled areas had more inflammatory gill lesions than did shrimp from the oiled area. These results indicate that oil contamination had little or no effect on spot shrimp.</p>	
ST6	Rockfish Damage Assessment	ADFG	Final report accepted by OSPIC; available to public.	<p>Hoffman, A. Injury to demersal rockfish and shallow reef habitats in PWS, 1989-91.</p> <p>Oil was determined to be the cause of death for a small number of demersal rockfish in Prince William Sound. Dead and dying rockfish were reported from the spill area. Of the five fish that were fresh enough to be necropsied, exposure to crude oil was found to be the cause of death. These results prompted additional testing for hydrocarbons in live fish. These tests showed at least 11 of 36 rockfish tested from oiled sites had been exposed to oil within 2 weeks prior to testing. None of the 13 fish from unoiled sites were exposed to oil. Subsequent studies showed some indications of sublethal injuries to rockfish from exposure to oil.</p>	ST2A and ST2B

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ST7	Demersal Fishes Damage Assessment	NOAA	Final report accepted by OSPIC; available to public.	Collier, T. Assessment of oil spill impacts on fishery resources: measurement of hydrocarbons and their metabolites, and their effects, in important species. NOAA  Results show continuing exposure of several benthic fish species and pollock, suggesting continuing petroleum contamination of subtidal sediments, water and food in 1990 and 1991 at sites up to 400 miles from the spill origin.	ST1A
ST8	Sediment Data Synthesis	NOAA	Due date of final report extended to September 30, 1996. Report will include data through FY 95, and an electronic version of the hydrocarbon database.	Report will include electronic database.  Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	TS1, TS3, and 93053.
TM3	River Otter and Mink Damage Assessment in Prince William Sound	ADFG	Report submitted to OSPIC; undergoing format review.	Faro, J.B., R.T. Bowyer, J.W. Testa, and L.K. Duffy. Assessment of injury to river otters in PWS, AK following the <i>Exxon Valdez</i> oil spill. ADF&G  The results indicate that differences in home range, habitat selection, and latrine site abandonment, as well as changes in food habits, occurred in river otters.	CH1B and R103
TS1	Hydrocarbon Analysis	NOAA	Report being prepared under ST8.	See ST8.  Coordinated the chemical analysis of all samples collected by damage assessment studies to develop a single set of analytical data comparable across projects.	ST8, TS3, and B08.

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TS3	GIS Mapping and Analysis: Damage Assessment	ADNR	No report required.	Provided mapping and database support for damage assessment projects.	Supported numerous damage assessment projects, including FS 4, FS13, CH1A and R47.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93002	Sockeye Salmon Overescapement	ADFG	Annual report (funded under 94258) accepted by OSPIC; available to public.	Schmidt, D., et al. Sockeye salmon overescapement.  Red Lake 1994 plankton indicate downward trend associated with increased sockeye salmon fry recruitment. May suggest increased smolt production in 1995 likely. Akalura Lake failed to meet escapement goals. Adult return to Red Lake accurately forecasted by smolt program. Kenai River adult return forecast with large bounds because of uncertainty of smolt production in 1990.	Project is continuation of FS27, 93002. Continued as 94258.
93003	Salmon Egg to Pre-emergent Fry Survival	ADFG NOAA	The results of this project will be presented in two reports (funded under 94191): (1) ADFG report accepted by OSPIC; available to public. (2) NOAA results included in report prepared under 94191. See 94191 for status.	(1) Sharr, S. and J.E. Seeb. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound. (2) See 94191.  Oil exposures completed for 1992 and 1993 brood years. 1992 brood pink salmon died from bacterial kidney disease; spawning not possible. Precautions to ensure survival of 1993 brood have been taken. Persistence of elevated embryo mortalities in oiled streams in 1992 indicate possible genetic damage to wild pink salmon populations from the <i>Exxon Valdez</i> oil spill. Preliminary laboratory studies support the genetic hypothesis. Additional laboratory studies demonstrate dose response of pink salmon embryos when incubated in gravel exposed to crude oil from the <i>Exxon Valdez</i> .	Started in 1989 as FS2 and continued as R60C and 94191.



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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93006	Site Specific Archaeological Restoration	DOI/ NPS	REPORT (funded under 94007) OVERDUE.	Birkedahl, T., et al. 1993. Archaeological site monitoring and restoration.	Continued as 94007.
				Archaeological restoration assessments conducted at 14 sites in 1993 suggest that a majority of the archaeological vandalism that can either be directly or indirectly linked to the <i>Exxon Valdez</i> oil spill event occurred in 1989 before adequate constraints were put into place over the activities of oil spill clean-up personnel. Most vandalism took the form of "prospecting" for high yield sites. In 1993, only two of the 14 sites visited showed signs of continued vandalism and the link between this recent vandalism and the <i>Exxon Valdez</i> oil spill event remains highly problematical. Oil monitoring samples from the archaeological sites have not been processed as of this date, but oil was still visible to the naked eye in the intertidal zones of two of the 14 sites visited.	
93012	Genetic Stock Identification of Kenai River Sockeye Salmon	ADFG	Draft final report (which also contains results of genetics component of 94255) submitted to Chief Scientist May 3, 1996; under peer review.	Genetic data were collected during 1992 and 1993 from spawning populations contributing to mixed-stock harvest of sockeye salmon in Cook Inlet. These data were used in a pilot study to estimate the component of Kenai River stocks harvested in mixed-stock areas of Upper Cook Inlet.	Began as R52. Continued as 94504. Spawning samples collected under 93015.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93015	Kenai River Sockeye Salmon Restoration	ADFG	Annual report accepted by OSPIC; available to public.	Tarbox, K., et al. Kenai River sockeye salmon restoration. Successful collection of baseline and fishery genetic samples. Successful in-season hydroacoustic survey of Upper Cook Inlet by subcontractor.	Began as R52 and continued as 94255. Genetic samples analyzed under 93012.
93016	Chenega Bay Chinook and Silver Salmon (NEPA Compliance)	ADFG	No report required (NEPA compliance only).		Continued as 94272. Also related to 93017.
93017	Subsistence Food Safety Survey and Testing	ADFG	Final report accepted by OSPIC; available to public.	Miraglia, R.A. 1995. Subsistence restoration project. ADF&G, Division of Subsistence, Anchorage, AK. First round of tests for hydrocarbon contamination of subsistence resources showed little or no contamination. Results of second round of testing are pending. The observations of abnormalities in the tested resources caused a shift in concerns of subsistence users from oil contamination to what effects these abnormalities have on these resources. A series of public meetings were held in communities to locate sites and species of concern.	Continued as 94279.
93024	Restoration of Coghill Lake Sockeye Salmon Stock	ADFG	Redraft of final report submitted to Chief Scientist May 21, 1996; under peer review.	Monitoring showed the need for modifying both the type and concentrations of fertilizer.	Continued as 94259 and 95259.
93032	Cold Creek Pink Salmon Restoration (NEPA Compliance)	ADFG	Project canceled.		R105

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93033	Harlequin Duck Restoration	ADFG	<p>The results of this project will be presented in two reports (funded under 94066):</p> <p>(1) Report on Afognak habitat assessment and PWS production survey peer reviewed and returned to PI November 14, 1995.</p> <p>(2) REPORT OVERDUE.</p> <p>Analyses of blood and physiological samples from 1993 collections not completed by UC-Davis) not received. This contract work is delinquent by 2.3 years.</p>	<p>(1) Restoration monitoring of harlequin ducks in PWS and Afognak Island.</p> <p>Only 3 harlequin broods observed in western Prince William Sound; 14 in eastern Prince William Sound. Decreased numbers of harlequins molting in western Prince William Sound in July. Suspect incomplete gonadal development in pre-nesting western Prince William Sound harlequins.</p> <p>Blood/physiological analysis and hydrocarbon analyses in process. Harlequin breeding stream/nest site model in preparation. Harlequin breeding assessment completed on North Afognak Island.</p>	<p>Started in 1989 as B11 and continued as R71. 94427 and 96427 continue harlequin brood surveys.</p>
93034	Pigeon Guillemot Recovery	DOI	<p>Report (funded under 94506) accepted by OSPIC; available to public.</p>	<p>Sanger, G.A. and M.B. Cody. 1994. Survey of pigeon guillemot colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service, Anchorage.</p> <p>One hundred eighty-four colonies, concentrated in southwest Prince William Sound and at Naked Island, were identified. This colony survey confirmed that the present population of pigeon guillemots in Prince William Sound is 3,000 - 4,900.</p>	<p>Continued as 94173.</p>

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93035	Black Oystercatchers / Oiled Mussel Beds	DOI	Draft report peer reviewed; returned to PI for revision January 3, 1996. Report also includes findings from R103.	Andres, B. 1993. Potential impacts of oiled mussel beds on higher organisms: black oystercatchers. US Fish and Wildlife Service, Anchorage, AK. Growth rates of oystercatcher chicks were lower on oiled than unoiled nest sites. Some aliphatic compounds were detected in 1992 fecal samples from oiled sites. Breeding pairs increased on oiled Green Island from 1992 to 1993 but decreased on Knight Island from 1991 to 1993.	Continued as 94020.

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93036	Oiled Mussel Beds	DOI, NOAA	The results of this project will be presented in two reports: (1) DOI draft annual report peer reviewed; returned to PI for revision July 21, 1995. (2) Annual report submitted to Chief Scientist October 6, 1995; undergoing peer review. Annual report accepted by OSPIC; available to public.	(1) Cusick, J.A. and G.B. Irvine. 1995. DOI/NBS. Geographical extent and recovery monitoring of intertidal oiled mussel beds in the Gulf of Alaska affected by the <i>Exxon Valdez</i> oil spill. (2) Babcock, M. Recovery monitoring and restoration of oiled mussel beds in PWS, Alaska. In 1992 and 1993, mussels and sediments from 70 mussel beds in PWS were sampled. Sediments collected from 31 of the oiled beds had total petroleum hydrocarbon concentrations greater than 10,000 ng/g wet weight. The highest concentrations were in sediments collected from Foul Bay (62,258 +/- 1,272 ng/g total polynuclear hydrocarbons). Minimally intrusive site manipulation was conducted at three heavily oiled mussel beds. Preliminary evaluations indicate these methods were not effective in reducing petroleum hydrocarbons adjacent to manipulated areas. Along the Kenai and Alaska Peninsulas, 15 mussel beds were sampled--four of which were new sites--and four of these beds showed total petroleum hydrocarbons in excess of 5,000 ng/g wet weight.	Continued as 94090.
93038	Shoreline Assessment	ADEC	Draft report peer reviewed; returned to PI for revision January 26, 1996.	Piper, E., et al. 1993 shoreline assessment.  Surface oil has become stable. Subsurface oil has decreased substantially since 1991. Oiling is discontinuous throughout the study site.	

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93039	Herring Bay Experimental and Monitoring	ADFG	Draft report peer reviewed; returned to PI for revision September 15, 1995.	<p>Highsmith, R.C., M.S. Stekoll, P. van Tamelen, A.J. Hooten, S.M. Saupe, L. Deysher, and W.P. Erickson. 1995. Herring Bay monitoring and restoration studies. School of Fisheries and Ocean Sciences, UAF.</p> <p>Examination of dominant intertidal alga, <i>fucus gardneri</i>, has shown that larger plants were removed from intertidal in areas affected by spill/clean-up. Where <i>fucus</i> cover was reduced, abundance of ephemeral algae often increased. Populations of grazing invertebrates, e.g., limpets and periwinkles, showed reduced densities at oiled sites in upper intertidal. Initially, barnacle recruitment was lower in quadrats on tar-covered rocks than clean quadrats, but differences disappeared at most sites over time. <i>Fucus</i> germlings and filamentous algae continued to have lower densities and percent cover on oiled than non-oiled substrates. Recovery occurring in lower/middle intertidal zones and normal community interactions returning. Upper intertidal continues to exhibit damage; recovery may take additional 2-5 years.</p>	Evolved from CH1A and R102 and continued as 94086.
93041	Comprehensive Monitoring	NOAA	Project discontinued.		

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93042	Killer Whale Recovery	NOAA	Final report accepted by OSPIC; available to public.	Dalheim, M.E. 1994. Assessment of injuries and recovery monitoring of Prince William Sound killer whales using photo-identification techniques. National Marine Mammal Laboratory, Seattle, WA. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the period 1989-1991. Despite considerable searching effort in PWS and Southeast Alaska, the missing whales have not been observed. Given the stability of resident pods, it is assumed the missing whales are dead. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, and 4.3% in 1991. Zero mortality occurred in 1992 and 1993. The adult annual mortality rate of killer whales is usually less than 2%. Annual pod mortality rates on the order of 20% are unprecedented for North Pacific killer whales.	Close-out/report writing funded under 94092.

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93043	Sea Otter Demographics and Habitat	DOI (NBS)	The results of this project will be presented in three reports (funded under 94246): (1) Data on recovery of sea otter carcasses being presented in MM6 (#15). (2) Final report approved by OSPIC; available to public. (3) Draft report on sea otter demographics accepted by Chief Scientist; not yet at OSPIC.	(1) See MM6(#15). (2) Bodkin, J.L. and M.S. Udevitz. 1993 trial aerial survey of sea otters in PWS, Alaska. 1994. NBS, Anchorage, AK. (3) Udevitz, M.S., B.E. Ballachey, and D. L. Bruden. 1995. A population model for sea otters in western PWS. USNBS. Anchorage, AK. Aerial survey of sea otters in Prince William Sound completed summer 1993; estimated abundance is approximately 18,000. Age distribution of sea otter carcasses recovered in spring 1993 in western Prince William Sound is similar to prespill distribution. Age- and sex-specific survival rates generated from carcass data for sea otters in Prince William Sound.	Report writing funded under 94246.
93045	Marine Bird / Sea Otter Surveys	DOI	Final report accepted by OSPIC; available to public.	Agler, B.A., P.E. Seiser, S.J. Kindall and D.B. Irons. 1994. Marine bird and sea otter populations in Prince William Sound, Alaska: Population trends following the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage. Overall marine bird population estimates in Prince William Sound have not changed significantly since 1989, but were 41% lower than 1972-1973 estimates. Rates of increase of goldeneyes and surfbird populations were higher in the unoiled zone of Prince William Sound than in the oiled zone, whereas oystercatchers increased more rapidly in the oiled zone.	Started as part of B2 and continued as 94159.



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93046	Habitat Use, Behavior, and Monitoring of Harbor Seals in PWS	ADFG	Final report (funded under 94064) accepted by OSPIC; available to public.	<p>Frost, K.J. and L.F. Lowry. 1994. Habitat use, behavior, and monitoring of harbor seals in Prince William Sound, Alaska. ADFG</p> <p>Counts of seals at 25 trend sites in Prince William Sound were similar during pupping and molting in 1992 and 1993. However, 1993 pupping counts were 23% lower than in 1989. Molting counts were similar to 1989 postspill counts, but 27% lower than 1988 counts. Sixteen seals satellite-tagged since 1992 indicate that seals in central Prince William Sound haul out and feed near the same sites with little movement to other areas. Feeding usually occurs in depths of 100-200 meters, with a maximum recorded dive depth of 404 meters.</p>	<p>Started in 1989 as MM5, which was closed out as R73. Continued as 94064.</p>

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93047	Subtidal Monitoring	ADEC, ADFG, NOAA	The results of this project will be presented in three reports (funded under 94285): (1) NOAA sediments - Final report submitted to OSPIC; undergoing format review. (2) ADEC microbiology - Final report accepted by OSPIC; available to public. (3) ADFG eelgrass - Final report accepted by OSPIC; available to public.	(1) Recovery of sediments in the subtidal sediment environment inside PWS. (2) Braddock, J. Microbiology of subtidal sediments: monitoring and microbial populations. (3) Jewett, S., et al. The effects of the <i>Exxon Valdez</i> oil spill on shallow subtidal communities in PWS 1989-93.  As a follow-up to previous studies from 1989-1991, the numbers and activity of oil-degrading microorganisms were measured in sediments collected in 1993. Preliminary results suggest some contamination remains in subtidal sediments. However, generally very low numbers were found where visible oil was present (e.g., subsurface sediments, Northwest Bay). Analysis of 1993 eelgrass data complete. Several infaunal and epifaunal taxa more abundant in oiled bed sites than control sites. Amphipods less abundant in oiled sites. Sea urchins are more abundant. <i>Hemosiderosis</i> in fishes from oiled sites.	Started as ST1A and continued as 94285. Report writing under 94285.
93049	Monitor Murre Colony Recovery	DOI/FWS	Final report accepted by OSPIC; copies currently being made.	Roseneau, D. 1995. Common murre Restoration monitoring in the Barren Islands, Alaska, 1993. U.S. Fish and Wildlife Service, AK Maritime NWR, Homer, AK.  Murre productivity in the Barren Islands was 0.4 - 0.6 chicks per nest site in 1993, up from near zero in 1989. Population counts on plots were similar to or higher than in previous postspill years.	Started as R11 and continued as 94039. (Formerly in EVOS database as 93022.)

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93051	Habitat Information for Anadromous Streams and Marbled Murrelets	ADFG, DOI, USFS	<p>The results of this project will be presented in 5 reports (funded under 94505):</p> <p>(1) ADFG Stream Habitat Assessment/PWS &amp; Lower Kenai- Final report accepted by OSPIC; available to public.</p> <p>(2) USFS Habitat Protection Info. for Channel Type Classification Study- findings included in report prepared under 95505B. See 95505B for results.</p> <p>(3) DOI Pilot Study on Capture and Radio Tagging of Murrelets in PWS- Final report accepted by Chief Scientist; not yet at OSPIC.</p> <p>(4) DOI Information Needs for Habitat Protection: Marbled Murrelet Habitat Identification -Final report accepted by OSPIC; available to public.</p> <p>(5) USFS Upland Nesting Habitat of Marbled Murrelet - final report accepted by OSPIC; available to public.</p>	<p>(1) Sundet, K., et al. 1994. Stream habitat assessment project: Prince William Sound and Lower Kenai Peninsula. ADFG</p> <p>(2) See 95505B.</p> <p>(3) Burns, R.A., et al. 1994. Pilot study on the capture and radio tagging of murrelets in PWS, AK, July and August, 1993. U.S. Fish and Wildlife Service, Anchorage, AK.</p> <p>(4) Kuletz, K.J., et al. Information needs for habitat protection: marbled murrelet habitat identification. 1994.</p> <p>(5) Characterization of the upland nesting habitat of the marbled murrelet in the <i>Exxon Valdez</i> spill area. Late season surveys, sites at the heads of bays, low elevations, high percentages of forest cover, and large trees were all consistent predictors of high murrelet activity. Radar performed better than humans in detecting murrelets and was cheaper than boat-based or ground-based surveys by humans. About 995 km of shoreline and 117 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on the lower Kenai Peninsula and in Prince William Sound, resulting in discovery of 186 anadromous streams totaling about 57 km. Stream habitat parameters were collected along all streams, upper extents of anadromous distribution were documented and streams were mapped by GIS.</p>	<p>Evolved from R15 and R47.</p> <p>Also related to 93045. Project closeout in FY 94 as 94505 and in FY95 as 95505B.</p>

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93053	Hydrocarbon Database	NOAA	No report required.	Continuing project with updating and quality control of hydrocarbon data. Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	Continued as 94290. This project supports most restoration projects.
93057	Damage Assessment GIS	ADNR	No report required.	Cataloged and plotted over 160 maps for public access at OSPIC. Provided mapping and database support for damage assessment studies.	Supported numerous damage assessment projects, including B11, FS13, AW1, and CH1A.
93059	Habitat Identification Workshop	USFS	No report required.	Identified parcels of non-public land containing critical habitat necessary for the recovery of injured resources and services.	
93060	Accelerated Data Acquisition	USFS	No report required.	Collected and organized existing resource data needed for the analysis of private lands in the oil spill area.	
93062	Restoration GIS	ADNR	No report required.	Provided technical mapping and database support for restoration projects. Generated spill area map and land status maps for Kachemak Bay, Seal Bay, and Eyak lands in support of habitat protection data analysis and negotiations. Plotted maps to provide public access to EVOS information.	Supported numerous restoration projects, including 93038, 93063, 93064 and R47.

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93063	Anadromous Stream Surveys	USFS	Project is data analysis and report writing for anadromous stream portion of R105.	See R105.	Started as R105 and continued as 94139.
93064	Imminent Threat Habitat Protection	ADNR	No report required.	See "Opportunities for Habitat Protection/Acquisition" (2/16/93) and "Comprehensive Habitat Protection Process; Large Parcel Evaluation & Ranking, Volume I" (11/30/93).  Imminent Threat Evaluation and the first round of Large Parcel Evaluation were completed. \$7.5 million from settlement funds was combined with \$14.5 million from other sources for the purchase of private inholdings in Kachemak Bay. \$29,950,000 was committed from the most recent court request for the initial payment for purchase of private land near Seal Bay on Afognak Island. The total purchase price of this transaction is \$38,700,000 with the balance to be paid in three annual installments.	
93065	Prince William Sound Recreation	USFS	Report (funded under 94217) submitted to OSPIC; undergoing formatting review.	Menefee, W. and S. Hennig. 1994. USFS. Prince William Sound recreation project.  Recreation Injury Statement (10/93) was incorporated into the Draft Restoration Plan. Final report includes a prioritized list of projects and other recommendations for restoration of recreation in Prince William Sound.	Close-out/report writing funded under 94217.

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93066	Alutiiq Archeological Repository	ADEC	No report required.	Opening ceremony held May 13, 1995.	
93067	Pink Salmon Coded Wire Tag Recovery	ADFG	Final report approved by OSPIC; available to public.	Sharr, S., and Peckham, C.J. 1993. Coded wire tag recoveries from pink salmon in PWS fisheries. Reduced commercial exploitation of damaged wild pink salmon populations through timely inseason estimates of hatchery and wild contributions to harvest. Accurate and timely stock composition estimates were used by fisheries managers to justify restriction of fishing fleet to areas where interception of damaged wild populations in mixed-stock fisheries could be minimized.	Started as FS3 and continued as R60A, 94184 (report preparation ) and 94320B.
93068	Non-Pink Salmon Coded Wire Tag Recovery	ADFG	1993 results will be included in report being prepared under 94137. See 94137 for status.	See 94137. Timely and accurate inseason estimates of hatchery and wild stock contributions to commercial harvest for improved management of wild stocks in mixed-stock fisheries.	Evolved from FS3; continued as 94137.
93AD	Administrative Director's Office		No report required.		
93FC	Financial Committee		No report required.		
93RT	Restoration Team Support		No report required.		

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4007	Site Specific Archaeological Restoration	ADNR	The results of this project will be presented in two reports (funded under 95007A): (1) Site protection plan accepted by OSPIC; available to public. (2) Annual report peer reviewed. Available to public at OSPIC.	(1) Bittner, J.E. and D.R. Reger. 1995. The 1994 EVOS report, spill area site and collection plan. ADNR, Anchorage, Alaska. (2) Reger, D. 1994. Archaeological site monitoring and restoration.  Monitoring: ADNR monitored seven sites on Shuyak Island and Outer Kenai Coast (including three at Nuka Island) and found oil but no evidence of new disturbance. USFWS monitored six sites on Afognak Island and found no indication of new vandalism. NPS monitored two sites, McArthur Pass in Kenai Fjords National Park and Cape Gull on the Katmai coast, and found no new damage. Data Recovery: USFS began restoration of two sites in PWS: SEW-440 and SEW-448. Site Protection Plans: ADNR compiled information about the need for site protection, with emphasis on adequate curation of collections in the spill area.	Continuation of 93006.
94020	Black Oystercatcher Interaction with Intertidal	DOI	Project is close-out/report writing for 93035. See 93035.		Close-out/report writing for 93035.

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94039	Common Murre Population Monitoring	DOI/FWS	Draft final report (funded under 95039) peer reviewed; returned to PI for revision November 14, 1995.	Roseneau, D.G., A.B. Kettle, and G.V.Byrd. Common murre restoration monitoring in the Barren Islands, Alaska in 1994. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK  In 1994, complete censuses and replicate index plot counts were made at the East Amatuli Island-Light Rock and Nord Island murre colonies. Although a marginally significant increasing trend was found over the 6-year post-spill period at one 2-plot index area at East Amatuli Island-Light Rock, no significant trends were detected in the other 1989-1994 East Amatuli Island-Light Rock and Nord Island population data sets. Productivity was high (0.7 fledglings per nest site) and within normal bounds, compared with other colonies.	Began as R11; continued as 93022. Close-out/report writing under 95039.

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94041	Introduced Predator Removal from Islands	DOI/ FWS	Annual report peer reviewed. Annual report accepted by OSPIC; copies currently being made.	<p>Bailey, E. 1995. Introduced predator removal in the Shumigan Islands. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK.</p> <p>Removed 33 arctic foxes from Simeonof Island (no more believed remaining); removed 3 arctic foxes from Chernabura Island (population appeared to be dying out naturally). Censused populations of black oystercatchers and pigeon guillemots on above islands as well as on nearby islands with no foxes (controls). No oystercatcher nests found on fox islands; densities of both oystercatchers and guillemots are much less on fox islands than on fox-free ones. Recovery of nesting populations of oystercatchers and guillemots is expected to begin in 1995 on Simeonof and Chernabura islands.</p>	
94043A1	Eshamy River Restoration (W. PWS)	USFS	Project discontinued.		

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94043A2	Gumboot Creek Restoration (W. PWS)	USFS	No report required (NEPA only).		NOTE: Also known as Gunboat Creek.
EA completed and decision notice signed July 27, 1995.					
94043A3	Stream No. 508 Restoration	USFS	Project discontinued.		
EA completed and decision notice signed July 27, 1995.					
94043A4	Stream No. 509 Restoration (W. PWS)	USFS	Project discontinued.		
EA completed and decision notice signed July 27, 1995.					
94043A5	Otter Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
EA completed and decision notice signed June 28, 1995.					

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94043A6	Miners Creek/Lake Restoration (N. PWS)	USFS	Project discontinued.		
94043A7	Shrode Creek/Lake Restoration (W. PWS)	USFS	No report required (NEPA only).		
EA completed and decision notice signed June 28, 1995.					
94043B1	Sockeye Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
EA finalized and signed. EA concluded that Sockeye Creek is not a cost effective site for this project at this time.					
94043B2	Rocky Creek/Bay Restoration (Montague)	USFS	Redraft of final report submitted to Chief Scientist April 30, 1996; under peer review.		

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94064	Harbor Seal Habitat Use and Monitoring	ADFG	Annual report (which includes results of 94320F) accepted by OSPIC; available to public. NOTE: Project also includes report writing funds for 93046.	<p>Frost, K., et al. 1995. Habitat use, behavior, and monitoring of harbor seals in PWS, AK. ADF&amp;G.</p> <p>Twenty-six seals caught and sampled September 1994 (blood, whiskers for stable isotopes, blubber for fatty acids, skin for genetics, measurements). Twelve of these instrumented with satellite-linked time-depth recorders (6 adults, 6 subadults). Aerial surveys conducted during molting period in September. Preliminary survey analysis suggests no marked increase or decrease since 1993. Eight SLTDRs functioning on 11/10/94. Most seals remain local in PWS; one subadult in Gulf of Alaska.</p>	Started as MM5; continued as R73, 93046, and 95064.
94066	Harlequin Duck Recovery Monitoring	ADFG	Project is close-out/report writing for 93033. See 93033 for status.	See 93033.	Close-out/report writing for 93033.

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94086	Herring Bay Experimental and Monitoring Studies	ADFG	Annual report peer reviewed February 1996; not yet at OSPIC.	Highsmith, R.C., et al. Herring Bay monitoring and restoration studies. UAF/ADF&G	Population dynamics portion of 93039.
				Four field trips were conducted in 1994 for data and sample collections. Data was collected for population dynamics, barnacle recruitment, and water circulation studies.	
94090	Mussel Bed Restoration and Monitoring	NOAA	Annual report peer reviewed. Annual report accepted by OSPIC; available to public.	Babcock, M.M., P.M. Harris, S.D. Rice, R.J. Bruyere, and D.R. Munson. 1995. Recovery monitoring and restoration of oiled mussel beds in Prince William Sound, AK. NOAA/NMFS, Juneau, AK	C111B and 93036. Continued as 95090.
				Twelve mussel beds were cleaned and restored in 1994.	
94092	Killer Whale Recovery Monitoring	NOAA	Project is close-out/report writing for 93042. See 93042 for status.	See 93042.	Continuation of 93042.

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4102	Marbled Murrelet Prey and Foraging Habitat in Prince William Sound	DOI/FWS	Final report (funded under 95102) accepted by Chief Scientist. Not yet at OSPIC.	Kuletz, K.J., D.K. Marks, R. Burns, and L. Prestash. Marbled murrelet foraging patterns and habitat use during the breeding season in PWS.  Forty-seven murrelets were radio-tagged. Foraging ranges were obtained by tracking birds with boats and planes. Birds foraged up to 60 kms. from their nests (average 10 km.). The average distance from shore was 0.6 km.	R15, 93051, 95102
4110	Habitat Protection - Data Acquisition and Support	ADNR	No report required.	See Habitat Protection Working Group, "Comprehensive Habitat Protection Process; Large Parcel Evaluation and Ranking" Volumes I and II (November 2, 1994 Supplement).	Close-out under 95110-C1.O.
4126	Habitat Protection and Acquisition Fund	ADNR	No report required.		94110

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94137	Stock Identification of Chum, Sockeye, Chinook, and Coho in PWS	ADFG	Draft final report (funded under 95137), which incorporates results of 93068, peer reviewed and returned to PI for revision April 19, 1996.	Scanned approximately half a million sockeye salmon and 1/3 million chum salmon in PWS for tags. Results of sockeye tag recoveries were used to manage fisheries in western PWS. Interception of Coghill Lake-bound wild fish was kept to a minimum.	Evolved from FS03; continued as 93068 and 95137.
94139A1	Waterfall Creek Bypass Instream Restoration	ADFG	No report required (project carried forward as Project 95139A1).		94043, carried forward as 95139A1
94139A2	Port Dick Spawning Channel	ADFG	No report required (project carried forward as 95139A2).		

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94139B1	Otter Creek Bypass Instream Restoration	USFS	Annual report peer reviewed. Annual report accepted by OSPIC; available to public.	Wedemeyer, K., et al. 1995. Instream habitat and stock restoration for salmon, Otter Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK	95139B
				Otter Creek bypass rehabilitation completed.	
94139B2	Shrode Creek Bypass Instream Restoration	USFS	Annual report peer reviewed. Annual report accepted by OSPIC; available to public.	Wedemeyer, K., et al. 1995. Stream habitat and stock restoration for salmon, Shrode Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK	95139B
				Shrode Creek bypass renovation completed.	
94139C1	Montague Island Chum Instream Restoration	USFS	Annual report peer reviewed and returned to PI for revision April 19, 1996.	Schmid, D., et al. 1995. Montague Island chum salmon restoration. USDA Forest Service, Chugach N.F., Cordova, AK	95139C1
				Project completed for three streams on Northern Montague Island. This project completed 32 structures and 15 acres of thinning.	



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94139C2	Lowe River (6.5 Mile) Instream Restoration	ADFG	No report required (project carried forward as Project 95139C2).		95139C2
94159	Marine Bird & Sea Otter Boat Surveys	DOI	Final report approved by OSPIC; available to public.	Agler, B.A., S.J. Kendall, P.E. Seiser, and D.B. Irons. 1995. Marine bird and sea otter abundance of PWS, Alaska: Trends following the T/V <i>Exxon Valdez</i> oil spill.  Estimated 320,470 plus-or-minus 63,640 marine birds in PWS in March 1994. Goldeneye and merganser populations may still be showing effects from oil spill. They are both increasing faster in the unoiled area than in the oiled area.	Began as B2; continued as 93045.

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94163	Forage Fish Influence on Recovery of Injured Species	NOAA, ADFG	<p>The results of this project will be presented in two reports:</p> <p>(1) <u>NOAA</u>: Annual report peer reviewed. Annual report accepted by OSPIC; available to public.</p> <p>(2) <u>ADFG</u>: Annual report peer reviewed; not yet at OSPIC.</p>	<p>(1) Tyler, A., et al. Forage fish study in PWS, AK. UAF/NMFS. Appendix by B. Ostrand, USFWS/DOI.</p> <p>(2) Willette, M., et al. Forage fish influence on recovery of injured species: forage fish diet overlap.</p> <p><u>NOAA</u>:  August cruise: (a) Hydroacoustic data showed fish schools mainly in the more shallow water regions near the bottom; fish appeared absent from mid-water layers over the deep passages.  November cruise: (a) Temperature-depth profiles for open areas of PWS showed surface temperature 7.0C, warming to 9.0C at 50m depth. Water cooled to 5.0C with further increase in depth. Salinity gradually increased through this depth range, indicating little mixing of the water column and that cooling was occurring from the surface downward due to cold air temperatures. Over the shallow shelf areas the profiles were different, being at 8.0C and mixed to 70m. (b) Five stations were sampled for invertebrate forage species, with euphausiids the abundant crustacean at most stations. (c) Hydroacoustic analysis showed fish mainly located above the temperature maximum at depths of 20 to 40 meters (net sampling showed these fish were young herring mixed with young pollock). Hydrographic data indicated fish aggregations were at temperatures of 7.0 to 7.5C. A second layer of fish was seen near the bottom (likely adult pollock).  <u>ADFG</u>: pproximately 1,500 stomach samples collected for analysis of diet overlap. Found Pacific herring, walleye pollock, and juvenile chum salmon common and widespread throughout western PWS.</p>	<p>Integrate with Projects 94320 (PWS System Investigation), 94102 (Murrelet Prey), and 94173 (Pigeon Guillemot).</p>

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94165	Herring Genetic Stock Identification in Prince William Sound	ADFG	Project deferred to FY 95 (95165).		95165
94166	Herring Spawn Deposition and Reproductive Impairment	ADFG, NOAA	The results of this project will be presented in two reports: (1) ADFG annual report approved by OSPIC; available to public. (2) NOAA annual report peer reviewed; available to public at OSPIC.	(1) Wilcock, J.A., E.D. Brown and E. Debevec. Herring spawn deposition and reproductive impairment. (2) Carls, M.G., S.D. Rice, and R.E. Thomas. 1995. Impact of exposure of adult pre-spawn herring ( <i>Clupea harengus pallasii</i> ) on subsequent progeny. NOAA/NMFS, Juneau, AK.  Adult herring biaccumulated hydrocarbons, including ovarian tissue and ova. Adults were stressed by oil when VHS was present; VHS prevalence was correlated with PAH concentration. Eggs and larvae were not impacted by parental exposure to hydrocarbons. Factors unaffected included egg fertility, time of hatch, survival, larval stage at hatch, swimming ability, morphology, chromatid separation, and number of mitotic figures.	Coordinating with USFS regarding avian predation (94320Q).

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94173	Pigeon Guillemot Recovery Monitoring	DOI/ FWS	Final report accepted by OSPIC; available to public.	Hayes, D. L. 1995. Recovery monitoring of pigeon guillemot populations in PWS, Alaska. USFWS, Anchorage, AK.	Continued from 93034.
				Found evidence of predation on eggs and chicks on Naked Island and abandonment of eggs on Jackpot Island. On Naked Island, gadids were much more prevalent and sandlance much less prevalent in the diet of chicks in 1994 than in 1979-81. Herring or smelt accounted for ca. 32% of prey items delivered to chicks at Jackpot Island, but only ca. 1% at Naked Island.	
94184	Coded Wire Tag Recoveries from Pink Salmon in PWS	ADFG	Project is close-out/report writing for 93067. See 93067 for status.	See 93067.	Began as FWS. Continued as R60A, 93067, and 9432013.
94185	Coded Wire Tagging of Wild Pinks for Stock Identification	ADFG	Project discontinued.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94191	Oil Related Egg and Alevin Mortalities	ADFG, NOAA	<p>The results of this project will be presented in two reports:</p> <p>(1) ADFG annual report peer reviewed; not yet at OSPIC.</p> <p>(2) NOAA annual report peer reviewed; available to public at OSPIC.</p> <p>(NOTE: Project also includes report writing funds for R60C and 93003.)</p>	<p>(1) Seeb, J.E., et al. Oil related egg and alevin mortalities. ADF&amp;G</p> <p>(2) Heintz, R.A., S.D. Rice, and J.W. Short. 1995. Injury to pink salmon eggs and pre-emergent fry incubated in oiled gravel (laboratory study). NOAA/NMFS, Juneau, AK</p> <p><u>ADFG</u> - Collected gametes from 8 controlled and 8 oiled streams. These eggs are now being incubated and will be analyzed in 1995.</p> <p><u>NOAA</u> - 1992 brood died from bacterial kidney disease. 1993 brood emerged from incubators by 5/15/94. 18,000 fish were coded wire tagged and released May 1994; 14,000 fish were retained for PIT tagging later in the summer.</p> <p>Dose-related differences in growth and size of 1992 brood year observed in October 1993 were not as apparent in April 1994. Embryo survival to the development of the eye and emergence from substrate were measured in 1993 brood year, and clear relationship was observed between dose and survival to both developmental stages. During emergence period, inspected over 50,000 newly emerged fry for visible lesions and observed a dose relationship with the proportion of fish displaying edema.</p>	Began as FS02 and R060C; continued as 93003.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94199	Institute of Marine Science - Seward Improvements	ADFG	No report required.	Record of Decision signed by DOI, DOA (USFS), and NOAA October 31, 1994. Capital funding approved by Trustee Council November 2, 1994, subject to Executive Director's approval.	Continued as 95199-CLO.
94217	Prince William Sound Area Recreation Implementation	USFS	Project is close-out/report writing for 93065. See 93065 for status.	See 93065.	Close-out of 93065.
94244	Harbor Seal and Sea Otter Co-op Subsistence Harvest Assistance	ADFG	Annual report accepted by OSPIC; available to public. (NOTE: Report also contains results from 95244.)	Fall, J. 1995. Harbor seal ( <i>Phoca vitulina</i> ) and sea otter ( <i>Enhydra lutrus</i> ) cooperative subsistence harvest assistance. ADF&G  A harbor seal/sea otter restoration workshop took place in Anchorage December 2, 1994. It was attended by more than thirty people, including representatives from eight communities which use marine mammals for subsistence. A second workshop took place on March 2, 1995	Continued as 95244.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94246	Sea Otter Recovery Monitoring	DOI	Project is close-out/report writing for 93043. See 93043 for status.	See 93043.	Close-out/report writing for 93043.
94255	Kenai River Sockeye Salmon Restoration	ADFG	The results of this project will be presented in two reports: (1) Annual report accepted by OSPIC; available to public. (2) Results of genetics component of project contained in report being prepared under Project 93012. See 93012 for status.	(1) Tarbox, K.E., R.Z. Davis, L.K. Brannian, and S.M. Fried. 1995. Kenai River sockeye salmon restoration. ADF&G, Soldotna, AK. (2) Seeb, J. See 93012.	Began as R53; continued as 93012 and 93015.
94258	Sockeye Salmon Overescapement	ADFG	Annual report peer reviewed July 24, 1996; not yet at OSPIC. NOTE: Project also includes report writing funds for 93002.	Skilak weight of fall predictive on both escapements and fall fry abundance. 1994 fall fry had low abundance and weight. Lipid comparisons of similar length fall fry from Tustumena and Skilak indicated Skilak fall fry entered winter in poor condition in 1993. 1995 adult return needed to define magnitude and duration of reduced sockeye production.	Started as FS27; continued as 93002 and 95258.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94259	Coghill Lake Sockeye Salmon Restoration	ADFG	Annual report peer reviewed. Annual report accepted by OSPIC; available to public.	Edmundson, J.A., G.B. Kyle, and S.R. Carlson. 1995. Restoration of Coghill Lake sockeye salmon: 1994 annual report on nutrient enrichment restoration. ADF&G, Soldotna, AK.  Estimated 900,000-1,800,000 smolts outmigrated this year. Escapement approximately 7,200 adults. Response of phytoplankton to liquid fertilizer applications suggests fertilizer is not being lost to the anaerobic layer, but is actually improving the productivity of Coghill Lake.	Began as 93024.
94266	Shoreline Assessment and Oil Removal	ADEC, DOI/NBS	The results of this project will be presented in two reports: (1) <u>DOI/NBS</u> : Draft final report peer reviewed and returned to PI for revision June 14, 1995. Due date for submission of redraft extended to September 30, 1996. (2) <u>ADEC</u> : Final report accepted by Chief Scientist; not yet at OSPIC.	(1) Irvine, G. NBS/DOI. Fate and persistence of oil stranded on Gulf of Alaska shorelines during EVOS. (2) Munson, D. ADEC. Shoreline assessment and oil removal.	
94272	Chenega Chinook Release Program	ADFG	Annual report available to public at OSPIC.	50,300 chinook smolts released at Crab Bay on 5/27/94. Chenega residents reared and fed smolts in net pens prior to release.	Continuation of 93016.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94279	Subsistence Food Safety Testing	ADFG	Final report peer reviewed and returned to PI for revision June 12, 1996.	Miraglia, R. Subsistence restoration project: food safety testing.  Test results on final fish and shellfish samples received from NMFS lab. All results so low as to be within margin of error for tests. Seal samples from Tatitlek and duck samples from Chenega Bay were collected by ADFG with assistance from local subsistence hunters. Test results found hydrocarbon contamination was at background levels.	Continuation of 93017.
94285	Subtidal Sediment Recovery Monitoring	NOAA	Annual report peer reviewed; available to public at OSPIC. (NOTE: Project also includes report writing funds for 93047.)	O'Clair, C.E., J.W. Short, and S.D. Rice. 1995. Subtidal monitoring: recovery of sediments in the Northwestern Gulf of Alaska. NOAA/NMFS, Juneau, AK.	Continuation of ST2A and 93047. Continued as 95106.
94290	Hydrocarbon Data Analysis and Interpretation	NOAA	No report required.	In FY94, 2,742 samples were received and several hundred were submitted for analysis.	Continuation of ST8 and 93053. Continued as 95290.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
4320A	Salmon Growth and Mortality	ADFG	Consolidated annual report available to public at OSPIC.	Growth rate of juvenile pink salmon in 1994 in PWS slightly above average compared to 1989-1993 period.	
4320B	Coded Wire Tagging Recovery-PWS Pinks	ADFG	Annual report available to public at OSPIC.	Sharr, S., et al. 1994. Coded wire tag recoveries from pink salmon in PWS salmon fisheries. ADF&G.  Common property fisheries: 26.2 million caught, 4.4 million scanned (17%), 3,600-4,000 tags recovered. Hatchery revenue sales: 10.4 million caught, 2 million scanned (19%), 1,600 tags recovered. Scanned close to 100% of brood stock from PWS salmon hatcheries. Used results of in-season analysis, based on detection of tags, for critical management decisions regarding fishing areas and times. Ability to detect wild stock shortfalls and high abundance of hatchery fish contributed to meeting restoration goals.	Continued as 96186.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320C	Otolith Mass Marking of PWS Pink Salmon	ADFG	Annual report peer reviewed April 19, 1996; not yet at OSPIC.	Feasibility study initiated at PWSAC Cannery Creek Hatchery. Approximately 50,000 fry were immersed for different lengths of time and at different temperatures to determine optimum treatment for marking effectiveness and survival. Completed examination of otoliths subjected to varying levels of oxytetracycline and varying temperatures at ADFG lab. Marking was not successful for any of the treatment groups.	Continued as 96188.
94320D	Pink Salmon Genetics	ADFG	Results of this project are included in report being prepared under Project 95320D. See 95320D for status.	In ADFG lab, DNA data show upstream and intertidal spawners in the same stream genetically differ. Have also found that mainland and island populations genetically differ.	94184, 94191

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320E	Salmon Predation	ADFG	See 94320A.		
				Walleye pollock, adult pink salmon, Pacific herring, and dolly varden trout identified as important predators on juvenile salmon in Prince William Sound.	
94320F	Harbor Seals-Trophic Interactions	ADFG	Data/findings integrated into report prepared on 94064. See 94064 for status.	See 94064.	94064. Combined with 95064 for 1995.
				Preliminary fatty acid analysis of blubber samples indicates several distinct feeding patterns. Some seals appear to eat plankton-eating fishes and others piscivorous fishes/prey such as pollock and squid. Stable isotope analysis indicates different feeding patterns for subadults and most adults. Adult females in particular show a strong annual shift in prey.	
94320G	Phytoplankton and Nutrients	ADFG	See 94320A.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320N	Nearshore Fish	ADFG	See 94320A.		
94320P	SEA Program: Program Management	ADFG	See 94320A.		All subprojects of 94320.
94320Q	Avian Predation on Herring Swan	USFS	Annual report peer reviewed; not yet at OSPIC.	Bishop, M.A. 1995. Avian predation on herring spawn. Copper River Delta Institute, USDA Forest Service, Cordova, AK	95320Q

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320S	Disease Impacts on Herring	ADFG	Annual report peer reviewed. Accepted by OSPIC; copies being made.	<p><i>Ichthyophonus hoferi</i>, viral hemorrhagic septicemia virus, and other causes of morbidity in Pacific herring spawning in PWS in 1994. ADF&amp;G.</p> <p>Because of the important of <i>Ichthyophonus</i> in herring morbidity in 1994, all previous Pacific herring sampled from PWS and submitted to UC Davis (1989, 1990, 1991, 1992) were re-screened for <i>Ichthyophonus</i>. Prevalence in these samples was never more than 15% and was distributed fairly evenly among liver, kidney, and spleen, but was never in the olfactory nares.</p>	
94417	Waste Oil Disposal Facilities	ADEC	No report required (project carried forward as 95417).		95417

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94422	Environmental Impact Statement for the Draft Restoration Plan	USFS	No report required.	Final EIS released September 30, 1994. Notice of Availability in Federal Register, Vol. 59, No. 186, p. 49232, dated 9/27/94 and Vol. 59, No. 189, p. 49926, dated 9/30/94. Record of Decision (ROD) signed October 31, 1994. Copies of FEIS available through OSPIC.	Continued as 95422.
94423	Oil Spill Public Information Center (OSPIC)	ALL	No report required.	During the quarter ending 6/30/96, OSPIC staff received 322 visitors, responded to 765 requests for information (of which 193 were sent via e-mail from the Web Home Page), processed 42 interlibrary loans, loaned 155 items, and distributed 1,788 documents. 505 documents were added to the Trustee Council Administrative Record and 20 Marine Ecosystem posters were sold. OSPIC staff received 14 NRDA/Restoration Project final reports for format review, approved 21, and distributed final copies of 14. OSPIC staff received 12 annual reports for format review, approved 10, and received final copies of 7. OSPIC staff received From 4/1/96 through 6/30/96, 7,860 people used the OSPIC World Wide Web Home Page.	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94424	Restoration Reserve	ALL	No report required.	<p>The Trustee Council has voted to place a total of \$36 million into a Restoration Reserve fund within the court registry investment system and to invest the funds in laddered securities. The Restoration Reserve was formally established by the court on February 15, 1996. The securities are structured to mature annually on November 15 beginning in 1997 and ending in the year 2002.</p>	
94425	Marine Mammal Book	NOAA	No report required.		
				See Marine mammals and the <i>Exxon Valdez</i> . Loughlin, T.R., editor. 1994. Academic Press, Inc. 395 pages.	
				Book printed and for sale by Academic Press.	
94427	Experimental Harlequin Duck Breeding Survey	ADFG	Annual report peer reviewed. Annual report accepted by OSPIC; available to public.	Rosenberg, D.H. 1995. Experimental harlequin duck breeding survey in Prince William Sound, AK. ADF&G, Anchorage, AK.	B11, R71, 93033, 94066, 95427, and nearshore ecosystem projects.



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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94428	Subsistence Restoration Planning and Implementation	ADFG	Final report (which also includes results from 95428) submitted to OSPIC; undergoing format review.	Fall, J. ADF&G. Subsistence restoration planning and implementation.	
94504	Genetic Stock Identification of Kenai River Sockeye	ADFG	Project is close-out/report writing for 93012. See 93012 for status.	See 93012.	Close-out report writing for 93012.
94505	Information Needs for Habitat Protection	USFS	Findings included in report prepared under 95505B. See 95505B for status.	See 95505B.	Close-out of 93051. 95505B.
94506	Pigeon Guillemot Recovery	DOI	Project is close-out/report writing for 93034. See 93034 for status.	See 93034.	Report writing for 93034.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94507	Symposium Proceedings Publication	NOAA	<p>No report required. The index is now complete and the entire book (roughly 900 pages) will be released to the printer in July 1996.</p> <p>NOTE: In FY 96, the Trustee Council approved an additional \$42,000 for the completion of the proceedings (Project 96507).</p>	<p>Proceedings will include 61 manuscripts in the following topic areas: fate and toxicity (8 manuscripts), intertidal (10 manuscripts), treatment effects (5), subtidal (3), herring (2), salmon (12), other fish (5), birds (8), mammals (2), archaeology (1), subsistence (4), human impacts (2). The book will probably be over 900 pages, 50% longer than first estimated.</p>	Continued as 96507.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ Proposer</u>	<u>Report/Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95320T	Juvenile Herring Growth and Habitat Partitioning	ADFG Norcross	See 95320A.		96320
95320U	Somatic and Spawning Energetics of Herring/Pollock	ADFG Paul, UAF	See 95320A.		96320
95320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG Scheel, PWSSC	See 95320A. [NOTE: This component of SEA was funded for close-out/report writing only in FY 96.]	Estimate that from 1.1-2.4% of the 241.7 million pink and chum salmon fry released into Lake Bay (Esther Island, PWS) in 1995 were consumed by seabirds in and near Lake and Quilliam Bays in the period April-June 1995. Black-legged kittiwakes and marbled murrelets were the most abundant avian predators on these fry.	96320
95417	Carry-forward: Waste Oil Disposal Facilities	ADEC	No report required (project canceled).		
95422-CLO	Closeout: Restoration Plan EIS/Record of Decision	USFS	No report required.		
95424	Restoration Reserve	All All	No report required.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ Proposer</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95427	Harlequin Duck Recovery Monitoring	ADFG Rosenberg	Annual report peer reviewed; not yet at OSPIC.	Males comprised a significantly greater proportion of the total population in western PWS during the first spring survey. Compared to eastern PWS, in western PWS the ratio of paired to non-paired females was significantly lower, males comprised a significantly greater proportion of the total population during the fall, a greater proportion of flightless females was observed in late July, and the influx of females was delayed. The influx of males was accelerated in eastern PWS. No broods were observed in PWS.	96427
95428-CLO	Closeout: Subsistence Planning Project	ADFG Fall	FY 95 findings included in annual report submitted under 94428. See 94428 for status.		94428
95505B	Data Analysis for Stream Habitat	USFS Olson	Final report accepted by OSPIC; available to public. Report also includes findings from 93051 and 94505.	Olson, R.A., 1995. Use of aerial photograph, channel-type interpretations to predict habitat availability in small streams, USDA, Forest Service, Chugach N.F., Anchorage, AK	93051, 94505

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
6001	Recovery of Harbor Seals from EVOS: Condition and Health Status	ADFG Castellini/UAF	<u>Oct - Dec:</u> DONE: Analysis and statistical study of fall blood samples DONE: Analysis of blubber water content <u>Jan - Mar:</u> DONE: Modeling of body morphometrics CANCELED: First collection of field samples outside of PWS <u>Apr - June:</u> CANCELED: Second collection of field samples outside of PWS -- COLLECTED FIELD SAMPLES INSIDE PWS DONE: Analysis of all blood samples <u>July - Sept:</u> Modeling of body morphometrics and blubber data, and body condition indices Second collection of field samples inside PWS
96007A	Archaeological Index Site Monitoring	ADNR Reger/ADNR	<u>Oct - Mar:</u> DONE: Complete requirements for final approval of project including NEPA compliance <u>Apr - June:</u> DONE: Obtain field supplies, schedule field trips <u>July - Sept:</u> Conduct field visits to sites and preliminary reports of activities
96007B	Site Specific Archaeological Restoration	USFS Yarborough/US FS	<u>Oct - Dec:</u> DONE: Analysis of field data and specialists reports <u>April 15:</u> Final report on project 95007B due DUE DATE EXTENDED TO AUGUST 31, 1996

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96009D	Survey of Octopuses in Intertidal Habitats	USFS Scheel/PWSSC	NOTE: Contract written for calendar year 1996, so includes first quarter of FY 97 <u>Jan - Mar:</u> DONE: Hire personnel DONE: Arrange insurance or dive contracts DONE: Advertise and award contract vessel charters DONE: Visit new sites <u>Apr - June:</u> DONE: Report results of FY95 to subsistence users in Tatitlek and Chenega Bay DONE: Begin field work including tag-recapture and SCUBA sampling monthly <u>July - Sept:</u> Continue tag-and-recapture and SCUBA sampling monthly Conduct habitat sampling at multiple sites at the end of June <u>Oct-Dec:</u> Last SCUBA survey
96012A-BAA	Comprehensive Killer Whale Investigation in Prince William Sound, Alaska	NOAA Matkin/N Gulf Oceanic	NOAA CONTRACT PERIOD IS 4/15/96-5/6/96; UNCLEAR HOW THIS AFFECTS SCHEDULE. <u>Jan-Mar:</u> DONE: Enter and tabulate available data <u>Apr-June:</u> Grid data, calculate sightings Examine dietary overlap <u>July-Sept:</u> UNDERWAY: Field work (monitoring) Analyze distribution of foraging behavior Estimate total predation on harbor seals Complete population separation using genetic techniques Finalize GIS/predation work
96025	Mechanism of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI Holland-Bartels et al	NO INFORMATION PROVIDED
96027	Kodiak Archipelago Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC Piper/ADEC	<u>Oct - Dec:</u> DONE: Draft report <u>Jan - Mar:</u> UNDERWAY: Report to general public DELETED: Community meetings. <u>April 15:</u> DONE: Final report due.

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96031	Development of a Productivity Index to Monitor the Reproductive Success of Marbled and Kittlitz's Murrelets in Prince William Sound, Alaska	DOI Kuletz/DOI	<u>Oct - Mar:</u> Work on report <u>May 31:</u> DONE: Draft final report due -- REPORT SUBMITTED 7/2/96 (SEE PROJECT 95031).
96038	Publication of Seabird Restoration Workshop	DOI Pac Seabird Group	<u>Oct - Dec:</u> DONE: Drafts of workshop discussions submitted <u>Jan - Mar:</u> Preparation of review articles based on recommendations of workshop attendees White papers and workshop discussion papers revised by authors based on information and opinions from reviews <u>April 15:</u> DELAYED TO MID-MAY: Final report due <u>July - Sept:</u> DELAYED TO NOV. 1996: Drafts submitted to editors for publication in a book APRIL 1997: MANUSCRIPT SUBMITTED TO PUBLISHER LATE FALL 1997: PAGE PROOFS PRODUCED BY PUBLISHER
96043B	Monitoring of Cutthroat Trout and Dolly Varden Habitat Improvement Structures	USFS Gillikin/USFS	<u>Oct - Dec:</u> UNDERWAY: Report on preliminary finds of population and distribution estimations. [NOTE: Preliminary results indicate population estimates may not be determined with present data.] <u>July - Sept:</u> UNDERWAY: Inspect and measure effects of installed structures UNDERWAY: Conduct population estimates
96048-BAA	Historical Analysis of Sockeye Salmon Growth Among Populations Affected by Overescapement in 1989	NOAA Ruggerone/NR C, Inc.	PER NOAA CONTRACT: <u>Oct 1997</u> UNDERWAY: Collect and press scales UNDERWAY: Age scales and select scales for measurement <u>Nov 1997</u> UNDERWAY: Measure scales <u>Feb 1998</u> Analyze data <u>Mar 1998</u> Prepare final report

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### Quarter Ending June 30, 1996

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96052	Community Involvement & Use of Traditional Knowledge	ADFG/Miraglia Brown/Chugach hRRC	<u>Oct-Dec:</u> DONE: ADFG and CRRC enter into contract for coordination of facilitator network DONE: MOU drafted between ADFG and CRRC DONE: Spill Area Wide Coordinator hired DRAFT DONE: Guidelines/protocols developed for TEK Identification of injured species for TEK <u>Jan-Mar:</u> DONE: Facilitator network in place and operating Begin work on TEK database DONE: Training workshop for local community facilitators <u>Apr-June:</u> Training workshop for local community facilitators WORKED WITH COMMUNITIES TO DEVELOP FY 97 PROJECT PROPOSALS
96064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	ADFG Frost/ADFG	<u>Oct - Dec:</u> DONE: Retrieve ARGOS data DONE: Analysis of fatty acid samples and aerial survey data DONE: Analysis of genetic samples DONE: Meet with hunters about study results, distribute newsletter DONE: Meet with SWFSC regarding genetics analyses <u>Jan - Mar:</u> DONE: Order SLTDRs for field season DONE: Coordination meeting with other ADFG harbor seal projects DONE: Arrange logistics (boats, airplanes, equipment, contracts, supplies) DONE: Reserve ARGOS satellite channels <u>Apr - June:</u> DONE: Field work to catch seals and collect sample UNDERWAY: Finalize manuscript on power analysis for submission UNDERWAY: Finalize population model and model simulations <u>July - Sept:</u> Analysis of fatty acid samples Conduct aerial surveys during molting Attach 12 SLTDRs, sampling
96074	Herring Reproductive Impairment	NOAA Rice & Carls NOAA	<u>Oct-Dec:</u> DONE: Analyze field data <u>Apr-June:</u> UNDERWAY: Complete data analysis <u>June 15:</u> Submit final report



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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96076	Effects of Oiled Incubation Substrate on Straying and Survival of Wild Pink Salmon	NOAA Wertheimer/NOAA	<u>Oct-Mar:</u> NO ACTIVITIES SCHEDULED THIS QUARTER. <u>Apr-June:</u> UNDERWAY: Oil exposure of 1995 brood embryos DONE: Marking of 1995 brood fry (MARKED AND RELEASED 459,000 PINK SALMON) <u>July-Sept:</u> Spawning of 1997 brood adults
96086	Herring Bay Monitoring and Restoration Studies	ADFG Highsmith/UAF	<u>Oct - Mar:</u> DONE: Lab analysis, data analysis <u>April 15:</u> DELAYED TO AUGUST 15: Final report (on 95086C) due
96090	Mussel Bed Restoration and Monitoring	NOAA Babcock/NOAA & Irvine/DOI	<u>Oct - Mar:</u> ONGOING: Chemical analyses conducted <u>September 30:</u> Final report due
96101	Removal of Introduced Foxes From Islands	DOI Ebbert/DOI	<u>Apr 15:</u> DONE: Submit final report (on 95041)
96106	Subtidal Monitoring: Eelgrass Communities	ADFG Jewett/UAF	<u>Oct - Mar:</u> UNDERWAY: Process benthic, sediment, and hydrocarbon samples Data entry and analyses <u>May 30:</u> DELAYED TO 9/30/96: Final report due
96115	Sound Waste Management Plan	ADEC Roetman/PWS EDC	<u>Oct-Dec:</u> DONE: Draft report <u>Jan:</u> DONE: PWSEDC report to the Prince William Sound communities recommending solutions for solid waste and marine pollution.

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96127	Tatitlek Coho Salmon Release	ADFG/Moore Kompkoff/Tatit lek IRA	<u>Oct - Dec:</u> DONE: Prepare contract with Tatitlek IRA through PWS Economic Development Council <u>Jan - March:</u> UNDERWAY: Incubate eggs for 1997 release DONE: Rear smolts for 1996 release <u>Apr - June:</u> DONE: Transport smolt to Boulder Bay and place in net pens DONE: Release smolt into Boulder Bay <u>July - Sept:</u> Egg take
96131	Chugach Native Region Clam Restoration	ADFG/Moore Brown/Chugac hRRC	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan-Mar:</u> DONE: Obtain permits and construct and install tidal FLUPSY at Tatitlek DONE: Obtain permits and initiate predator control studies on razor clam beaches near Eyak DONE: Obtain permits and initiate beach seeding experiments in Tatitlek and Port Graham/Nanwalek <u>Apr-June:</u> Collect broodstock -- SPAWNED BROOD (50 ANIMALS) ON HAND FROM LAST YEAR; 10 MILLION LARVAE ON HAND DONE: Obtain clearance and transport to hatchery DONE: Transfer 5mm seed to hatchery nursery and FLUPSY <u>July-Sept:</u> DONE: Conduct baseline shellfish surveys of tidelands near Ouzinkie and Chenega Bay
96139A1	Salmon Instream Habitat and Stock Restoration - Little Waterfall Barrier Bypass Improvement	ADFG Honold/ADFG	<u>Oct - Dec:</u> DONE: Project construction and oversight <u>Jan - Mar:</u> DONE: Egg-to-fry survival sampling <u>Apr - June:</u> UNDERWAY: Juvenile coho abundance sampling <u>July - Sept:</u> UNDERWAY: Spawner abundance and distribution surveys

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96139A2	Spawning Channel Construction Project Port Dick Creek, Lower Cook Inlet	ADFG Dudiak/ADFG	<u>Oct - Mar:</u> DONE: Continue groundwater fluctuation measurements DONE: Complete environmental assessment DONE: Develop engineers drawings DONE: Complete permit requirements <u>Apr - June:</u> DONE: Receive and award bid package DONE: Complete the construction of the channel <u>July - Sept:</u> Conduct stream side egg takes
96139C1	Montague Riparian Rehabilitation Monitoring Program	USFS Hodges/USFS	<u>April - June:</u> DONE: Monitor structures at low flow DONE: Map stream channels at structures and areas downstream DONE: Assess use of fish habitat and vegetation <u>July - Sept:</u> UNDERWAY: Report writing
96142-BAA	Status and Ecology of Kittlitz's Murrelet in Prince William Sound	NOAA ABR, Inc.	NOAA CONTRACT PERIOD IS 4/4/96-12/31/97 <u>Jan - Mar:</u> Arrange logistics <u>Apr - June:</u> DONE: Conduct early summer cruise <u>July - Sept:</u> Conduct late summer cruise Analyze stomach contents Key punch data and QA/QC Digitize data, measure geographic data, QA/QC
96144	Common Murre Population Monitoring	DOI Roseneau/DOI	<u>Apr-June:</u> DONE: Vessel contract and seasonal employee hire DONE: Coordinate logistics with 96163K DONE: Check/repair equipment DONE: Update census plot booklets DONE: Purchase supplies <u>July-Sept:</u> Data collection - Barren Islands Data entry

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96145	Cutthroat Trout and Dolly Varden: the Relation Among and Within Populations of Anadromous and Resident Forms	USFS Reeves/PacNW Research Lab	<u>Oct - Dec:</u> DONE: Develop cooperative agreement with OSU DONE: Secure appropriate collecting permits DONE: Obtain samples of Dolly Varden and cutthroat trout for analysis DONE: Hire technician for genetic analysis DONE: Hire field technician (Kitty Griswold) <u>Jan - Mar:</u> DONE: Complete genetic screening DONE: Select field sites DONE: Secure contract vessel DONE: Assemble required field gear and ship to Cordova <u>Apr - June:</u> DONE: Contract with people (2) or field work DONE: Begin analysis <u>July - Sept:</u> Collect samples of Dolly Varden at field sites Initial analysis of genetic data on cutthroat trout [NOTE: Semi-annual report submitted to OSPIC July 11, 1996. The annual report, which will be number 96145-1, is due April 15, 1997.]
96149	Archaeological Site Stewardship	ADNR Reger/ADNR	<u>Oct - Dec:</u> DONE: NEPA compliance DONE: Preliminary site selection UNDERWAY: Preliminary steward selection <u>Jan - June:</u> DONE EXCEPT FOR KODIAK: Training documentation provided to stewards DONE: Site selection finalized UNDERWAY: Sites visited and site documentation finalized <u>July - Sept:</u> Monitoring reports from stewards to coordinators due for compilation

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
5154	Comprehensive Community Plan for Restoration of Archaeological Resources in PWS and Lower Cook Inlet	USFS Johnson/CHF	<u>Oct - Dec:</u> UNDERWAY: Organize working group, assess facility needs, evaluate alternatives, assess training needs <u>Jan - Mar:</u> Assess field reports DONE: Community review conference POSTPONED TO 5/15/96: Submit draft plan to Executive Director 3/14/96 <u>Apr - June:</u> Public meetings <u>July - Sept:</u> Submit revised plan to Executive Director 7/15/96 -- REVISED DRAFT DUE 8/31/96 Present plan to Trustee Council 8/15/96 -- DELAYED Submit final plan and project reports 9/30/96 -- DELAYED TO 10/31/96
96159	Surveys to Monitor Marine Bird Abundance In Prince William Sound During Winter and Summer 1996	DOI Aglér/DOI	<u>Oct-Dec:</u> DONE: Arrange logistics <u>Jan-Mar:</u> DONE: Hire and train personnel DONE: Conduct winter survey in PWS <u>Apr-June:</u> DONE: Enter data DONE: Arrange logistics for summer survey <u>Jul-Sept:</u> Conduct summer survey in PWS Analyze data
96161	Differentiation and Interchange of Harlequin Duck Populations Within N. Pacific Region	DOI Goatcher/DOI	NO ACTIVITIES SCHEDULED THIS QUARTER. <u>April - June:</u> DONE: Procure equipment and supplies DONE: Procure vessels <u>July-Sept:</u> Harlequin duck capture, sample collection, banding

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96162	Investigations of Disease Factors Affecting Declines of Pacific Herring Populations in Prince William Sound, AK	ADFG UW/Kocan UCS/Marty SFU/Kennedy	<u>Oct - Dec:</u> DONE: Culture herring larvae and determine their SPF status DONE: Collect data on growth, survival, disease susceptibility Improve husbandry techniques DONE: Begin viral and fungal exposures <u>Jan - June:</u> UNDERWAY: Continue or begin infectivity studies with VHSV and <i>I. hoeri</i> DONE: Begin new year of SPF fish from eggs for future studies. DONE: Re-isolate organisms and verify that monoxenic infections were produced DONE: Begin blood chemistry on infected fish and physiological studies <u>July - Sept:</u> Collect 0-age herring for stress exposures technique development Analyze data Begin immune suppression studies on experimental fish for comparison with data from wild fish (PWS)
96163A	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species	NOAA Haldorson/NOAA	<u>July - Sept:</u> Cruise
96163B	Foraging of Seabirds	DOI Ostrand/DOI	<u>Jan - June:</u> DONE: Logistics planning DONE: Coordinate with SEA's herring study for data collection <u>July - Sept:</u> Forage fish cruises <u>Oct - Dec:</u> Data evaluation
96163C	Fish Diet Overlap Using Fish Stomach Content Analysis	NOAA Sturdevant/NOAA	<u>April - June:</u> DONE: Complete processing of 1995 samples DONE: Purchase sampling supplies for 1996 <u>July - Sept:</u> Field season Process 1996 diet samples
96163D	Distribution of Forage Fish as Indicated by Puffin Diet Sampling	DOI Piat/DOI	<u>April 15:</u> DONE: Submit final report (95163D)

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
6163E	Black-legged Kittiwakes as Indicators of Forage Fish Availability	DOI Irons/DOI	<u>April - June:</u> DONE: Prepare for field season DONE: Begin field work <u>July - Sept:</u> Complete field work Analyze data
6163F	Factors Affecting Recovery of Pigeon Guillemot Populations	DOI Hayes/DOI	<u>April - June:</u> DONE: Prepare for field season DONE: Begin field work <u>July - Sept:</u> Complete field work Begin data analysis
6163G	Diet Composition, Reproductive Energetics, and Productivity of Seabirds	NOAA Roby/OSU	NOAA CONTRACT PERIOD IS 5/1/96-4/30/97 <u>July - Sept:</u> Collect field data
6163I	APEX Planning and Project Leader	DOI Duffy	Not applicable.
6163J	Barren Islands Seabird Studies	DOI Roseneau/DOI	<u>April - June:</u> DONE: Finalize logistical needs DONE: Set up camp at East Amatuli Island DONE: Begin data collection <u>July - Sept:</u> Data collection Begin data analysis
6163K	Using Predatory Fish to Sample Forage Fish	DOI Roseneau/DOI	<u>April 15:</u> DONE: Submit final report (95163K)
6163L	Historical Review of Ecosystem Structure in the PWS/GOA Complex	DOI Piatt/DOI	NO UPDATE INFORMATION PROVIDED <u>April - June:</u> Decide on common format for combined database Produce comma-delimited data tables Begin exploratory data analysis and structuring of data for GIS work <u>July - Sept:</u> Continue data analysis

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96163M	Lower Cook Inlet Study	DOI Piatt/DOI	<u>April - June:</u> DONE: Initiate hydroacoustic and seabird surveys in Kachemak Bay DONE: Trawl sampling DONE: Set up field camps UNDERWAY: Colony censusing and plot monitoring <u>July-Sept:</u> DONE: Initiate pilot studies using radio telemetry Trawling and hydroacoustic surveys in lower Cook Inlet Initiate colony observations on chick feeding and adult attendance Remove field camps
96163N	Black-legged Kittiwake Feeding Experiment	DOI Romano/DOI	<u>April - June:</u> DONE: Begin catching fish for food during captive feeding trials DONE: Mark accessible nests to obtain chicks for capture <u>July - Sept:</u> Continue feeding experiment
96163O	Statistical Review	DOI McDonald/Western Ecosystem	NO UPDATE INFORMATION PROVIDED <u>April - June:</u> Continue spatial analysis of 1996 acoustic survey data Develop sampling plans
96163P	Sand Lance Hydrocarbon Exposure	NOAA Anderson/NOAA	<u>April - June:</u> Search for sand lance sites <u>July - Sept:</u> Collect samples Ship fish samples to Kelso, WA for extraction Send selected extracts to Auke Bay lab
96165	Genetic Discrimination of Prince William Sound Herring Populations	ADFG J. Seeb/ADFG	<u>Oct - Dec:</u> DONE: Laboratory analysis -- REPORT PENDING FROM CONTRACTOR <u>Jan - Mar:</u> UNDERWAY: Evaluate lab results DONE: Collect herring from Sitka Sound <u>Apr - June:</u> DONE: Collect samples of early spawning herring in PWS DONE: Plan for collection in PWS, Kodiak, Togiak Bay, and Norton Sound Begin laboratory analysis -- WILL BEGIN IN OCTOBER



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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96166	Herring Natal Habitats	ADFG Carpenter & Willette/ADFG	<u>Jan - Mar:</u> DONE: Biomass estimates <u>Apr - June:</u> DONE: Conduct acoustic survey DONE: Collect AWL, fecundity, disease, genetic stock ID, and bioenergetics samples DONE: Initiate dive surveys DONE: Assist reproductive impairment sample collection UNDERWAY: Lab processing of diver samples <u>July - Sept:</u> Finalize estimate of spawning
96170	Isotope Ratio Studies of Marine Mammals in Prince William Sound	ADFG Schell/UAF	<u>Oct - Mar:</u> DONE: Analyze isotope ratio samples collected in 1994 - 1995 (THROUGH MARCH 1996) DONE: Initial captive animal experiments <u>Apr - Sept:</u> UNDERWAY: Field work and sampling UNDERWAY: Captive animal experiments UNDERWAY: Analysis of samples collected from Native hunts and NMFS collections of sea lion tissues
96180	Kenai Habitat Restoration & Recreation Enhancement Project	ADNR Fries/ADNR	<u>Oct - Mar:</u> DONE: Review existing data on Kenai River DONE: Develop implementation strategy DONE: Develop site evaluation, ranking and prioritization system DONE: Conduct preconstruction site surveys DONE (DRAFT): Develop design plans UNDERWAY: Apply for permits DONE: Conduct public scoping meetings and prepare environmental compliance documents Organize volunteer support <u>Apr - June:</u> DONE: Develop cooperative agreements UNDERWAY: Work with applicants to develop detailed project plans/budgets Secure construction permits DELAYED: Conduct construction work on first priority sites <u>July - Sept:</u> Monitor revegetation sites Monitor public use of completed project and proposed sites for next year

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.L.</u>	<u>Project Tasks Completed this Quarter</u>
06186	Coded Wire Tag Recoveries From Pink Salmon in Prince William Sound	ADFG Joyce/ADFG	<u>Oct - Dec:</u> DONE: Order supplies; create and test computer programs <u>Apr - June:</u> UNDERWAY: Hire personnel DONE: Apply tags to pink salmon fry at hatcheries <u>July - Sept:</u> UNDERWAY: Scan catches; recover tagged fish UNDERWAY: Decode tags UNDERWAY: Provide inseason catch composition estimates
06188	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in Prince William Sound	ADFG Joyce/ADFG	<u>Oct - Dec:</u> DONE: Apply thermal marks to embryos at four pink salmon hatcheries <u>Jan - Mar:</u> DONE: Collect samples from incubators <u>Apr - June:</u> UNDERWAY: Process and evaluate otoliths UNDERWAY: Develop methodology for collecting unbiased representative sampling from tenders <u>July - Sept:</u> Analyze data
06190	Construction of a Linkage Map for the Pink Salmon Genome	ADFG Allendorf/UM	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan-Mar:</u> DONE: Initial screen of even-year fish for DNA polymorphisms DELAYED UNTIL AUG/SEPT: Initial screen of odd-year fish for DNA polymorphisms <u>July-Sept:</u> UNDERWAY: Screen DNA polymorphisms to test for Mendelian inheritance and joint segregation Obtain gametes and create families for inheritance studies with even-year fish

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<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
96191A	Oil-Related Embryo Mortalities in PWS Pink Salmon Populations	ADFG J. Seeb/ADFG	<u>Oct - Dec:</u> DONE: Embryo deposition sampling DONE: Initiate haploid androgenesis and novel mutation screen contracts DONE: Obtain gametes, spawn second generation DONE: Send milt to University of Washington on contract to produce androgenetic haploids DONE: Begin fertilized egg incubation UNDERWAY: Analysis of embryos at ADFG genetics laboratory <u>Jan - Mar:</u> UNDERWAY: Analyze data for brood year 1995
96191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA Rice/NOAA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr-June:</u> ONGOING: Final evaluation of progeny
96195	Pristane Monitoring in Mussels and Predators of Juvenile Pink Salmon & Herring	NOAA Short/NOAA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan - Mar:</u> DONE: Prepare logistics for FY96 field season <u>April - June:</u> DONE: Spring collections <u>July - Sept:</u> Collect mussel and predator tissue samples Analyze collected samples for pristane
96196	Genetic Structure of Prince William Sound Pink Salmon	ADFG J. & L. Seeb/ADFG	<u>Jan - Sept:</u> UNDERWAY: In-house allozyme analysis of archive samples collected prior to 1995 UNDERWAY: mtDNA analysis <u>July - Sept:</u> UNDERWAY: Field collections of 1996 samples

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96210	Prince William Sound Youth Area Watch	ADFG Chugach RRC	<u>Oct - Dec:</u> DONE: Students selected to participate DONE: Students receive training DONE: Students select onshore research and testing sites DONE: Students select offshore sites DONE: Students set up database <u>Ongoing:</u> DONE: Students check onshore testing sites twice weekly DONE: Students check offshore area testing sites twice monthly DONE: Students provide data to PWSSC weekly
96214	Documentary on Subsistence Harbor Seal Hunting in PWS	ADFG Tatitlek Village	<u>Oct - Dec:</u> DONE: Award contract <u>Jan - Mar:</u> DONE: Develop story line and story board for video <u>Apr - June:</u> DONE: Shoot necessary footage, conduct interviews <u>July - Sept:</u> UNDERWAY: Edit film Contractor will deliver 40 copies of videos
96220	Eastern PWS Wildstock Salmon Habitat Restoration	USFS/Schmid Eyak Native Village	<u>Oct - Mar:</u> Review of existing information DONE: Recruit fish habitat survey crew leader <u>Apr - June:</u> DONE: Identify study streams DONE: Recruit student interns DONE: Arrange logistics <u>July - Sept:</u> Conduct fisheries habitat surveys Analysis of field data

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96222	Chenega Bay Salmon Restoration -- Anderson Creek	USFS/Murphy Chenega IRA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> Interview Chenega Bay residents about Anderson Creek <u>July - Sept:</u> Complete habitat surveys Complete project EA and preliminary fish pass design  PROJECT CANCELED -- NOT FEASIBLE DUE TO STREAM POLLUTION.
96225	Port Graham Pink Salmon Subsistence Project	ADFG/Moore Port Graham	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> 250,000 pink salmon fry placed in net pens and reared to an average weight of 8 grams -- HALF RELEASED AT 0.75 GRAM AS PER MODIFIED PROPOSAL; HALF RELEASED AT 1.0 GRAM END OF JUNE DUE TO OUTBREAK OF VIBRIO <u>July - Sept:</u> Monitor pink salmon escapement into Port Graham Capture hatchery broodstock Egg take
96244	Community-Based Harbor Seal Management and Biological Sampling	ADFG/Fall Reidel/ANHSC Fall/ADFG	<u>Oct-Dec:</u> DONE: Develop contracts with the Alaska Native Harbor Seal Commission and the University of Alaska, hire technicians DONE: Hold regional training sessions for biological sampling DONE: Begin biological sample collection DONE: Hold first workshop (ANHSC) <u>Jan-Mar:</u> Distribute first proceedings report <u>Apr-June:</u> DONE: Demonstrate traditional knowledge database (ADFG) <u>July - Sept:</u> Hold second workshop (ANHSC) Produce/distribute second proceedings report (ANHSC) <u>Ongoing:</u> Conduct interviews with hunters to collect traditional knowledge (ADFG)

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6255	Kenai River Sockeye Salmon Restoration	ADFG L. Seeb & Tarbox/ADFG	<u>Oct - Dec:</u> DONE: Lab analysis of 1995 allozyme samples DONE: Lab analysis of DNA samples DONE: Award contracts for DNA analysis <u>Jan-Sept:</u> UNDERWAY: Refine fishery model UNDERWAY: Fishery sample collection and in-season estimation UNDERWAY: Hydroacoustic assessment
6256	Columbia and Solf Lakes Sockeye Salmon Stocking	USFS Gillikin	<u>Oct - Dec:</u> DONE: Review by Regional Planning Team <u>July - Sept:</u> UNDERWAY: Analyze stream flows and update baseline limnological data
6258A	Sockeye Salmon Overescapement Project	ADFG Schmidt & Tarbox/ADFG	<u>Jan - Mar:</u> DONE: Analyze zooplankton, water quality, and hydroacoustic data
6259	Restoration of Coghill Lake Sockeye Salmon	ADFG Kyle/ADFG	<u>Jan - Mar:</u> DONE: Personnel and logistics for field season DONE: Contact USFS regarding purchase and application of fertilizer <u>April - June:</u> DONE: Enumeration and AWL sampling of smolts DONE: Three limnological surveys UNDERWAY: Limnological surveys UNDERWAY: Analysis of smolt data
96272	Chenega Chinook Release Program	ADFG PWSAC	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> DONE: Install netpen at Crab Bay DONE: Feed and imprint smolts <u>July - Sept:</u> UNDERWAY: Take chinook eggs for incubation

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6290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	NOAA Short/NOAA	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan - Sept:</u> UNDERWAY: Solicit information from potential new user groups and begin development of interface for such groups
6291	Chenega-area Shoreline Residual Oiling Reduction	ADEC Chenega Bay and ADEC	<u>July - Sept:</u> Enter into contract with PWSEDC Form Advisory Committee Remediation plan 50% complete
6320E	Salmon and Herring Predation	ADFG Willette	<u>Oct-Dec:</u> DONE: Field sampling DONE: Sample processing and data entry <u>Apr-June:</u> DONE Field sampling in May DONE: Field sampling in June UNDERWAY: Sample processing and data entry <u>July-Sept:</u> Field sampling in July
6320G	Phytoplankton and Nutrients	ADFG McRoy/UAF	<u>Oct-Mar:</u> DONE: Planning for field season <u>April - June:</u> DONE: Cruises in April, May, June DONE: Hatchery time series <u>July - Sept:</u> Analyze samples

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6320H	Zooplankton in the PWS Ecosystem	ADFG Cooney/UAF	<u>Oct-Mar:</u> DONE: Planning for field season <u>April - June:</u> DONE: Complete Alpha Helix cruise UNDERWAY: FY 96 data analysis and sample processing <u>July - Sept.</u> Attend SEA workshop in Seward
6320I	Isotope Tracers - Food Webs of Fish	NOAA PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Apr. 15, 1997:</u> Report due
6320J	Information Systems and Model Development	NOAA/ADFG PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>April - June:</u> DONE: Second generation Catalog Services Interface online via World Wide Web interface DONE: Implement new generation visualization tools involving UCS-to-geometry UNDERWAY: Testing and refinement of 1-d nekton model DONE: Expand SEA home page
96320K	PWSAC: Experimental Fry Release	ADFG PWSAC	<u>Oct-Dec:</u> DONE: Eggs taken and incubating <u>Jan - Mar:</u> DONE: Pink fry ponded and reared DONE: Release fry -- FRY RELEASED 6/15/96
96320M	Physical Oceanography in PWS	NOAA/ADFG Salmon, PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Jan - Mar:</u> UNDERWAY: Process data from March cruise UNDERWAY: Plan data collection for April cruise <u>April - June:</u> DONE: Cruises April, May, June



**Exxon Valdez Oil Spill Project Status Summary**  
**1996 Work Plan**  
**Quarter Ending June 30, 1996**

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
6320N	Nekton/Plankton Acoustics	NOAA/ADFG PWSSC	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Jan - Mar:</u> DONE: Field measure spring herring distribution <u>April - June:</u> DONE: Field measurements DONE: Apply electroacoustic calibrations to spring 1996 data
6320Q	Avian Predation on Herring Spawn	USFS Bishop/USFS	<u>Oct-Dec:</u> UNDERWAY: Data analysis <u>June 30:</u> Submit final report -- DELAYED. NOW EXPECT 9/15/96.
6320R	SEA Trophodynamic Modeling and Validation Through Remote Sensing	ADFG Eslinger/UAF	<u>Oct-Dec:</u> DONE: Planning for field season <u>Jan - Mar:</u> DONE: Deploy CLAB buoy UNDERWAY: Determine utility of remotely sensed data for monitoring flow into (vs. by) PWS UNDERWAY: Compare AVHRR and CTD data DELAYED PENDING RESOLUTION OF GRID ISSUE WITH 6320J: Define 3-D model grid DONE: Test physical/phytoplankton coupling with model DONE: Test phytoplankton/zooplankton coupling with model <u>April - June:</u> UNDERWAY: Build 3-D biophysical model code

# Exxon Valdez Oil Spill Project Status Summary

## 1996 Work Plan

### Quarter Ending June 30, 1996

<u>Project #</u>	<u>Project Title</u>	<u>Lead Agency/ P.I.</u>	<u>Project Tasks Completed this Quarter</u>
6320T	Juvenile Herring Growth and Habitat Partitioning	ADFG Norcross/ UAF	<u>Oct-Dec:</u> DONE: Develop conceptual herring recruitment model DONE: Stomach analysis UNDERWAY: Analyze broadscale horizontal distribution data UNDERWAY: Compile companion datasets for habitat analysis <u>Jan - Mar:</u> DONE: Broadscale cruise; acoustics and net sampling DONE: Catch database UNDERWAY: Historic interviews with fishermen and Native communities <u>April - June:</u> DONE: Diel surveys 4 Bays, cruises May and June, acoustics and net sampling DONE: Aerial surveys PWS, coordinated surveys of 4 diel bays DONE: Meet with APEX group to coordinate July field sampling DONE: Meet with SEA modelers and herring Pls to design survival-growth-recruitment model UNDERWAY: Stomach analysis, 1996 samples UNDERWAY: Analyze March 1996 broadscale horizontal distribution data UNDERWAY: Analyze March 1996 age-length-weight data <u>July - Sept:</u> Broadscale cruise, July cruise, acoustics and net sampling
6320U	Energetics of Herring and Pollock	ADFG Paul/UAF	<u>Oct-Dec:</u> DONE: Process bioenergetic samples collected fall 1995 <u>Apr-June:</u> DONE: Complete sample analysis of 1995 samples DONE: Process bioenergetic samples collected spring 1996 <u>July - Sept:</u> DONE: Complete analysis of spring 1996 samples UNDERWAY: Analyze summer samples
6320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG PWSSC	<u>Apr 15:</u> DONE: Report due

# Exxon Valdez Oil Spill Project Status Summary

## 15 Work Plan

### Quarter Ending June 30, 1996

Lead Agency/  
P.I.

Project Tasks Completed this Quarter

Project #

Project Title

96320Z1

Synthesis and Integration

ADFG  
Cooney/UAF

Oct-Dec:

DONE: Develop model-based structures

Jan - Mar:

UNDERWAY: Develop synthesis plans for FY97

April - June:

DONE: Submit single FY97 DPD and single collated FY97 report

UNDERWAY: Convene workgroup meetings and teleconferences

July - Sept:

PLANNING UNDERWAY: Convene major synthesis workshop for SEA in Seward

96326

Completion of NRDA MM6/Data Re-analysis

DOI  
Ballachey

NO UPDATE INFORMATION PROVIDED

96427

Harlequin Duck Recovery Monitoring

ADFG  
Rosenberg/AD  
FG

Oct-Dec:

DONE: Apply for USFS permits

Jan - Mar:

DONE: Initiate hiring process for seasonal technicians

Apr - June:

DONE: Hire technicians, arrange field logistics for field camps, boats, motors, survey equipment

UNDERWAY: Begin surveys

July - Sept:

UNDERWAY: End Surveys

Oct - Dec:

Analyze field data and begin report preparation

96507

EVOS Symposium Publication

NOAA  
Wright/NOAA

Oct - Dec:

DONE: Manuscripts to project editor

Jan - Mar:

DONE: Manuscripts to typesetter

DONE: Proof to authors

DONE: Corrected proof to typesetter

Apr - June:

Text to printer -- DELAYED TO AUGUST

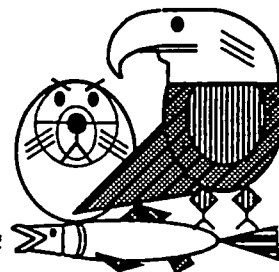
Proceedings published -- DELAYED TO AUGUST

# Exxon Valdez Oil Spill Trustee Council

Restoration Office

645 G Street, Suite 401, Anchorage, Alaska 99501-3451

Phone: (907) 278-8012 Fax: (907) 276-7178



## MEMORANDUM

TO: Trustee Council Members

FROM: Sandra Schubert  
Project Coordinator

THROUGH: Molly McCann  
Executive Director

DATE: June 3, 1996

RE: Quarterly Project Status Summary -- March 31, 1996

RECEIVED  
JUN 20 1996

EXXON VALDEZ OIL SPILL  
TRUSTEE COUNCIL  
ADMINISTRATIVE RECORD

Attached is the *Exxon Valdez* Oil Spill Project Status Summary for the quarter ending March 31, 1996, for all projects funded by the Trustee Council during 1992, 1993, 1994, 1995, and 1996. The Summary focuses on the status of annual and final reports, and includes progress updates for FY 96 projects.

As of March 31, 1996, a total of 120 project reports had been peer reviewed and accepted by the Chief Scientist. Once accepted by the Chief Scientist, reports are submitted to the Oil Spill Public Information Center (OSPIC) where they are reviewed for proper technical formatting, and then made available to the public. As of March 31, 1996, 69 reports were available to the public through OSPIC and other libraries around the state. (See Attachment C for a list of libraries, and a list of reports available). An additional 25 reports were undergoing formatting review at OSPIC.

This memorandum summarizes the status of reports for each project year. Attachment A summarizes the status of 1992, 1993, 1994 and 1995 reports by agency. Attachment B lists the reports that are significantly behind schedule. Reports are considered significantly behind schedule if (1) they have not yet been submitted to the Chief Scientist or were reviewed by the Chief Scientist, returned to the PI for revision longer ago than six months, and have not been revised and resubmitted to the Chief Scientist and (2) an extended due date has not been approved by the Restoration Office.

### **Status of 1992 Project Reports as of March 31, 1996**

A total of 60 projects were funded in the 1992 Work Plan. With very few exceptions, a final report -- that is, a report that is subject to peer review and approval by the Chief Scientist -- is required on each 1992 project. Some projects require more than one report. (NOTE: Reports "in progress" are in peer review, are under revision by the PI in response to peer reviewer comments, or have been revised and are undergoing a second review by the Chief Scientist.)

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
76	65	9	2
Status as of December 31, 1995			
75	58	15	2

### **Status of 1993 Project Reports as of March 31, 1996**

A total of 37 projects were funded in the 1993 Work Plan. With some exceptions, a final report -- that is, a report that is subject to peer review and approval by the Chief Scientist -- is required on each 1993 project (the eight projects whose reports are being prepared under 1994 project numbers are exceptions). Some projects require more than one report. (NOTE: Reports "in progress" are in peer review, are under revision by the PI in response to peer reviewer comments, or have been revised and are undergoing a second review by the Chief Scientist.)

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
29	21	6	2
Status as of December 31, 1995			
30	16	9	5

### **Status of 1994 Project Reports as of March 31, 1996**

A total of 42 projects were funded in the 1994 Work Plan. Beginning with the 1994 project year, "multi-year" projects that receive Trustee Council funding in consecutive years are allowed to submit an "annual" report each year until the project is complete, at which point a "final" report is required. The annual report, although subject to peer review, need not be rewritten in response to peer review comments. Rather, the peer review comments are to be

used to guide future work on the project. Annual reports are available to the public through OSPIC, and state on their front covers that "peer review comments have not been addressed in this report."

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
36	27	9	0
Status as of December 31, 1995			
38	16	19	3

#### **Status of 1995 Project Reports as of March 31, 1996**

A total of 66 projects were funded in the 1995 Work Plan. Reports on these projects were due April 15, 1996 unless a written proposal to extend the due date of the report was approved by the Restoration Office. Extensions were granted for 14 reports. As with FY 94 projects, annual reports are required on multi-year projects, and final reports are required on all other projects.

<u>Total Number of Reports</u>	<u>Reports Accepted by Chief Scientist</u>	<u>Reports in Progress</u>	<u>No Report Yet Submitted</u>
54	7	31	16

#### **Status of 1996 Projects as of March 31, 1996**

As indicated on the attached project status summary, the agency liaisons continue to report that essentially all projects are proceeding according to schedule, with activities focused primarily on preparation for the upcoming summer field season.

#### **Conclusion**

In brief, significant progress continues to be made toward the goal of making the results of studies funded by the Trustee Council available to the public through project reports. In total, 195 reports will be produced for projects funded in 1992, 1993, 1994, and 1995. As of March 31st, 120 of these reports had been accepted by the Chief Scientist and only 20 had not yet been submitted for peer review. Perhaps more importantly, 69 reports on studies funded by the Trustee Council are now available to the public through OSPIC.

**ATTACHMENT A****Summary of Project Report Status as of March 31, 1996****1992 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	0	0	2
ADFG	26	1	4	21	16
ADNR	1	0	0	1	1
DOI	33	0	5	28	10
NOAA	12	1	0	11	8
USFS	2	0	0	2	0
<b>TOTAL</b>	<b>76</b>	<b>2</b>	<b>9</b>	<b>65</b>	<b>37</b>

**1993 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	2	0	1	1	1
ADFG	13	1	4	8	7
ADNR	0	0	0	0	0
DOI	9	1	1	7	3
NOAA	3	0	0	3	2
USFS	2	0	0	2	1
<b>TOTAL</b>	<b>29</b>	<b>2</b>	<b>6</b>	<b>21</b>	<b>14</b>

**1994 WORK PLAN**

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	1	0	0	1	0
ADFG	18	0	3	15	4
ADNR	2	0	0	2	2
DOI	6	0	2	4	2
NOAA	5	0	2	3	5
USFS	4	0	2	2	2
<b>TOTAL</b>	<b>36</b>	<b>0</b>	<b>9</b>	<b>27</b>	<b>15</b>

## ATTACHMENT A

Summary of Project Report Status as of March 31, 1996

### 1995 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at OSPIC
ADEC	5	2	2	1	0
ADFG	27	5	18	4	2
ADNR	1	0	1	0	0
DOI	7	2	5	0	0
NOAA	8	5	2	1	0
USFS	6	2	3	1	1
<b>TOTAL</b>	<b>54</b>	<b>16</b>	<b>31</b>	<b>7</b>	<b>3</b>



# ATTACHMENT B

## Reports Significantly Behind Schedule

Agency	Project Number	PI	Final or Annual	Project Title	Status of Report	FY 97 Project
DOI	93006	Birkedahl	Final	Site specific archaeology	Never submitted. Bud Rice sent memo 4/19/96 to Birkedahl's supervisors asking that it be made a priority.	None
ADFG	FS01	Fried	Final	Spawning area injury	Never submitted. Delay due to departure of Sam Sharr. PI says much of text is written.	None
ADFG	93033-2	Rothe	Final	Harlequin duck restoration	Waiting for Fry's analysis; 2 yrs. overdue. Sullivan contacted Fry's superiors at UCDavis 4/96 to try to get some action.	None
DEC	95026	Braddock	Final	Hydrocarbon monitoring	Never submitted.	None
DEC	95060	Piper	Final	Spruce bark beetles	Never submitted. Literature search/report RSA'd to ADNR.	None

**RECEIVED**  
 JUN 20 1996  
 EXXON VALDEZ OIL SPILL  
 TRUSTEE COUNCIL  
 ADMINISTRATIVE RECORD

6/4/96

17.6.14

ATTACHMENT C

**OIL SPILL PUBLIC INFORMATION CENTER**

**645 G Street  
Anchorage, AK 99501  
(907) 278-8008  
(907) 265-9359 fax  
1-800-478-7745 Alaska  
1-800-283-7745 outside Alaska**

**RECEIVED**  
JUN 20 1996

**Final Reports  
May 1996**

EXXON VALDEZ OIL SPILL  
TRUSTEE COUNCIL  
ADMINISTRATIVE RECORD

Attached is a list of published final reports for Natural Resource Damage Assessment Studies and Restoration Projects. Copies of these reports may be checked out from the Oil Spill Public Information Center. Copies are also available for viewing at the following libraries:

A. Holmes Johnson Library - Kodiak  
Alaska Historical Library - Juneau  
Alaska Resources Library - Anchorage  
Alaska State Library - Juneau  
Alaska Department of Environmental Conservation Library - Juneau  
Alaska Department of Fish and Game Habitat Library - Anchorage  
Auke Bay Fisheries Lab Library - Juneau  
Cordova Public Library - Cordova  
E.E. Rasmusson Library - University of Alaska, Fairbanks  
Fairbanks North Star Borough Library - Fairbanks  
Kenai Community Library - Kenai  
Ketchikan Public Library - Ketchikan  
Kuskokwim Consortium Library - Bethel  
Library of Congress - Washington, D.C.  
National Library of Canada - Ottawa  
Northwest Community College Learning Resource Center - Nome  
Tuzzy Consortium Library - Barrow  
University of Alaska, Anchorage Consortium Library - Anchorage  
University of Alaska, Southeast Library - Juneau  
University of Washington Library - Seattle  
U.S. Fish and Wildlife Service Library - Anchorage  
Valdez Consortium Library - Valdez  
Z.J. Loussac Library - Anchorage

Copies of the final reports may be purchased from the following:

Anchorage Copy Centers:

Clay's Printing - (907) 561-6270

TimeFrame - (907) 562-3822

National Technical Information Service (NTIS) - (703) 487-4650

## FINAL REPORTS

May 1996

### Natural Resource Damage Assessment Studies

\* = new additions to this list.

#### Air/Water 3

Short, J.W. and P.M. Harris. 1996. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill I: Chemical sampling and analysis, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3)*, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay, Alaska.

#### Air/Water 3 (Subtidal 3A)

Short, J.W. and P. Rounds. 1995. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill II: analysis of caged mussels, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3, Subtidal Study Number 3A)*, National Oceanic and Atmospheric Administration, Juneau, Alaska.

#### Archaeology 1

Reger, D.R., J.D. McMahan, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Archaeology Study Number 1)*, Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology, Anchorage, Alaska.

#### Fish/Shellfish 2

Sharr, S., B.G. Bue, S.D. Moffitt, A. Craig, and D.G. Evans. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 2)*, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska.

\*Fish/Shellfish 3

Sharr, S., C.J. Peckham, D.G. Sharp, L. Peltz, J.L. Smith, M.T. Willette, D.G. Evans, and B.G. Bue. 1996. Coded wire tag studies on Prince William Sound salmon, 1989-1991, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 3)*, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Anchorage, Alaska.

Fish/Shellfish 4

Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4, NMFS Component)*, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

Fish/Shellfish 4A

Willette, T.M., G. Carpenter, P. Shields, and S.R. Carlson. 1994. Early marine salmon injury assessment in Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4A)*, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Cordova, Alaska.

Fish/Shellfish 7B and 8B

Swanton, C.O., T.J. Dalton, B.M. Barrett, D. Pengilly, K.R. Brennan, and P.A. Nelson. 1993. Effects of pink salmon (*Oncorhynchus gorbuscha*) escapement level of egg retention, preemergent fry, and adult returns to the Kodiak and Chignik management areas caused by the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 7B and 8B)*, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Alaska.

Fish/Shellfish 18

Haynes, E., T. Rutecki, M. Murphy, and D. Urban. 1995. Impacts of the *Exxon Valdez* oil spill on bottomfish and shellfish in Prince William Sound, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 18)*, U.S. National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

## Fish/shellfish 22

Freese, J.L. and C.E. O'Clair. 1995. Injury to crabs outside Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 22), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

## Fish/Shellfish 27

Schmidt, D.C., K.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. Kind, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. 1993. Sockeye salmon overescapement, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 27), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Soldotna, Alaska.

## Fish/Shellfish 30

DiCostanzo, C. and B.P. Simonson. 1993. Database management, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 30), Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau, Alaska.

## Marine Mammal 1

Dahlheim, M.E. and O. von Ziegesar. 1993. Effects of the *Exxon Valdez* oil spill on the abundance and distribution of humpback whales (*Megaptera novaeangliae*) in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 1), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, Washington.

## Marine Mammal 2

Dahlheim, M.E. and C.O. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 2), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Seattle, Washington.

## Marine Mammal 5 (Restoration Study 73)

Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in Prince William

Sound, Alaska, and adjacent areas following the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 5, Restoration Study Number 73), Alaska Department of Fish and Game, Wildlife Conservation Division, Fairbanks, Alaska.

#### Marine Mammal 6-1

Ballachey, Brenda. 1995. Biomarkers of damage to sea otters in Prince William Sound, Alaska following potential exposure to oil spilled from the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-1), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-5

Bodkin, J.L. and M.S. Udevitz. 1995. An intersection model for estimating sea otter mortality from the *Exxon Valdez* oil spill along the Kenai Peninsula, Alaska, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-5), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-7

DeGange, A.R., D.C. Douglas, D.H. Monson, and C.M. Robbins. 1995. Surveys of sea otters in the Gulf of Alaska in response to the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-7), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-9

Doroff, A.M., and A.R. DeGange. 1995. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the *Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-9), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-12

Monnett, C. and L.M. Rotterman. 1992. Movements of weanling and adult female sea otters in Prince William Sound, Alaska after the *TV Exxon Valdez* oil spill, *Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report* (Marine Mammal Study Number 6-12), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-13

Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of female sea otters

in Prince William Sound, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-13), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-14

Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of sea otters oiled and treated as a result of the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-14), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-15

Monson, D.H. and B. Ballachey. 1995. Age distributions of sea otters found dead in Prince William Sound, Alaska following the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-15), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-18

Rotterman, L.M. and C. Monnett. 1991. Mortality of sea otter weanlings in eastern and western Prince William Sound, Alaska, during the winter of 1990-91, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-18), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Marine Mammal 6-19

Udevitz, M.S., J.L. Bodkin, and D.P. Costa. 1995. Detection of sea otters in boat-based surveys of Prince William Sound, Alaska, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-19), U.S Fish and Wildlife Service, Anchorage, Alaska.

#### Restoration Study 47

Kuwada, M.N., and K. Sundet. 1993. Stream Habitat assessment project: Afognak Island, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 47), Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

#### \*Restoration Study 60A

Sharr, S., C.J. Peckham, D.G. Sharp, J.L. Smith, D.G. Evans, and B.G. Bue. 1995. Coded wire tag studies on Prince William Sound salmon, 1992, *Exxon Valdez* Oil Spill

State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 60A), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Anchorage, Alaska.

#### Restoration Study 60C

Sharr, S., J.E. Seeb, B.G. Bue, A. Craig, and G.D. Miller. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 60C), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Anchorage, Alaska.

#### Restoration Study 102

Highsmith, R.C., M.S. Stekoll, P.G. van Tamelen, A.J. Hooten, L. Deysher, L. McDonald, D. Strickland, and W.P. Erickson. 1993. Herring Bay experimental and monitoring studies, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 102), Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

#### Restoration Study 106

McCarron, S. and A.G. Hoffman. 1993. Technical support study for the restoration of Dolly Varden and cutthroat trout populations in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 106), Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Alaska.

#### Subtidal 1A

O'Clair, C.E., J.W. Short, and S.D. Rice. 1996. Petroleum hydrocarbon-induced injury to subtidal marine sediment resources, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 1A), National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Auke Bay Laboratory, Juneau, Alaska.

#### Subtidal 1B

Braddock, J.F., B.T. Rasley, T.R. Yeager, J.E. Lindstrom, and E.J. Brown. 1992. Hydrocarbon mineralization potentials and microbial populations in marine sediments following the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 1B), University of Alaska



Fairbanks, Fairbanks, Alaska.

#### Subtidal 2B/Air Water 2

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\* = new additions to this list.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
AD	Administrative Director's Office	ALL	No report required.		
ARC1	Archaeological Survey	ADNR	Final report accepted by OSPIC; available to public.	<p>Reger, D.R., J.D. McMahon, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations.</p> <p>Four archaeological sites from which adequate collections and radiocarbon samples were obtained were sampled for sediments to test for presence of oil. Two sediment samples (Shuyak Island and Chenega Island) tested positive for oil. None of the sites yielded radiocarbon dates which appear to be significantly skewed from the expected age range. The results of the study show that reasonable dates can be obtained from the test sites despite presence of oil remains on the beach surface or in the case of two sites from within the cultural deposits. The results of the study are applicable to the sites studied and useful for management decisions based on broad general conclusions.</p>	
AW1	Surface Oil Maps	ADEC	Project terminated. DEC/NOAA overflight charts stored in Alaska Archives.	DEC/NOAA overflight charts stored in Alaska Archives.	
B02	Boat Surveys	DOI	Final report accepted by Chief Scientist. Not yet at OSPIC.	<p>Klosiewski, S.P. and K.K. Laing. 1994. Marine bird populations of Prince William Sound, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Populations of 9 species or species groups (black oystercatcher, pigeon guillemot, cormorants, harlequin duck, loons, scoters, newgull, arctic tern, northwestern crow) declined more than expected in the oiled zone of Prince William Sound suggesting an oil effect. Most injured species were ecologically tied to intertidal or nearshore areas.</p>	Continued as 93045 and 94159.

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B03	Murres Damage Assessment Closeout	DOI	Final report accepted by Chief Scientist. Not yet at OSPIC.	<p>Nysewander, D.R., C.H. Dippel, G.U. Byrd and E.P. Knudtson. 1993. Effects of the T/V Exxon Valdez oil spill on murres: A perspective from observations at breeding colonies. U.S. Fish and Wildlife Service. Homer.</p> <p>Numbers were reduced, nesting was delayed, and productivity rates were far below normal at major colonies within the spill trajectory. Reproductive success improved slightly in 1991.</p>	Related to R11, 93022 and 94039.
B04	Eagles Damage Assessment Closeout	DOI	Final report accepted by OSPIC; copies currently being made.	<p>Bauman, T.D., P.F. Schempf, and J.A. Bernatowicz. 1994. Effects of the Exxon Valdez oil spill on bald eagles. U.S. Fish and Wildlife Service. Anchorage.</p> <p>Reproductive success of Prince William Sound bald eagles was significantly impaired in 1989, and nest failures were correlated with the distribution of crude oil on beaches. Although estimated direct mortality throughout the spill area was relatively large (about 300 - 900 eagles), no change in the population could be detected due to wide variation in population counts. The Prince William Sound eagle population was expected to return to its prespill level by 1993.</p>	
B06	Marbled Murrelets Damage Assessment Closeout	DOI	Final report accepted by Chief Scientist. Not yet at OSPIC.	<p>Kuletz, K.J. 1994. Marbled murrelet abundance and breeding activity at Naked Island, Prince William Sound, and Kachemak Bay, Alaska, before and after the Exxon Valdez oil spill. U.S. Fish and Wildlife Service, Anchorage.</p> <p>The marbled murrelet population at a site within the path of the oil (Naked Island) was lower in 1989 than in prespill years, but returned to normal in 1990. Murrelet numbers in Kachemak Bay where oiling was minimal did not change following the spill.</p>	Related to R15, 93051B and 94102.

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B07	Storm Petrels Damage Assessment Closeout	DOI	Final report accepted by Chief Scientist. Not yet at OSPIC.	<p>Nishimoto, M. and G.U. Byrd. 1994. Effects of oil from the T/V <i>Exxon Valdez</i> spill on fork-tailed storm petrels breeding in the Barren Islands, Alaska. U.S. Fish and Wildlife Service. Homer.</p> <p>At the largest storm-petrel colony within the spill trajectory (Barren Islands), no evidence of adverse effects to breeding petrels was found. Burrow occupancy rates were above average, nesting chronology was not delayed, and productivity was normal.</p>	
B08	Kittiwakes Damage Assessment Closeout	DOI	Draft report peer reviewed; returned to PI for revision March 22, 1996.	<p>Irons, D.B. 1994. Effects of the <i>Exxon Valdez</i> oil spill on black-legged kittiwake colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The number of breeding pairs did not decline at colonies in the oiled area of Prince William Sound but reproductive success in 1989 was less than expected, apparently due to low hatching success. Reproductive success did not recover by 1992 but whether the decline was due to the spill is unknown.</p>	TS1
B09	Pigeon Guillemots Damage Assessment Closeout	DOI	Final report accepted by OSPIC; copies currently being made.	<p>Oakley, K.L. and K.J. Kuletz. 1994. Population, reproduction and foraging of pigeon guillemots at Naked Island, Alaska, before and after the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Anchorage.</p> <p>The population at a major breeding site within the spill trajectory (Naked Island) declined by 50% compared to 1972-1973 levels. A long-term decline within Prince William Sound predated the spill and, therefore, the decline at naked Island could not be attributed totally to the spill. Reproduction was largely normal following the spill.</p>	93034 and 94173

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B11	Harlequin Ducks Damage Assessment Closeout	ADFG	Draft report peer reviewed; returned to PI for revision February 13, 1996.	<p>New statistical analysis of bile results indicates elevated hydrocarbon concentrations in western Prince William Sound and Kodiak birds, but also in eastern Prince William Sound birds, compared to Juneau samples. Concentrations correlate positively with proximity to the spill origin.</p>	Project conducted in conjunction with R71 and continued as 93033. Also related to B2, CH1B, TS1, R103, and 93036.
B12	Shorebirds Damage Assessment Closeout	DOI	The results of this project will be presented in two reports: (1) Final report on migrant shorebirds accepted by Chief Scientist. Not yet at OSPIC. (2) Final report on black oystercatchers accepted by OSPIC; copies currently being made.	<p>(1) Martin, P.D. 1993. Effects of the <i>Exxon Valdez</i> oil spill on migrant shorebirds using rocky intertidal habitats of Prince William Sound, Alaska, during Spring 1989. U.S. Fish and Wildlife Service, Anchorage.</p> <p>(2) Andres, B.A. 1994. The effects of the <i>Exxon Valdez</i> oil spill on black oystercatchers breeding in Prince William Sound, Alaska. U.S. Fish and Wildlife Service. Anchorage.</p> <p>(1) Spring migrant shorebirds (surfbirds and black turnstones) escaped impacts because shorelines used by these species (particularly around Montague Island) were largely unoiled. (2) Black oystercatcher breeding was disrupted and hatching success reduced. Chicks raised on oiled beaches grew more slowly than chicks raised on unoiled beaches, perhaps due to ingestion of contaminated food.</p>	Related to R17, R103 and 93035.

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CH1A	Coastal Habitat Damage Assessment	USFS	Final report accepted by OSPIC; copies currently being made.	Highsmith, R.C., et al. Comprehensive assessment of coastal habitat. School of Fisheries and Ocean Sciences, UAF.  Serious and long-term lasting effects on intertidal algae. Recovery occurring but slow to none in upper intertidal habitat. Full recovery expected. Intertidal invertebrates indicate negative effects from spill. Intertidal fish findings were inconclusive.	Continued as R102, 93039 and 94086.
CH1B	Hydrocarbons in Mussels	NOAA	Final report submitted to OSPIC; undergoing format review.	Babcock, M. NOAA. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites in PWS and the Gulf of Alaska.  <i>Exxon Valdez</i> oil is located in several sites. Reductions in hydrocarbons are seen at several sites in PWS over 1989.	R103
FS01	Spawning Area Injury	ADFG	REPORT OVERDUE. Was to be submitted to Chief Scientist by August 15, 1995. [Note: Report will present findings from both FS01 and R60B.]	Fried, S. and B. Bue  Documented oil contamination of Prince William Sound pink salmon spawning area. Improved current and historic pink salmon escapement estimates which are necessary for accurate estimates of total wild returns. For preliminary results, see 1989, 1990 and 1991 NRDA Draft Status Reports.	Project conducted in conjunction with R60B.
FS02	Pre-emergent Fry	ADFG	Final report accepted by OSPIC; available to public.	Sharr, S, B. Bue, et al. Injury to salmon eggs and pre-emergent fry in PWS. ADF&G.  Measured higher embryo mortalities in oil-contaminated streams than in unoiled streams.	Project conducted in conjunction with R60C; continued as 93002 and 94191.

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FS03	Coded-Wire Tags Damage Assessment	ADFG	Final report accepted by OSPIC; available to public.	Sharr, S., et al. Coded wire tag studies on PWS salmon, 1989-91.  Unable to detect significant differences in survival to adults from fry emerging from oiled and control streams. Also unable to detect significant difference in survival of hatchery fish reared in oiled versus unoiled areas of Prince William Sound.	Project conducted in conjunction with R60A; continued as 93067, 93068, 94185, and 94320B.
FS04A	Early Marine Salmon Damage Assessment	ADFG	Final report accepted by OSPIC; available to public.	Willette, M., et al. Early marine salmon injury assessment in PWS. ADF&G  Detected reduced growth and survival of fry-rearing in oiled areas in 1989. No significant differences in growth and survival between oiled and nonoiled areas in subsequent years. Rate of adult returns to unoiled hatcheries twice that of oiled hatcheries in 1990.	Related to most projects in 94320 (PWS System Investigation). FS1, FS2, FS3, FS4A, and FS4B measured oil damages to specific life stages. FS28 incorporated their results into a model to estimate population level damages.

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FS04B	Juvenile Pinks	NOAA	Final report accepted by OSPIC; available to public.	<p>Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M.V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats. NOAA, NMFS, Auke Bay Lab, Juneau, AK.</p> <p>Documented exposure and contamination of juvenile salmon in Prince William Sound. Contamination was associated with reduced growth. Ingestion of oil or oiled prey was route of contamination.</p>	FS4A, AW3, and ST3A.
FS05	Dolly Varden Damage Assessment	ADFG	Final report accepted by Chief Scientist. Not yet at OSPIC. Report includes data from R090.	<p>Hepler, K.R., P. A. Hansen, D.R. Bernard. Impact of oil spilled from the <i>Exxon Valdez</i> on survival and growth of Dolly Varden and cutthroat trout in PWS, AK. ADF&amp;G.</p> <p>Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.</p>	Combined with R90.

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FS11	Herring Injury	ADFG	Redraft of report submitted to Chief Scientist March 14, 1995. [NOTE: Report will include nine articles prepared for the Canadian Journal of Fisheries and Aquatic Science and will be included in the proceedings of the EVOS symposium.]	<p>Brown, E. D., et al. Injury to Prince William Sound Following the <i>Exxon Valdez</i> Oil Spill.</p> <p>Adult herring migrating to the spawning grounds in 1989 were exposed to oil. Exposure to oil continued throughout 1989 and into 1990. Internal tissues were damaged but the short- and long-term effects are speculative. There may have been a short-term effect which inhibited egg deposition and a long-term reproductive impairment (reduced survival of offspring). Eggs were deposited in oiled areas in 1989. Larvae hatched from exposed embryos suffered reduced survival.</p>	Similar to 94166 (Herring Spawn Deposition). Also related to 94165 and 94320.
FS13	Effects of Hydrocarbons on Bivalves	ADFG	Redraft of report submitted to Chief Scientist February 14, 1996.		Clams are important prey for ducks, sea otters, river otters, and bears. This study is related to studies of these species and to 93017.

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<b><u>Project No.</u></b>	<b><u>Project Title</u></b>	<b><u>Lead Agency</u></b>	<b><u>Report Status</u></b>	<b><u>References and Results</u></b>	<b><u>Related Projects</u></b>
FS27	Sockeye Salmon Overescapement	ADFG	Final report accepted by OSPIC; available to public.	<p>Schmidt, D.C., T.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. King, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton. 1993. Sockeye salmon overescapement, <i>Exxon Valdez</i> Oil Spill State/Federal Natural Resource Damage Assessment Final Report, ADFG, Commercial Fisheries Management and Development Division, Soldotna, AK.</p> <p>Approximately ten to fifteenfold reduction in Kenai River smolt when compared to brood year 1987. Reduced smolt production from Akalura and Red Lakes, Kodiak Island. Reduced harvests for the Kenai are forecast for 1994 with returns below escapement levels possible for 1995 and 1996. Minimal harvests of Kenai River sockeye salmon are likely. Reduced harvests are forecast for Red and Akalura Lakes for 1994 through 1996.</p>	Continued as 93002 and 94258. R53 acquired new information to facilitate management of anticipated reduced future runs. R113 examined potential for hatchery-reared fry in Red Lake, but forecasted returns make the project unfeasible.
FS28	Run Reconstruction	ADFG	Final report accepted by Chief Scientist January 26, 1996. Not yet at OSPIC.	<p>Geiger, H., et al. Run reconstruction and life-history model.</p> <p>Estimated losses to adult populations from oil damages to early life stages at 2 to 3 million in 1990, and 40 to 70 thousand in 1991. Projected losses of 100 to 200 thousand adults in 1993 and 1994.</p>	Through this project, results from FS1, FS2, FS3, FS4A and FS4B were incorporated into a model to estimate population level damage.

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FS30	Database Management	ADFG	Final report accepted by OSPIC; available to public.	<p>DiCostanzo, C. and B.P. Simonson. 1993. Database management, <i>Exxon Valdez</i> Oil Spill Final Report, ADF&amp;G, Division of Commercial Fisheries, Juneau, AK.</p> <p>Software was written to provide access to fish harvest database using the ADFG commercial fisheries Wide-Area Network (WAN). Procedures were implemented to provide reports in numerous database, spreadsheet, and statistical formats. Documentation and guidelines for using the harvest database were completed. WAN capability is now available between Juneau, Cordova, Anchorage, Kodiak, Soldotna, and Homer.</p>	This database provides a repository for all NRDA and restoration projects information.
MM1	Humpback Whales Damage Assessment	NOAA	Final report accepted by OSPIC; available to public.	<p>Dalheim, M. and O. von Ziegesar. 1993. Effects of the <i>Exxon Valdez</i> oil spill on the abundance and distribution of humpback whales (<i>megaptera novaeangliae</i>) in Prince William Sound. NMFS, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, photographic analysis of PWS humpbacks revealed 59 whales identified in 119 encounters. In 1990, 66 whales were identified in 201 encounters. The number of humpbacks encountered per day was less in 1989 and 1990 than in 1988. Because of the difference in survey effort before and after the spill, it is difficult to determine whether there was a difference in the number of humpbacks using PWS. Regarding distribution of whales in PWS: In 1988 and 1990, more whales used the Lower Knight Island Passage than in 1989. Increased vessel and aircraft traffic and distribution of prey may have been contributing factors for the temporary redistribution of whales during 1989. Despite considerable research effort, only one PWS humpback was documented to move from PWS to southeastern Alaska during 1989.</p>	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
MM2	Killer Whales Damage Assessment	NOAA	Final report accepted by OSPIC; available to public February 1996.	<p>Dalheim, M. and C. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound, Kodiak Archipelago, and Southeast Alaska. National Marine Mammal Laboratory, Seattle, WA and North Gulf Oceanic Society, Homer, AK.</p> <p>In 1989, 8 resident (143 killer whales) and 4 transient pods (34 whales) were documented in 89 encounters. In 1990, 9 resident pods (148 whales) and 4 transient pods (30 whales) were identified in 80 encounters. During 1991, 7 resident pods (105 whales) and 2 transient pods (14 whales) were identified in 54 encounters. Despite increased effort over these 3 years, the number of encounters appears to be decreasing. The missing animals were not seen near Kodiak Island or southeast Alaska. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the 1989-1991 period. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, 4.3% in 1991, and zero in 1992. Killer whale annual mortality rates are usually less than 2%.</p>	

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MM6 (1of3)	Sea Otter Damage Assessment	DOI	The results of this project will be presented in 19 reports -- 15 reports have been accepted by the Chief Scientist (10 are available to the public at OSPIC); 4 reports have been peer reviewed and returned to the PIs for revision.	(1) Ballachey, B.E. Biomarkers of damage to sea otters in PWS following potential exposure to oil spilled from the T/V <i>Exxon Valdez</i> . [Final report accepted by OPSIC; available to public] (2) Ballachey, B.E. and D.M. Mulcahy. Hydrocarbon residues in tissues of sea otters ( <i>Enhydra lutris</i> ) collected from southeast Alaska. [Draft report peer reviewed; returned to PI for revision March 25, 1996.] (3) Ballachey, B.E. and D. M. Mulcahy. Hydrocarbons in hair, livers and intestines of sea otters ( <i>Enhydra lutris</i> ) found dead along the path of the <i>Exxon Valdez</i> oil spill [Draft report peer reviewed; returned to PI for revision March 25, 1996.] (4) Bodkin, J.L., D.M. Mulcahy and C. Lensink. Age-specific reproduction in female sea otters ( <i>Enhydra lutris</i> ) from southcentral Alaska: analysis of reproductive tracts. [Report approved by OSPIC; copies being made] (5) Bodkin, J.L. and M.S. Udevitz. An intersection model for estimating sea otter mortality from the <i>Exxon Valdez</i> oil spill along the Kenai Peninsula. [Final report accepted by OSPIC; available to public]	Continued as 93043.

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MM6(2of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	<p>(6) Burn, D.M. Boat-based population surveys of sea otters (<i>Enhydra lutris</i>) in PWS in response to the <i>Exxon Valdez</i> oil spill. [Report accepted by Chief Scientist; not yet at OSPIC.]</p> <p>(7) DeGange, A.R., D.C. Douglas, D.H. Monson and C. Robbins. Surveys of sea otters in the Gulf of Alaska in response to the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public.]</p> <p>(8) Doroff, A.M. and J.L. Bodkin. Sea otter foraging behavior and hydrocarbon levels in prey following the <i>Exxon Valdez</i> oil spill in PWS, Alaska [Draft report peer reviewed; returned to PI for revision March 25, 1996]</p> <p>(9) Doroff, A.M. and A.R. DeGange. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public.]</p> <p>(10) Lipscomb, T.P., R.K. Harris, R.B. Moeller, J.M. Fletcher, R.J. Haebler and B.E. Ballachey. Histopathologic lesions associated with crude oil exposure in sea otters. [Report approved by OSPIC; copies being made]</p> <p>(11) Lipscomb, T. P., R.K. Harris, A.H. Rebar, B.E. Ballachey and R.J. Haebler. Pathological studies of sea otters. [Report approved by OSPIC; copies being made]</p> <p>(12) Monnett, C. and L.M. Rotterman. Movements of weanling and adult female sea otters in PWS after the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public.]</p>	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
MM6(3of3)	Sea Otter Damage Assessment	DOI	See MM6(1of3).	<p>(13) Monnett, C. and L.M. Rotterman. Mortality and reproduction of female sea otters in PWS. [Final report accepted by OSPIC; available to public.]</p> <p>(14) Monnett, C. and L.M. Rotterman. Mortality and reproduction of sea otters oiled and treated as a result of EVOS. [Final report accepted by OSPIC; available to public.]</p> <p>(15) Monson, D.H. and B.E. Ballachey. Age distributions and sex ratios of sea otters found dead in PWS following the <i>Exxon Valdez</i> oil spill. [Final report accepted by OSPIC; available to public]</p> <p>(16) Mulcahy, D.M. and B.E. Ballachey. Hydrocarbon residues in tissues of sea otters (<i>Enhydra lutris</i>) collected following the <i>Exxon Valdez</i> oil spill. [Draft report peer reviewed; returned to PI for revision March 25, 1996]</p> <p>(17) Rebar, A.H., B.E. Ballachey, D.L. Bruden and K.A. Kloecker. Hematology and clinical chemistry of sea otters captured in PWS following the <i>Exxon Valdez</i> oil spill. [Report approved by OSPIC; copies being made]</p> <p>(18) Rotterman, L.M. and C. Monnett. Mortality of sea otter weanlings in eastern and western PWS during the winter of 1990-91. [Final report accepted by OSPIC; available to public.]</p> <p>(19) Udevitz, M.S., J.L. Bodkin and D.P. Costa. Detection of sea otters in boat based surveys in PWS. [Final report accepted by OSPIC; available to public.]</p>	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
R011	Murre Recovery Monitoring	DOI	Final report accepted by OSPIC; copies currently being made.	<p>Dragoo, D.E., G.V. Byrd, D.G. Roseneau, D.A. Dewhurst, J.A. Cooper, and J.H. McCarthy. 1994. Population levels and reproductive performance of murres based on observations at breeding colonies four years after the T/V <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service. Homer</p> <p>Numbers of murres breeding at major colonies within the trajectory remained lower in 1992. Breeding chronology was delayed. Productivity at the Barren Islands was higher than in other postspill years, but still lower than normal. Productivity at Puale Bay was normal.</p>	Continued as 93022 and 94039. Also related to B3.
R015	Marbled Murrelet Restoration Study	DOI	<p>The results of this project will be presented in two reports:</p> <p>(1) Final report accepted by Chief Scientist. Not yet at OSPIC.</p> <p>(2) Final report accepted by Chief Scientist. Not yet at OSPIC.</p>	<p>(1) Kuletz, K.J., D.K. Marks, and N.L. Naslund. 1994. At-sea abundance and distribution of marbled murrelets in the Naked Island area, Prince William Sound, Alaska, in Summer, 1991 and 1992. U.S. Fish and Wildlife Service, Anchorage</p> <p>(2) Kuletz, K.J., N.L. Naslund, and S.K. Marks. 1994. Identification of marbled murrelet nesting habitat in the <i>Exxon Valdez</i> oil spill zone. U.S. Fish and Wildlife Service, Anchorage.</p> <p>Using ground search techniques, 10 tree nests were found on Naked Island in 1991 and 1992. Nest trees were in stands of high volume and size class trees, and upland activity of murrelets throughout Prince William Sound was highest in such stands.</p>	Continued as part of 93051 and 94505 (closeout).

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R047	Stream Habitat Assessment	ADFG	Final report accepted by OSPIC; available to public.	<p>Kuwada, M. and K. Sundet. 1993. Stream Habitat Assessment Project: Afognak Island. ADF&amp;G.</p> <p>About 250 km of shoreline and 260 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on Afognak Island, resulting in discovery of 167 anadromous streams totaling about 56 km. Stream habitat parameters and upper extents of anadromous distribution were documented, and streams were mapped by GPS.</p>	Continued as part of 93051 and 94505 (closeout). Supported evaluation of land for habitat protection.
R053	Kenai River Sockeye Salmon Restoration	ADFG	Final report accepted by OSPIC; available to public.	<p>Tarbox, K., et al. Kenai River sockeye salmon restoration.</p> <p>Successful collection of baseline and fishery samples for genetic stock identification. Unsuccessful in choosing new adult in-river hydroacoustic equipment. Successful hydroacoustic enumeration of returning adult salmon in Upper Cook Inlet.</p>	R59 analyzed genetic samples collected by this project.
R059	Genetic Stock Identification	ADFG	Annual report accepted by OSPIC; available to public.	<p>Seeb, J. and L. Seeb. Assessment of genetic stock structure of salmonids. ADF&amp;G. June 1993.</p> <p>Genetic data were collected during 1992 from spawning populations contributing to mixed-stock harvests of sockeye salmon in Cook Inlet. These data can be used to estimate the presence of Kenai River stocks in mixed-stock areas of Upper Cook Inlet.</p>	R53 collected spawning samples.

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R060A/B	Prince William Sound Pink Salmon	ADFG	R060A: Final report submitted to OSPIC; available to public. R060B: Findings will be presented in report being prepared under Project FS01.	R060A: Sharr, S., et al. Coded wire tag studies on PWS salmon, 1992. R060B: See FS01.  R060A: The CWT program helped reduce the commercial harvest on damaged pink salmon populations by providing fishery managers with timely inseason fishery stock composition estimates. R060B: The escapement project provided improved pink salmon escapement information which was essential for the precise fisheries management required to protect damaged wild stocks.	Continued as 93067, 94184 (report preparation) and 94320B. Also related to R60C, which monitors and investigates mechanisms for oil damage to early life stages of pink salmon populations.
R060C	Pink Salmon Egg/Fry	ADFG, NOAA	The results of this project will be presented in two reports: (1) ADFG report accepted by OSPIC; available to public. (2) NOAA findings included in annual report prepared under 94191. See 94191 for status.	(1) Sharr, Samuel and C. Peckham. 1994. Coded wire tag studies on Prince William Sound salmon, 1992. ADFG (2) See 94191.  (1) Persistence of elevated mortalities among embryos in oiled streams versus those in unoiled streams suggests genetic damage. (2) Oil exposures completed for 1992 and 1993 brood years. All 1992 brood pinks died from bacterial kidney disease by June 1994. Spawning of 1993 brood expected in September 1995, with survival of progeny to be determined in early 1996.	Continued as 93003 and 94191. Other related projects include B11, CH1B, R60AB, R103, and 93036.

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R071	Harlequin Duck Restoration and Monitoring	ADFG	Draft final report submitted to Chief Scientist April 15, 1996.	<p>Rothe, T. Breeding ecology of harlequin ducks in PWS, Alaska. ADF&amp;G.</p> <p>Crowley, D.W. 1993. Breeding habitat of harlequin ducks in PWS, AK. MS Thesis. Oregon State University, Corvallis, OR.</p> <p>Comparative harlequin data in eastern Prince William Sound for B11. 1991-1992 harlequin production in eastern Prince William Sound similar to prespill. Techniques devised to capture and track harlequins. Breeding stream parameters and nest sites described. Additional oiled mussel beds identified. Description and analysis of harlequin breeding stream habitat in eastern PWS produced in an M.S. thesis, Oregon State University (Crowley 1994).</p>	B11 corroborated harlequin status in Prince William Sound. R103 documented continued oiled prey. B2 corroborates harlequin status in PWS.
R073	Harbor Seals	ADFG	Final report accepted by OSPIC; available to public.	<p>Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in PWS and adjacent areas following EVOS. ADF&amp;G, Wildlife Conservation Division, Fairbanks, AK.</p> <p>Harbor seals continued to use heavily oiled haulouts even when unoiled sites were available nearby. They were observed to give birth and care for their pups on these sites. The pelage of both pups and adults became oiled when they used these sites or contacted oil in the water. However, the pelage became cleaner with time if they did not continue to use oiled sites. Many carcasses recovered were either stillborn or died shortly after birth. Observations suggest that stress and/or toxic effects of oil resulted in abortions, premature births, and increased mortalities in heavily oiled areas. Four book chapters prepared and in press detailing results of MM5 study.</p>	Started in 1989 as MM5. Continued as 93046 and 94064.

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R090	Dolly Varden Char Monitoring	ADFG	Report being prepared under Project FS05.	See FS05.  Two populations of Dolly Varden and cutthroat trout emigrated from lakes into the wake of the spill. Growth from 1989-1990 was 24% and 22% slower for recaptured subadult and adult Dolly Varden and 36% to 43% slower for subadult and adult populations of cutthroat trout in populations associated with the oil. This difference persisted through 1991 for cutthroat trout but not for Dolly Varden. Chronic starvation and direct exposure to petrogenic hydrocarbons were hypothesized as effects leading to reduced growth and accelerated mortality of both Dolly Varden and cutthroat trout.	Project combined with FS05. R90 and R106 provide information on populations of Dolly Varden and cutthroat trout for 94320 (Ecosystem Study Plan).
R092	GIS Mapping and Analysis: Restoration	ADNR	No report required.	Provided mapping and database support for restoration projects. Developed timber harvest database and land status and parcel maps for imminent threat parcels. Contributed to a 3-volume data dictionary produced for the Trustee Council by the Nature Conservancy.	Supported numerous restoration projects.

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R102	Herring Bay Experimental and Monitoring Study	ADFG	Final report accepted by OSPIC; available to public.	Highsmith, R.C., M.S/ Stekoll, A.J.Hooten, P. van Tamelen, L. Deysher, L. McDonald, D. Strickland and W.P. Erickson. 1993. Herring Bay experimental and monitoring studies. School of Fisheries and Ocean Sciences, UAF.  Cover of the dominant intertidal alga, <i>Fucus gardneri</i> , was reduced at oiled/cleaned sites. <i>Fucus</i> recruitment was poor in the mid- to upper intertidal, probably due to lack of shelter from desiccation and heating by adult plants. Limpet densities continued to be lower in the upper intertidal. Recovery appeared to be occurring in the lower intertidal zone in 1990-1991 and in the upper intertidal in 1993. Results have been incorporated into an interaction web to elucidate potential oil spill effects on community dynamics.	Continued as 93039 and 94086.

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R103	Oiled Mussels	ADFG, NOAA, DOI	The results of this project will be presented in four reports: (1) NOAA annual accepted by OSPIC; available to public. (2) DOI/FWS findings being incorporated into report on 93035. (3) ADFG final report submitted to OSPIC; undergoing format review. (4) DOI/NPS final report accepted by Chief Scientist. Not yet at OSPIC.	(1) Babcock, M., P.M.Rounds, C. Brodersen and S. Rice. 1993. Recovery monitoring and restoration of intertidal oiled mussel beds in Prince William Sound impacted by the <i>Exxon Valdez</i> oil spill. NOAA, NMFS, Auke Bay Laboratory, Juneau, Alaska. (2) See 93035. (3) Faro and Bowyer. River otter component. (4) Irvine, G. 1993 Geographic extent and recovery monitoring of intertidal oil in mussel beds in Gulf of Alaska effected by the <i>Exxon Valdez</i> oil spill.  (1) Identified 27 mussel beds within PWS with total petroleum hydrocarbons greater than 10,000 mg/g wet weight. Site manipulation was conducted at three heavily oiled mussel beds. (2) Black oystercatcher chicks raised on oiled sites grew more slowly than chicks raised on unoiled sites. (3) Differences in levels of blood haptoglobin and Interleukin-6 ir, previously found to be elevated in river otters inhabiting oiled compared to nonoiled areas in PWS, were not observed in summer 1992. River otters from oiled areas continued to regain body size from levels noted in 1990. Suggests that river otters may be recovering from chronic effects that were observed in 1990 and 1991.	Continued as 93036, 94090, and 95090.
R104A	Site Stewardship	DOI	Final report accepted by OSPIC; copies currently being made.	Corbett, D.G. 1994. Development of the Alaska Heritage Stewardship Program for protection of cultural resources at increased risk due to the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage, AK.  Increased public knowledge of archaeological sites following the spill led to increased vandalism. A stewardship program to train local residents to protect cultural resources was developed.	93006, 94007

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R105	Instream Survey Restoration Implementation Planning	ADFG, USFS	The results of this project will be presented in two reports (report writing funded under 93063): (1) Final report approved to OSPIC; copies being made. (2) USFS report accepted by Chief Scientist. Not yet at OSPIC.	(1) Willette, M. Survey and evaluation of instream habitat and stock restoration techniques for wild pink and chum salmon. (2) Weidemeyer, K. Survey and evaluation of instream habitat and stock restoration techniques for anadromous fish.  A number of sites were reviewed, evaluated, and ranked for possible instream restoration efforts. A number of efforts have subsequently been implemented.	Continued as 93063.
R106	Dolly Varden Restoration	ADFG	Final report accepted by OSPIC; available to public.	McCarron, S. and A.G. Hoffman, 1993. Technical support study for the restoration of Dolly Varden and cutthroat trout populations in PWS. ADF&G, Division of Sport Fish, Anchorage, AK.  The nature and extent of injury to Dolly Varden and cutthroat trout was documented in FS5. The goal of R106 was to provide information for developing a management plan to protect impacted stocks, while allowing for continued recreational fishing for sport anglers where stocks could support fisheries. Sixty-one streams were surveyed to provide this information.	FS5 and 94139.

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R113	Red Lake Sockeye Salmon Restoration	ADFG	Project canceled based on findings of FS27.	Red Lake does not need restoration effort. This project was funded in anticipation of poorer returns of sockeye salmon to Red Lake than actually occurred.	Related to FS27. NEPA compliance for Red Lake restoration project was funded through 93030, which was canceled when the project was dropped.
RT	Restoration Team	ALL	No report required.		
ST1A	Subtidal Sediments	NOAA	Final report approved by OSPIC; available to public	O'Clair, et al. NOAA. Petroleum hydrocarbon induced injury to subtidal sediment resources.  Subtidal sediments have been found to be contaminated at no fewer than 15 sites within Prince William Sound by June 1990. Contamination had reached at least 20 meters at some sites. Evidence of hydrocarbon movement downslope into subtidal sediments was detected by 1991.	Continued as 93047 and 94285. Other related projects include ST1B.

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ST1B	Subtidal Microbial	ADEC	Final report accepted by OSPIC; available to public.	<p>Braddock, Joan F., B. Rasley, T. Yeager, J. Lindstrom, D. Brown. Hydrocarbon mineralization potentials and microbial populations in marine sediments following the <i>Exxon Valdez</i> oil spill. DEC</p> <p>The numbers and activity of oil-degrading microorganisms were measured in sediments periodically for two years after the oil spill. Populations of oil-degrading microorganisms were significantly higher in sediments collected at oiled sites relative to reference sites. This information is useful in establishing the extent of contamination of the oil with time and also provides evidence that biodegradation is occurring naturally in Prince William Sound.</p>	93047
ST2A	Shallow Benthic	ADFG	No report required. (Data/findings incorporated into report on 93047.)	<p>See 93047.</p> <p>At oiled sites there was a decrease in some subtidal organisms relative to unoiled sites. Partial recovery observed in 1991.</p>	Continued as 93047 and 94285. Other related projects include B11, CH1A, R103, and TM3.
ST2B	Deep Water Benthic	ADFG	Final report accepted by OSPIC; available to public.	<p>Feder, H. 1995. Injury to deep benthos. ADFG</p> <p>No indication of oil-related damage to deep benthic environment. No oil fractions appear related to unusual benthic faunal composition. Differences between stations within and outside of oil trajectory were mainly related to sediment differences. No oil effects demonstrated.</p>	CH1A, ST1B, ST2A, ST4, ST5, ST6, ST7, ST8, and TS1.

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<b><u>Project No.</u></b>	<b><u>Project Title</u></b>	<b><u>Lead Agency</u></b>	<b><u>Report Status</u></b>	<b><u>References and Results</u></b>	<b><u>Related Projects</u></b>
ST3A	Caged Mussels Damage Assessment	NOAA	The results of this project will be presented in two reports: (1) Final report accepted by Chief Scientist. Not yet at OSPIC. (2) Final report accepted by OSPIC; available to public.	(1) Petroleum hydrocarbons in near surface seawater of PWS: chemical sampling and analysis. (2) Petroleum hydrocarbons in near surface seawater of PWS: analysis of caged mussels.  Mussels transplanted along spill trajectory accumulated particulated oil at concentrations that decreased with depth, elapsed time, and distance from heavily oiled beaches. In 1990 and 1991, low concentrations of polynuclear aromatic hydrocarbons were sporadically detected at locations adjacent to heavily oiled beaches. Petroleum hydrocarbons were detected only sporadically in mussels deployed in locations outside Prince William Sound in 1989.	ST3B
ST3B	Sediment Traps Damage Assessment	ADEC	Final report accepted by OSPIC; available to public.	Sale, David M., J. Gibeaut, J. Short. Nearshore subtidal transport of hydrocarbons and sediments following the <i>Exxon Valdez</i> oil spill. ADEC  The subtidal sediment trap study demonstrated that oiled particulate matter derived from oil-impacted beaches in Prince William Sound contaminated adjacent subtidal sediments. The study further showed that the transfer rate of oil from beach to subtidal sediment was highest the year following the spill, and declined steadily thereafter.	ST3A and ST4

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# Exxon Valdez Oil Spill Project Status Summary

## 1992 Work Plan

Quarter Ending March 31, 1996

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST4	Fate and Toxicity Damage Assessment	NOAA	Report submitted to OSPIC; undergoing final formatting review.	<p>Fate and toxicity of spilled oil from the <i>Exxon Valdez</i>. 1994.</p> <p>Results indicate that some toxicity was still associated in 1990 and 1991 with sediments from lower intertidal zones of heavily oiled sites. The fate of <i>Exxon Valdez</i> oil will include transformation of most constituents (through biodegradation and photooxidation) mainly into carbon dioxide and water, although some constituents may persist indefinitely.</p>	AW4, ST1, ST2, ST3A, ST3B, ST7, TS1 and response studies.
ST5	Shrimp	ADFG	Final report accepted by OSPIC; available to public.	<p>Trowbridge, C. 1992. Injury to Prince William Sound spot shrimp. ADF&amp;G, Commercial Fisheries Management and Development Division, Anchorage, AK.</p> <p>Hydrocarbon analyses did not detect oil contamination with sampled spot shrimp. Shrimp collected in unoiled areas had more inflammatory gill lesions than did shrimp from the oiled area. These results indicate that oil contamination had little or no effect on spot shrimp.</p>	
ST6	Rockfish Damage Assessment	ADFG	Final report accepted by OSPIC; available to public.	<p>Hoffman, A. Injury to demersal rockfish and shallow reef habitats in PWS, 1989-91.</p> <p>Oil was determined to be the cause of death for a small number of demersal rockfish in Prince William Sound. Dead and dying rockfish were reported from the spill area. Of the five fish that were fresh enough to be necropsied, exposure to crude oil was found to be the cause of death. These results prompted additional testing for hydrocarbons in live fish. These tests showed at least 11 of 36 rockfish tested from oiled sites had been exposed to oil within 2 weeks prior to testing. None of the 13 fish from unoiled sites were exposed to oil. Subsequent studies showed some indications of sublethal injuries to rockfish from exposure to oil.</p>	ST2A and ST2B

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**Exxon Valdez Oil Spill Project Status Summary**  
**1992 Work Plan**  
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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
ST7	Demersal Fishes Damage Assessment	NOAA	Final report accepted by OSPIC; copies currently being made.	Collier, T. Assessment of oil spill impacts on fishery resources: measurement of hydrocarbons and their metabolites, and their effects, in important species. NOAA  Results show continuing exposure of several benthic fish species and pollock, suggesting continuing petroleum contamination of subtidal sediments, water and food in 1990 and 1991 at sites up to 400 miles from the spill origin.	ST1A
ST8	Sediment Data Synthesis	NOAA	Due date of final report extended to September 30, 1996. Report will include data through FY 95, and an electronic version of the hydrocarbon database.	Report will include electronic database.  Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	TS1, TS3, and 93053.
TM3	River Otter and Mink Damage Assessment in Prince William Sound	ADFG	Report submitted to OSPIC; undergoing format review.	Faro, J.B., R.T. Bowyer, J.W. Testa, and L.K. Duffy. Assessment of injury to river otters in PWS, AK following the <i>Exxon Valdez</i> oil spill. ADF&G  The results indicate that differences in home range, habitat selection, and latrine site abandonment, as well as changes in food habits, occurred in river otters.	CH1B and R103
TS1	Hydrocarbon Analysis	NOAA	Report being prepared under ST8.	See ST8.  Coordinated the chemical analysis of all samples collected by damage assessment studies to develop a single set of analytical data comparable across projects.	ST8, TS3, and B08.

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# ***Exxon Valdez Oil Spill Project Status Summary***

**1992 Work Plan**

**Quarter Ending March 31, 1996**

<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
TS3	GIS Mapping and Analysis: Damage Assessment	ADNR	No report required.	Provided mapping and database support for damage assessment projects.	Supported numerous damage assessment projects, including FS 4, FS13, CH1A and R47.

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**Exxon Valdez Oil Spill Project Status Summary**  
**1993 Work Plan**  
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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93002	Sockeye Salmon Overescapement	ADFG	Annual report (funded under 94258) accepted by Chief Scientist February 22, 1995. Not yet at OSPIC.	Schmidt, D., et al. Sockeye salmon overescapement. Red Lake 1994 plankton indicate downward trend associated with increased sockeye salmon fry recruitment. May suggest increased smolt production in 1995 likely. Akalura Lake failed to meet escapement goals. Adult return to Red Lake accurately forecasted by smolt program. Kenai River adult return forecast with large bounds because of uncertainty of smolt production in 1990.	Project is continuation of FS27, 93002. Continued as 94258.
93003	Salmon Egg to Pre-emergent Fry Survival	ADFG NOAA	The results of this project will be presented in two reports (funded under 94191): (1) ADFG report accepted by OSPIC; available to public. (2) NOAA results included in report prepared under 94191. See 94191 for status.	(1) Sharr, S. and J.E. Seeb. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound. (2) See 94191. Oil exposures completed for 1992 and 1993 brood years. 1992 brood pink salmon died from bacterial kidney disease; spawning not possible. Precautions to ensure survival of 1993 brood have been taken. Persistence of elevated embryo mortalities in oiled streams in 1992 indicate possible genetic damage to wild pink salmon populations from the <i>Exxon Valdez</i> oil spill. Preliminary laboratory studies support the genetic hypothesis. Additional laboratory studies demonstrate dose response of pink salmon embryos when incubated in gravel exposed to crude oil from the <i>Exxon Valdez</i> .	Started in 1989 as FS2 and continued as R60C and 94191.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93006	Site Specific Archaeological Restoration	DOI/ NPS	REPORT (funded under 94007) OVERDUE.	Birkedahl, T., et al. 1993. Archaeological site monitoring and restoration.	Continued as 94007.
<p>Archaeological restoration assessments conducted at 14 sites in 1993 suggest that a majority of the archaeological vandalism that can either be directly or indirectly linked to the <i>Exxon Valdez</i> oil spill event occurred in 1989 before adequate constraints were put into place over the activities of oil spill clean-up personnel. Most vandalism took the form of "prospecting" for high yield sites. In 1993, only two of the 14 sites visited showed signs of continued vandalism and the link between this recent vandalism and the <i>Exxon Valdez</i> oil spill event remains highly problematical. Oil monitoring samples from the archaeological sites have not been processed as of this date, but oil was still visible to the naked eye in the intertidal zones of two of the 14 sites visited.</p>					
93012	Genetic Stock Identification of Kenai River Sockeye Salmon	ADFG	Draft final report (which also contains results of genetics component of 94255) submitted to Chief Scientist May 3, 1996; under peer review.	Genetic data were collected during 1992 and 1993 from spawning populations contributing to mixed-stock harvest of sockeye salmon in Cook Inlet. These data were used in a pilot study to estimate the component of Kenai River stocks harvested in mixed-stock areas of Upper Cook Inlet.	Began as R52. Continued as 94504. Spawning samples collected under 93015.

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93015	Kenai River Sockeye Salmon Restoration	ADFG	Annual report accepted by OSPIC; available to public.	Tarbox, K., et al. Kenai River sockeye salmon restoration.  Successful collection of baseline and fishery genetic samples. Successful in-season hydroacoustic survey of Upper Cook Inlet by subcontractor.	Began as R52 and continued as 94255. Genetic samples analyzed under 93012.
93016	Chenega Bay Chinook and Silver Salmon (NEPA Compliance)	ADFG	No report required (NEPA compliance only).		Continued as 94272. Also related to 93017.
93017	Subsistence Food Safety Survey and Testing	ADFG	Final report accepted by OSPIC; available to public.	Miraglia, R.A. 1995. Subsistence restoration project. ADF&G, Division of Subsistence, Anchorage, AK.  First round of tests for hydrocarbon contamination of subsistence resources showed little or no contamination. Results of second round of testing are pending. The observations of abnormalities in the tested resources caused a shift in concerns of subsistence users from oil contamination to what effects these abnormalities have on these resources. A series of public meetings were held in communities to locate sites and species of concern.	Continued as 94279.
93024	Restoration of Coghill Lake Sockeye Salmon Stock	ADFG	Redraft of final report submitted to Chief Scientist May 21, 1996; under peer review.	Monitoring showed the need for modifying both the type and concentrations of fertilizer.	Continued as 94259 and 95259.
93032	Cold Creek Pink Salmon Restoration (NEPA Compliance)	ADFG	Project canceled.		R105

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93033	Harlequin Duck Restoration	ADFG	<p>The results of this project will be presented in two reports (funded under 94066):</p> <p>(1) Report on Afognak habitat assessment and PWS production survey peer reviewed and returned to PI November 14, 1995.</p> <p>(2) REPORT OVERDUE.</p> <p>Analyses of blood and physiological samples from 1993 collections not completed by UC-Davis) not received. This contract work is delinquent by 2.3 years.</p>	<p>(1) Restoration monitoring of harlequin ducks in PWS and Afognak Island.</p> <p>Only 3 harlequin broods observed in western Prince William Sound; 14 in eastern Prince William Sound. Decreased numbers of harlequins molting in western Prince William Sound in July. Suspect incomplete gonadal development in pre-nesting western Prince William Sound harlequins. Blood/physiological analysis and hydrocarbon analyses in process. Harlequin breeding stream/nest site model in preparation. Harlequin breeding assessment completed on North Afognak Island.</p>	<p>Started in 1989 as B11 and continued as R71. 94427 and 96427 continue harlequin brood surveys.</p>
93034	Pigeon Guillemot Recovery	DOI	<p>Report (funded under 94506) accepted by OSPIC; available to public.</p>	<p>Sanger, G.A. and M.B. Cody. 1994. Survey of pigeon guillemot colonies in Prince William Sound, Alaska. U.S. Fish and Wildlife Service, Anchorage.</p> <p>One hundred eighty-four colonies, concentrated in southwest Prince William Sound and at Naked Island, were identified. This colony survey confirmed that the present population of pigeon guillemots in Prince William Sound is 3,000 - 4,900.</p>	<p>Continued as 94173.</p>



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93035	Black Oystercatchers / Oiled Mussel Beds	DOI	Draft report peer reviewed; returned to PI for revision January 3, 1996. Report also includes findings from R103.	Andres, B. 1993. Potential impacts of oiled mussel beds on higher organisms: black oystercatchers. US Fish and Wildlife Service, Anchorage, AK.  Growth rates of oystercatcher chicks were lower on oiled than unoiled nest sites. Some aliphatic compounds were detected in 1992 fecal samples from oiled sites. Breeding pairs increased on oiled Green Island from 1992 to 1993 but decreased on Knight Island from 1991 to 1993.	Continued as 94020.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93036	Oiled Mussel Beds	DOI, NOAA	The results of this project will be presented in two reports: (1) DOI draft annual report peer reviewed; returned to PI for revision July 21, 1995. (2) Annual report submitted to Chief Scientist October 6, 1995; undergoing peer review. Annual report accepted by OSPIC; available to public.	(1) Cusick, J.A. and G.B. Irvine. 1995. DOI/NBS. Geographical extent and recovery monitoring of intertidal oiled mussel beds in the Gulf of Alaska affected by the <i>Exxon Valdez</i> oil spill. (2) Babcock, M. Recovery monitoring and restoration of oiled mussel beds in PWS, Alaska. In 1992 and 1993, mussels and sediments from 70 mussel beds in PWS were sampled. Sediments collected from 31 of the oiled beds had total petroleum hydrocarbon concentrations greater than 10,000 ng/g wet weight. The highest concentrations were in sediments collected from Foul Bay (62,258 +/- 1,272 ng/g total polynuclear hydrocarbons). Minimally intrusive site manipulation was conducted at three heavily oiled mussel beds. Preliminary evaluations indicate these methods were not effective in reducing petroleum hydrocarbons adjacent to manipulated areas. Along the Kenai and Alaska Peninsulas, 15 mussel beds were sampled--four of which were new sites--and four of these beds showed total petroleum hydrocarbons in excess of 5,000 ng/g wet weight.	Continued as 94090.
93038	Shoreline Assessment	ADEC	Draft report peer reviewed; returned to PI for revision January 26, 1996.	Piper, E., et al. 1993 shoreline assessment.  Surface oil has become stable. Subsurface oil has decreased substantially since 1991. Oiling is discontinuous throughout the study site.	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93039	Herring Bay Experimental and Monitoring	ADFG	Draft report peer reviewed; returned to PI for revision September 15, 1995.	<p>Highsmith, R.C., M.S. Stekoll, P. van Tamelen, A.J. Hooten, S.M. Saupe, L. Deysher, and W.P. Erickson. 1995. Herring Bay monitoring and restoration studies. School of Fisheries and Ocean Sciences, UAF.</p> <p>Examination of dominant intertidal alga, <i>fucus gardneri</i>, has shown that larger plants were removed from intertidal in areas affected by spill/clean-up. Where <i>fucus</i> cover was reduced, abundance of ephemeral algae often increased. Populations of grazing invertebrates, e.g., limpets and periwinkles, showed reduced densities at oiled sites in upper intertidal. Initially, barnacle recruitment was lower in quadrats on tar-covered rocks than clean quadrats, but differences disappeared at most sites over time. <i>Fucus</i> germlings and filamentous algae continued to have lower densities and percent cover on oiled than non-oiled substrates. Recovery occurring in lower/middle intertidal zones and normal community interactions returning. Upper intertidal continues to exhibit damage; recovery may take additional 2-5 years.</p>	Evolved from CH1A and R102 and continued as 94086.
93041	Comprehensive Monitoring	NOAA	Project discontinued.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93042	Killer Whale Recovery	NOAA	Final report (funded under 94092) submitted to OSPIC; undergoing formatting review.	Dalheim, M.E. 1994. Assessment of injuries and recovery monitoring of Prince William Sound killer whales using photo-identification techniques. National Marine Mammal Laboratory, Seattle, WA. Photographic analysis of resident pods revealed 14 animals missing from AB pod over the period 1989-1991. Despite considerable searching effort in PWS and Southeast Alaska, the missing whales have not been observed. Given the stability of resident pods, it is assumed the missing whales are dead. The mortality rates for AB pod ranged from 3.1% in 1988 to 19.4% in 1989, 20.7% in 1990, and 4.3% in 1991. Zero mortality occurred in 1992 and 1993. The adult annual mortality rate of killer whales is usually less than 2%. Annual pod mortality rates on the order of 20% are unprecedented for North Pacific killer whales.	Close-out/report writing funded under 94092.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93043	Sea Otter Demographics and Habitat	DOI (NBS)	The results of this project will be presented in three reports (funded under 94246): (1) Data on recovery of sea otter carcasses being presented in MM6 (#15). (2) Final report approved by OSPIC; copies being made. (3) Draft report on sea otter demographics accepted by Chief Scientist; not yet at OSPIC.	(1) See MM6(#15). (2) Bodkin, J.L. and M.S. Udevitz. 1993 trial aerial survey of sea otters in PWS, Alaska. 1994. NBS, Anchorage, AK. (3) Udevitz, M.S. , B.E. Ballachey, and D. L. Bruden. 1995. A population model for sea otters in western PWS. USNBS. Anchorage, AK. Aerial survey of sea otters in Prince William Sound completed summer 1993; estimated abundance is approximately 18,000. Age distribution of sea otter carcasses recovered in spring 1993 in western Prince William Sound is similar to prespill distribution. Age- and sex-specific survival rates generated from carcass data for sea otters in Prince William Sound.	Report writing funded under 94246.
93045	Marine Bird / Sea Otter Surveys	DOI	Final report accepted by OSPIC; available to public.	Agler, B.A., P.E. Seiser, S.J. Kindall and D.B. Irons. 1994. Marine bird and sea otter populations in Prince William Sound, Alaska: Population trends following the <i>Exxon Valdez</i> oil spill. U.S. Fish and Wildlife Service, Anchorage. Overall marine bird population estimates in Prince William Sound have not changed significantly since 1989, but were 41% lower than 1972-1973 estimates. Rates of increase of goldeneyes and surfbird populations were higher in the unoiled zone of Prince William Sound than in the oiled zone, whereas oystercatchers increased more rapidly in the oiled zone.	Started as part of B2 and continued as 94159.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93046	Habitat Use, Behavior, and Monitoring of Harbor Seals in PWS	ADFG	Final report (funded under 94064) accepted by OSPIC; available to public.	<p>Frost, K.J. and L.F. Lowry. 1994. Habitat use, behavior, and monitoring of harbor seals in Prince William Sound, Alaska. ADFG</p> <p>Counts of seals at 25 trend sites in Prince William Sound were similar during pupping and molting in 1992 and 1993. However, 1993 pupping counts were 23% lower than in 1989. Molting counts were similar to 1989 postspill counts, but 27% lower than 1988 counts. Sixteen seals satellite-tagged since 1992 indicate that seals in central Prince William Sound haul out and feed near the same sites with little movement to other areas. Feeding usually occurs in depths of 100-200 meters, with a maximum recorded dive depth of 404 meters.</p>	<p>Started in 1989 as MM5, which was closed out as R73. Continued as 94064.</p>

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93047	Subtidal Monitoring	ADEC, ADFG, NOAA	<p>The results of this project will be presented in three reports (funded under 94285):</p> <p>(1) NOAA sediments - Final report submitted to OSPIC; undergoing format review.</p> <p>(2) ADEC microbiology - Final report accepted by OSPIC; available to public.</p> <p>(3) ADFG eelgrass - Final report accepted by OSPIC; available to public.</p>	<p>(1) Recovery of sediments in the subtidal sediment environment inside PWS.</p> <p>(2) Braddock, J. Microbiology of subtidal sediments: monitoring and microbial populations.</p> <p>(3) Jewett, S., et al. The effects of the <i>Exxon Valdez</i> oil spill on shallow subtidal communities in PWS 1989-93.</p> <p>As a follow-up to previous studies from 1989-1991, the numbers and activity of oil-degrading microorganisms were measured in sediments collected in 1993. Preliminary results suggest some contamination remains in subtidal sediments. However, generally very low numbers were found where visible oil was present (e.g., subsurface sediments, Northwest Bay). Analysis of 1993 eelgrass data complete. Several infaunal and epifaunal taxa more abundant in oiled bed sites than control sites. Amphipods less abundant in oiled sites. Sea urchins are more abundant. <i>Hemosiderosis</i> in fishes from oiled sites.</p>	Started as ST1A and continued as 94285. Report writing under 94285.
93049	Monitor Murre Colony Recovery	DOI/FWS	Final report accepted by OSPIC; copies currently being made.	<p>Roseneau, D. 1995. Common murre Restoration monitoring in the Barren Islands, Alaska, 1993. U.S. Fish and Wildlife Service, AK Maritime NWR, Homer, AK.</p> <p>Murre productivity in the Barren Islands was 0.4 - 0.6 chicks per nest site in 1993, up from near zero in 1989. Population counts on plots were similar to or higher than in previous postspill years.</p>	Started as R11 and continued as 94039. (Formerly in EVOS database as 93022.)

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93051	Habitat Information for Anadromous Streams and Marbled Murrelets	ADFG, DOI, USFS	<p>The results of this project will be presented in 5 reports (funded under 94505):</p> <p>(1) ADFG Stream Habitat Assessment/PWS &amp; Lower Kenai- Final report accepted by OSPIC; available to public.</p> <p>(2) USFS Habitat Protection Info. for Channel Type Classification Study- findings included in report prepared under 95505B. See 95505B for results.</p> <p>(3) DOI Pilot Study on Capture and RadioTagging of Murrelets in PWS- Final report accepted by Chief Scientist; not yet at OSPIC.</p> <p>(4) DOI Information Needs for Habitat Protection: Marbled Murrelet Habitat Identification -Final report accepted by OSPIC; available to public.</p> <p>(5) USFS Upland Nesting Habitat of Marbled Murrelet - final report accepted by OSPIC; available to public.</p>	<p>(1) Sundet, K., et al. 1994. Stream habitat assessment project: Prince William Sound and Lower Kenai Peninsula. ADFG</p> <p>(2) See 95505B.</p> <p>(3) Burns, R.A., et al. 1994. Pilot study on the capture and radio tagging of murrelets in PWS, AK, July and August, 1993. U.S. Fish and Wildlife Service, Anchorage, AK.</p> <p>(4) Kuletz, K.J., et al. Information needs for habitat protection: marbled murrelet habitat identification. 1994.</p> <p>(5) Characterization of the upland nesting habitat of the marbled murrelet in the <i>Exxon Valdez</i> spill area. Late season surveys, sites at the heads of bays, low elevations, high percentages of forest cover, and large trees were all consistent predictors of high murrelet activity. Radar performed better than humans in detecting murrelets and was cheaper than boat-based or ground-based surveys by humans. About 995 km of shoreline and 117 km<sup>2</sup> of uplands were surveyed for anadromous fish streams on private lands on the lower Kenai Peninsula and in Prince William Sound, resulting in discovery of 186 anadromous streams totaling about 57 km. Stream habitat parameters were collected along all streams, upper extents of anadromous distribution were documented and streams were mapped by GIS.</p>	<p>Evolved from R15 and R47. Also related to 93045. Project closeout in FY 94 as 94505 and in FY95 as 95505B.</p>



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93053	Hydrocarbon Database	NOAA	No report required.	Continuing project with updating and quality control of hydrocarbon data. Analyzed several thousand environmental samples, provided numerical correlations directly related to oil, and assessed associations of observed biological effects with concentrations of <i>Exxon Valdez</i> oil.	Continued as 94290. This project supports most restoration projects.
93057	Damage Assessment GIS	ADNR	No report required.	Cataloged and plotted over 160 maps for public access at OSPIC. Provided mapping and database support for damage assessment studies.	Supported numerous damage assessment projects, including B11, FS13, AW1, and CH1A.
93059	Habitat Identification Workshop	USFS	No report required.	Identified parcels of non-public land containing critical habitat necessary for the recovery of injured resources and services.	
93060	Accelerated Data Acquisition	USFS	No report required.	Collected and organized existing resource data needed for the analysis of private lands in the oil spill area.	
93062	Restoration GIS	ADNR	No report required.	Provided technical mapping and database support for restoration projects. Generated spill area map and land status maps for Kachemak Bay, Seal Bay, and Eyak lands in support of habitat protection data analysis and negotiations. Plotted maps to provide public access to EVOS information.	Supported numerous restoration projects, including 93038, 93063, 93064 and R47.

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93063	Anadromous Stream Surveys	USFS	Project is data analysis and report writing for anadromous stream portion of R105.	See R105.	Started as R105 and continued as 94139.
93064	Imminent Threat Habitat Protection	ADNR	No report required.	See "Opportunities for Habitat Protection/Acquisition" (2/16/93) and "Comprehensive Habitat Protection Process; Large Parcel Evaluation & Ranking, Volume I" (11/30/93). Imminent Threat Evaluation and the first round of Large Parcel Evaluation were completed. \$7.5 million from settlement funds was combined with \$14.5 million from other sources for the purchase of private inholdings in Kachemak Bay. \$29,950,000 was committed from the most recent court request for the initial payment for purchase of private land near Seal Bay on Afognak Island. The total purchase price of this transaction is \$38,700,000 with the balance to be paid in three annual installments.	
93065	Prince William Sound Recreation	USFS	Report (funded under 94217) submitted to OSPIC; undergoing formatting review.	Menefee, W. and S. Hennig. 1994. USFS. Prince William Sound recreation project. Recreation Injury Statement (10/93) was incorporated into the Draft Restoration Plan. Final report includes a prioritized list of projects and other recommendations for restoration of recreation in Prince William Sound.	Close-out/report writing funded under 94217.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
93066	Alutiiq Archeological Repository	ADEC	No report required.	Opening ceremony held May 13, 1995.	
93067	Pink Salmon Coded Wire Tag Recovery	ADFG	Final report approved by OSPIC; available to public.	Sharr, S., and Peckham, C.J. 1993. Coded wire tag recoveries from pink salmon in PWS fisheries. Reduced commercial exploitation of damaged wild pink salmon populations through timely inseason estimates of hatchery and wild contributions to harvest. Accurate and timely stock composition estimates were used by fisheries managers to justify restriction of fishing fleet to areas where interception of damaged wild populations in mixed-stock fisheries could be minimized.	Started as FS3 and continued as R60A, 94184 (report preparation ) and 94320B.
93068	Non-Pink Salmon Coded Wire Tag Recovery	ADFG	1993 results will be included in report being prepared under 94137. See 94137 for status.	See 94137. Timely and accurate inseason estimates of hatchery and wild stock contributions to commercial harvest for improved management of wild stocks in mixed-stock fisheries.	Evolved from FS3; continued as 94137.
93AD	Administrative Director's Office		No report required.		
93FC	Financial Committee		No report required.		
93RT	Restoration Team Support		No report required.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94007	Site Specific Archaeological Restoration	ADNR	<p>The results of this project will be presented in two reports (funded under 95007A):</p> <p>(1) Site protection plan accepted by OSPIC; copies currently being made.</p> <p>(2) Annual report peer reviewed. Available to public at OSPIC.</p>	<p>(1) Bittner, J.E. and D.R. Reger. 1995. The 1994 EVOS report, spill area site and collection plan. ADNR, Anchorage, Alaska.</p> <p>(2) Reger, D. 1994. Archaeological site monitoring and restoration.</p>	Continuation of 93006.
<div style="text-align: center;"> <p><b>RECEIVED</b></p> <p>JUN 20 1996</p> <p>EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL ADMINISTRATIVE RECORD</p> </div>				<p>Monitoring: ADNR monitored seven sites on Shuyak Island and Outer Kenai Coast (including three at Nuka Island) and found oil but no evidence of new disturbance. USFWS monitored six sites on Afognak Island and found no indication of new vandalism. NPS monitored two sites, McArthur Pass in Kenai Fjords National Park and Cape Gull on the Katmai coast, and found no new damage.</p> <p>Data Recovery: USFS began restoration of two sites in PWS: SEW-440 and SEW-448.</p> <p>Site Protection Plans: ADNR compiled information about the need for site protection, with emphasis on adequate curation of collections in the spill area.</p>	
94020	Black Oystercatcher Interaction with Intertidal	DOI	Project is close-out/report writing for 93035. See 93035.		Close-out/report writing for 93035.

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94039	Common Murre Population Monitoring	DOI/FWS	Draft final report (funded under 95039) peer reviewed; returned to PI for revision November 14, 1995.	Roseneau, D.G., A.B. Kettle, and G.V.Byrd. Common murre restoration monitoring in the Barren Islands, Alaska in 1994. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK  In 1994, complete censuses and replicate index plot counts were made at the East Amatuli Island-Light Rock and Nord Island murre colonies. Although a marginally significant increasing trend was found over the 6-year post-spill period at one 2-plot index area at East Amatuli Island-Light Rock, no significant trends were detected in the other 1989-1994 East Amatuli Island-Light Rock and Nord Island population data sets. Productivity was high (0.7 fledglings per nest site) and within normal bounds, compared with other colonies.	Begun as R11; continued as 93022. Close-out/report writing under 95039.

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94041	Introduced Predator Removal from Islands	DOI/ FWS	Annual report peer reviewed. Annual report accepted by OSPIC; copies currently being made.	<p>Bailey, E. 1995. Introduced predator removal in the Shumigan Islands. U.S. Fish and Wildlife Service, Alaska Maritime NWR, Homer, AK.</p> <p>Removed 33 arctic foxes from Simeonof Island (no more believed remaining); removed 3 arctic foxes from Chernabura Island (population appeared to be dying out naturally). Censused populations of black oystercatchers and pigeon guillemots on above islands as well as on nearby islands with no foxes (controls). No oystercatcher nests found on fox islands; densities of both oystercatchers and guillemots are much less on fox islands than on fox-free ones. Recovery of nesting populations of oystercatchers and guillemots is expected to begin in 1995 on Simeonof and Chernabura islands.</p>	
94043A1	Eshamy River Restoration (W. PWS)	USFS	Project discontinued.		

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94043A2	Gumboot Creek Restoration (W. PWS)	USFS	No report required (NEPA only).		NOTE: Also known as Gunboat Creek.
EA completed and decision notice signed July 27, 1995.					
94043A3	Stream No. 508 Restoration	USFS	Project discontinued.		
EA completed and decision notice signed July 27, 1995.					
94043A4	Stream No. 509 Restoration (W. PWS)	USFS	Project discontinued.		
EA completed and decision notice signed July 27, 1995.					
94043A5	Otter Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
EA completed and decision notice signed June 28, 1995.					

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94043A6	Miners Creek/Lake Restoration (N. PWS)	USFS	Project discontinued.		
94043A7	Shrode Creek/Lake Restoration (W. PWS)	USFS	No report required (NEPA only).		
				EA completed and decision notice signed June 28, 1995.	
94043B1	Sockeye Creek/Lake Restoration (Knight I.)	USFS	No report required (NEPA only).		
				EA finalized and signed. EA concluded that Sockeye Creek is not a cost effective site for this project at this time.	
94043B2	Rocky Creek/Bay Restoration (Montague)	USFS	Redraft of final report submitted to Chief Scientist April 30, 1996; under peer review.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94064	Harbor Seal Habitat Use and Monitoring	ADFG	Annual report (which includes results of 94320F) accepted by OSPIC; copies currently being made. NOTE: Project also includes report writing funds for 93046.	<p>Frost, K., et al. 1995. Habitat use, behavior, and monitoring of harbor seals in PWS, AK. ADF&amp;G.</p> <p>Twenty-six seals caught and sampled September 1994 (blood, whiskers for stable isotopes, blubber for fatty acids, skin for genetics, measurements). Twelve of these instrumented with satellite-linked time-depth recorders (6 adults, 6 subadults). Aerial surveys conducted during molting period in September. Preliminary survey analysis suggests no marked increase or decrease since 1993. Eight SLTDRs functioning on 11/10/94. Most seals remain local in PWS; one subadult in Gulf of Alaska.</p>	Started as MM5; continued as R73, 93046, and 95064.
94066	Harlequin Duck Recovery Monitoring	ADFG	Project is close-out/report writing for 93033.	See 93033.	Close-out/report writing for 93033.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94086	Herring Bay Experimental and Monitoring Studies	ADFG	Annual report submitted to Chief Scientist August 30, 1995; under peer review.	Highsmith, R.C., et al. Herring Bay monitoring and restoration studies. UAF/ADF&G	Population dynamics portion of 93039.
				Four field trips were conducted in 1994 for data and sample collections. Data was collected for population dynamics, barnacle recruitment, and water circulation studies.	
94090	Mussel Bed Restoration and Monitoring	NOAA	Annual report submitted to Chief Scientist October 6, 1995; undergoing peer review. Annual report accepted by OSPIC; available to public.	Babcock, M.M., P.M. Harris, S.D. Rice, R.J. Bruyere, and D.R. Munson. 1995. Recovery monitoring and restoration of oiled mussel beds in Prince William Sound, AK. NOAA/NMFS, Juneau, AK	CH1B and 93036. Continued as 95090.
				Twelve mussel beds were cleaned and restored in 1994.	
94092	Killer Whale Recovery Monitoring	NOAA	Project is close-out/report writing for 93042. See 93042 for status.	See 93042.	Continuation of 93042.

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94102	Marbled Murrelet Prey and Foraging Habitat in Prince William Sound	DOI/FWS	Final report (funded under 95102) accepted by Chief Scientist. Not yet at OSPIC.	Kuletz, K.J., D.K. Marks, R. Burns, and L. Prestash. Marbled murrelet foraging patterns and habitat use during the breeding season in PWS.  Forty-seven murrelets were radio-tagged. Foraging ranges were obtained by tracking birds with boats and planes. Birds foraged up to 60 kms. from their nests (average 10 km.). The average distance from shore was 0.6 km.	R15, 93051, 95102
94110	Habitat Protection - Data Acquisition and Support	ADNR	No report required.	See Habitat Protection Working Group, "Comprehensive Habitat Protection Process; Large Parcel Evaluation and Ranking" Volumes I and II (November 2, 1994 Supplement).	Close-out under 95110-CLO.
94126	Habitat Protection and Acquisition Fund	ADNR	No report required.		94110

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94137	Stock Identification of Chum, Sockeye, Chinook, and Coho in PWS	ADFG	Draft final report (funded under 95137), which incorporates results of 93068, peer reviewed and returned to PI for revision April 19, 1996.	Scanned approximately half a million sockeye salmon and 1/3 million chum salmon in PWS for tags. Results of sockeye tag recoveries were used to manage fisheries in western PWS. Interception of Coghill Lake-bound wild fish was kept to a minimum.	Evolved from FS03; continued as 93068 and 95137.
94139A1	Waterfall Creek Bypass Instream Restoration	ADFG	No report required (project carried forward as Project 95139A1).		94043, carried forward as 95139A1
94139A2	Port Dick Spawning Channel	ADFG	No report required (project carried forward as 95139A2).		

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94139B1	Otter Creek Bypass Instream Restoration	USFS	Annual report peer reviewed. Annual report accepted by OSPIC; available to public.	Wedemeyer, K., et al. 1995. Instream habitat and stock restoration for salmon, Otter Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK	95139B
Otter Creek bypass rehabilitation completed.					
94139B2	Shrode Creek Bypass Instream Restoration	USFS	Annual report peer reviewed. Annual report accepted by OSPIC; available to public.	Wedemeyer, K., et al. 1995. Stream habitat and stock restoration for salmon, Shrode Creek barrier bypass subproject. USDA Forest Service, Chugach N.F., Anchorage, AK	95139B
Shrode Creek bypass renovation completed.					
94139C1	Montague Island Chum Instream Restoration	USFS	Annual report peer reviewed and returned to PI for revision April 19, 1996.	Schmid, D., et al. 1995. Montague Island chum salmon restoration. USDA Forest Service, Chugach N.F., Cordova, AK	95139C1
Project completed for three streams on Northern Montague Island. This project completed 32 structures and 15 acres of thinning.					

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94139C2	Lowe River (6.5 Mile) Instream Restoration	ADFG	No report required (project carried forward as Project 95139C2).		95139C2
94159	Marine Bird & Sea Otter Boat Surveys	DOI	Final report approved by OSPIC; available to public.	Agler, B.A., S.J. Kendall, P.E. Seiser, and D.B. Irons. 1995. Marine bird and sea otter abundance of PWS, Alaska: Trends following the T/V <i>Exxon Valdez</i> oil spill.  Estimated 320,470 plus-or-minus 63,640 marine birds in PWS in March 1994. Goldeneye and merganser populations may still be showing effects from oil spill. They are both increasing faster in the unoiled area than in the oiled area.	Began as B2; continued as 93045.

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94163	Forage Fish Influence on Recovery of Injured Species	NOAA, ADFG	<p>The results of this project will be presented in two reports:</p> <p>(1) <u>ADFG</u>: Annual report peer reviewed. Annual report submitted to OSPIC; undergoing formatting review.</p> <p>(2) <u>NOAA</u>: Annual report peer reviewed. Annual report accepted by OSPIC; available to public.</p>	<p>(1) Willette, M. Forage fish influence on recovery of injured species: forage fish diet overlap.</p> <p>2) Tyler, A., et al. Forage fish study in PWS, AK. UAF/NMFS. Appendix by B. Ostrand, USFWS/DOI.</p> <p><u>NOAA</u>:</p> <p>August cruise: (a) Hydroacoustic data showed fish schools mainly in the more shallow water regions near the bottom; fish appeared absent from mid-water layers over the deep passages.</p> <p>November cruise: (a) Temperature-depth profiles for open areas of PWS showed surface temperature 7.0C, warming to 9.0C at 50m depth. Water cooled to 5.0C with further increase in depth. Salinity gradually increased through this depth range, indicating little mixing of the water column and that cooling was occurring from the surface downward due to cold air temperatures. Over the shallow shelf areas the profiles were different, being at 8.0C and mixed to 70m. (b) Five stations were sampled for invertebrate forage species, with euphausiids the abundant crustacean at most stations. (c) Hydroacoustic analysis showed fish mainly located above the temperature maximum at depths of 20 to 40 meters (net sampling showed these fish were young herring mixed with young pollock). Hydrographic data indicated fish aggregations were at temperatures of 7.0 to 7.5C. A second layer of fish was seen near the bottom (likely adult pollock).</p> <p><u>ADFG</u>: pproximately 1,500 stomach samples collected for analysis of diet overlap. Found Pacific herring, walleye pollock, and juvenile chum salmon common and widespread throughout western PWS.</p>	<p>Integrate with Projects 94320 (PWS System Investigation), 94102 (Murrelet Prey), and 94173 (Pigeon Guillemot).</p>

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94165	Herring Genetic Stock Identification in Prince William Sound	ADFG	Project deferred to FY 95 (95165).		95165
94166	Herring Spawn Deposition and Reproductive Impairment	ADFG, NOAA	<p>The results of this project will be presented in two reports:</p> <p>(1) ADFG annual report peer reviewed; not yet at OSPIC.</p> <p>(2) NOAA annual report peer reviewed; available to public at OSPIC.</p>	<p>(1) Wilcock, J.A., E.D. Brown and E. Debevec. Herring spawn deposition and reproductive impairment.</p> <p>(2) Carls, M.G., S.D. Rice, and R.E. Thomas. 1995. Impact of exposure of adult pre-spawn herring (<i>Clupea harengus pallasii</i>) on subsequent progeny. NOAA/NMFS, Juneau, AK.</p> <p>Adult herring biaccumulated hydrocarbons, including ovarian tissue and ova. Adults were stressed by oil when VHS was present; VHS prevalence was correlated with PAH concentration. Eggs and larvae were not impacted by parental exposure to hydrocarbons. Factors unaffected included egg fertility, time of hatch, survival, larval stage at hatch, swimming ability, morphology, chromatid separation, and number of mitotic figures.</p>	Coordinating with USFS regarding avian predation (94320Q).

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94173	Pigeon Guillemot Recovery Monitoring	DOI/ FWS	Final report accepted by OSPIC; available to public.	Hayes, D. L. 1995. Recovery monitoring of pigeon guillemot populations in PWS, Alaska. USFWS, Anchorage, AK.	Continued from 93034.
				Found evidence of predation on eggs and chicks on Naked Island and abandonment of eggs on Jackpot Island. On Naked Island, gadids were much more prevalent and sandlance much less prevalent in the diet of chicks in 1994 than in 1979-81. Herring or smelt accounted for ca. 32% of prey items delivered to chicks at Jackpot Island, but only ca. 1% at Naked Island.	
94184	Coded Wire Tag Recoveries from Pink Salmon in PWS	ADFG	Project is close-out/report writing for 93067. See 93067.		Began as FS3. Continued as R60A, 93067, and 94320B.
94185	Coded Wire Tagging of Wild Pinks for Stock Identification	ADFG	Project discontinued.		

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94191	Oil Related Egg and Alevin Mortalities	ADFG, NOAA	<p>The results of this project will be presented in two reports:</p> <p>(1) ADFG annual report peer reviewed; not yet at OSPIC.</p> <p>(2) NOAA annual report peer reviewed; available to public at OSPIC.</p> <p>(NOTE: Project also includes report writing funds for R60C and 93003.)</p>	<p>(1) Seeb, J.E., et al. Oil related egg and alevin mortalities. ADF&amp;G</p> <p>(2) Heintz, R.A., S.D. Rice, and J.W. Short. 1995. Injury to pink salmon eggs and pre-emergent fry incubated in oiled gravel (laboratory study). NOAA/NMFS, Juneau, AK</p> <p><u>ADFG</u> - Collected gametes from 8 controlled and 8 oiled streams. These eggs are now being incubated and will be analyzed in 1995.</p> <p><u>NOAA</u> - 1992 brood died from bacterial kidney disease. 1993 brood emerged from incubators by 5/15/94. 18,000 fish were coded wire tagged and released May 1994; 14,000 fish were retained for PIT tagging later in the summer. Dose-related differences in growth and size of 1992 brood year observed in October 1993 were not as apparent in April 1994. Embryo survival to the development of the eye and emergence from substrate were measured in 1993 brood year, and clear relationship was observed between dose and survival to both developmental stages. During emergence period, inspected over 50,000 newly emerged fry for visible lesions and observed a dose relationship with the proportion of fish displaying edema.</p>	Began as FS02 and R060C; continued as 93003.

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94199	Institute of Marine Science - Seward Improvements	ADFG	No report required.		Continued as 95199-CLO.
				Record of Decision signed by DOI, DOA (USFS), and NOAA October 31, 1994. Capital funding approved by Trustee Council November 2, 1994, subject to Executive Director's approval.	
94217	Prince William Sound Area Recreation Implementation	USFS	Project is close-out/report writing for 93065.	See 93065.	Close-out of 93065.
94244	Harbor Seal and Sea Otter Co-op Subsistence Harvest Assistance	ADFG	Annual report accepted by OSPIC; copies being made. (NOTE: Report also contains results from 95244.)	Fall, J. 1995. Harbor seal ( <i>Phoca vitulina</i> ) and sea otter ( <i>Enhydra lutrus</i> ) cooperative subsistence harvest assistance. ADF&G	Continued as 95244.
				A harbor seal/sea otter restoration workshop took place in Anchorage December 2, 1994. It was attended by more than thirty people, including representatives from eight communities which use marine mammals for subsistence. A second workshop took place on March 2, 1995.	

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94246	Sea Otter Recovery Monitoring	DOI	Project is close-out/report writing for 93043. See 93043.		Close-out/report writing for 93043.
94255	Kenai River Sockeye Salmon Restoration	ADFG	<p>The results of this project will be presented in two reports:</p> <p>(1) Annual report accepted by OSPIC; available to public.</p> <p>(2) Results of genetics component of project contained in report being prepared under Project 93012. See 93012 for status.</p>		Began as R53; continued as 93012 and 93015.
94258	Sockeye Salmon Overescapement	ADFG	<p>Annual report submitted to Chief Scientist November 29, 1995; under peer review.</p> <p>NOTE: Project also includes report writing funds for 93002.</p>		Started as FS27; continued as 93002 and 95258.
			<p>Skilak weight of fall predictive on both escapements and fall fry abundance. 1994 fall fry had low abundance and weight. Lipid comparisons of similar length fall fry from Tustumena and Skilak indicated Skilak fall fry entered winter in poor condition in 1993. 1995 adult return needed to define magnitude and duration of reduced sockeye production.</p>		

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94259	Coghill Lake Sockeye Salmon Restoration	ADFG	Annual report accepted by OSPIC; copies currently being made.	Edmundson, J.A., G.B. Kyle, and S.R. Carlson. 1995. Restoration of Coghill Lake sockeye salmon: 1994 annual report on nutrient enrichment restoration. ADF&G, Soldotna, AK.  Estimated 900,000-1,800,000 smolts outmigrated this year. Escapement approximately 7,200 adults. Response of phytoplankton to liquid fertilizer applications suggests fertilizer is not being lost to the anaerobic layer, but is actually improving the productivity of Coghill Lake.	Began as 93024.
94266	Shoreline Assessment and Oil Removal	ADEC, DOI/NBS	The results of this project will be presented in two reports: (1) <u>DOI/NBS</u> : Draft final report peer reviewed and returned to PI for revision June 14, 1995. Due date for submission of redraft extended to September 30, 1996. (2) <u>ADEC</u> : Final report accepted by Chief Scientist; not yet at OSPIC.	(1) Irvine, G. NBS/DOI. Fate and persistence of oil stranded on Gulf of Alaska shorelines during EVOS. (2) Munson, D. ADEC. Shoreline assessment and oil removal.	
94272	Chenega Chinook Release Program	ADFG	Annual report peer reviewed November 14, 1995. Not yet at OSPIC.	50,300 chinook smolts released at Crab Bay on 5/27/94. Chenega residents reared and fed smolts in net pens prior to release.	Continuation of 93016.

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94279	Subsistence Food Safety Testing	ADFG	Annual report submitted to Chief Scientist November 29, 1995; under peer review.	Miraglia, R. Subsistence restoration project: food safety testing.  Test results on final fish and shellfish samples received from NMFS lab. All results so low as to be within margin of error for tests. Seal samples from Tatitlek and duck samples from Chenega Bay were collected by ADFG with assistance from local subsistence hunters. Test results found hydrocarbon contamination was at background levels.	Continuation of 93017.
94285	Subtidal Sediment Recovery Monitoring	NOAA	Annual report submitted to Chief Scientist October 6, 1995; under peer review. Annual report accepted by OSPIC; available to public. (NOTE: Project also includes report writing funds for 93047.)	O'Clair, C.E., J.W. Short, and S.D. Rice. 1995. Subtidal monitoring: recovery of sediments in the Northwestern Gulf of Alaska. NOAA/NMFS, Juneau, AK.	Continuation of ST2A and 93047. Continued as 95106.
94290	Hydrocarbon Data Analysis and Interpretation	NOAA	No report required.		Continuation of ST8 and 93053. Continued as 95290.
In FY94, 2,742 samples were received and several hundred were submitted for analysis.					

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320A	Salmon Growth and Mortality	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		
				Growth rate of juvenile pink salmon in 1994 in PWS slightly above average compared to 1989-1993 period.	
94320B	Coded Wire Tagging Recovery-PWS Pinks	ADFG	Annual report peer reviewed October 13, 1995. Not yet at OSPIC.	Sharr, S., et al. 1994. Coded wire tag recoveries from pink salmon in PWS salmon fisheries. ADF&G.	Continued as 96186.
				Common property fisheries: 26.2 million caught, 4.4 million scanned (17%), 3,600-4,000 tags recovered. Hatchery revenue sales: 10.4 million caught, 2 million scanned (19%), 1,600 tags recovered. Scanned close to 100% of brood stock from PWS salmon hatcheries. Used results of in-season analysis, based on detection of tags, for critical management decisions regarding fishing areas and times. Ability to detect wild stock shortfalls and high abundance of hatchery fish contributed to meeting restoration goals.	

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320C	Otolith Mass Marking of PWS Pink Salmon	ADFG	Annual report peer reviewed; not yet at OSPIC.	Feasibility study initiated at PWSAC Cannery Creek Hatchery. Approximately 50,000 fry were immersed for different lengths of time and at different temperatures to determine optimum treatment for marking effectiveness and survival. Completed examination of otoliths subjected to varying levels of oxytetracycline and varying temperatures at ADFG lab. Marking was not successful for any of the treatment groups.	Continued as 96188.
94320D	Pink Salmon Genetics	ADFG	Results of this project are included in report being prepared under Project 95320D. See 95320D for status.	In ADFG lab, DNA data show upstream and intertidal spawners in the same stream genetically differ. Have also found that mainland and island populations genetically differ.	94184, 94191

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320E	Salmon Predation	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		
				Walleye pollock, adult pink salmon, Pacific herring, and dolly varden trout identified as important predators on juvenile salmon in Prince William Sound.	
94320F	Harbor Seals-Trophic Interactions	ADFG	Data/findings integrated into report prepared on 94064. See 94064 for status.	See 94064.	94064. Combined with 95064 for 1995.
				Preliminary fatty acid analysis of blubber samples indicates several distinct feeding patterns. Some seals appear to eat plankton-eating fishes and others piscivorous fishes/prey such as pollock and squid. Stable isotope analysis indicates different feeding patterns for subadults and most adults. Adult females in particular show a strong annual shift in prey.	
94320G	Phytoplankton and Nutrients	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320H	Role of Zooplankton in PWS Ecosystem	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		95320H
				Time series of zooplankton biomass tracks predation on 0-class fish in April, May, and June.	
94320I	Food Web Dependencies in PWS Ecosystem/Stable Isotopes	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.	<u>Food Web of Fishes</u> - Conducted isotopic analysis of approximately 500 samples (i.e, roughly 2,000 isotopic determinations). <u>Marine Mammal Trophic Energetics</u> - Conducted isotopic analysis of vibrissae of 23 seals, roughly 30 samples per whisker.	
94320J	Information Systems and Model Development	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		

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94320K	PWSAC-Experimental Fry Release	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		
				Adult pink salmon will return in summer 1995 as a result of 1994 fry release. Marine survivals will be estimated based on coded wire tag data. Rearing and release strategies will be compared and differences in marine survival evaluated between rearing and release groups.	
94320L	PWSAC-Experimental Manipulation	ADFG	Annual report peer reviewed November 14, 1995. Not yet at OSPIC.		
94320M	Physical Oceanography in PWS and Gulf of Alaska	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		

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94320N	Nearshore Fish	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		
94320P	SEA Program: Program Management	ADFG	Consolidated annual report peer reviewed November 14, 1995; not yet at OSPIC.		All subprojects of 94320.
94320Q	Avian Predation on Herring Swan	USFS	Annual report peer reviewed; not yet at OSPIC.	Bishop, M.A. 1995. Avian predation on herring spawn. Copper River Delta Institute, USDA Forest Service, Cordova, AK	95320Q

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94320S	Disease Impacts on Herring	ADFG	Annual report peer reviewed. Accepted by OSPIC; copies being made.	<i>Ichthyophonus hoferi</i> , viral hemorrhagic septicemia virus, and other causes of morbidity in Pacific herring spawning in PWS in 1994. ADF&G.  Because of the important of <i>Ichthyophonus</i> in herring morbidity in 1994, all previous Pacific herring sampled from PWS and submitted to UC Davis (1989, 1990, 1991, 1992) were re-screened for <i>Ichthyophonus</i> . Prevalence in these samples was never more than 15% and was distributed fairly evenly among liver, kidney, and spleen, but was never in the olfactory nares.	
94417	Waste Oil Disposal Facilities	ADEC	No report required (project carried forward as 95417).		95417

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
94422	Environmental Impact Statement for the Draft Restoration Plan	USFS	No report required.	Final EIS released September 30, 1994. Notice of Availability in Federal Register, Vol. 59, No. 186, p. 49232, dated 9/27/94 and Vol. 59, No. 189, p. 49926, dated 9/30/94. Record of Decision (ROD) signed October 31, 1994. Copies of FEIS available through OSPIC.	Continued as 95422.
94423	Oil Spill Public Information Center (OSPIC)	ALL	No report required.	During the quarter ending 3/31/96, OSPIC staff received 272 visitors, responded to 935 requests for information (of which 345 were sent via e-mail from the Web Home Page), processed 61 interlibrary loans, loaned 141 items, distributed 1,665 documents, and acquired 2 books, 4 reports, and 1 database. 144 documents were added to the Trustee Council Administrative Record and 22 Marine Ecosystem posters were sold. OSPIC staff received 9 NRDA/Restoration Project final reports, approved 6, and distributed copies of 8. OSPIC staff received 5 annual reports, approved 3, and distributed copies of 9. From 1/1/96 through 3/31/96, 10,128 people used the OSPIC World Wide Web Home Page.	

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94424	Restoration Reserve	ALL	No report required.		
				The Trustee Council has voted to place a total of \$36 million into a Restoration Reserve fund within the court registry investment system and to invest the funds in laddered securities. Motion to establish the Restoration Reserve has been signed by Judge Holland. However, the funds have not yet been invested.	
94425	Marine Mammal Book	NOAA	No report required.	See Marine mammals and the <i>Exxon Valdez</i> . Loughlin, T.R., editor. 1994. Academic Press, Inc. 395 pages.	
				Book printed and for sale by Academic Press.	
94427	Experimental Harlequin Duck Breeding Survey	ADFG	Annual report submitted to Chief Scientist October 13, 1995; under peer review.	Rosenberg, D.H. 1995. Experimental harlequin duck breeding survey in Prince William Sound, AK. ADF&G, Anchorage, AK.	B11, R71, 93033, 94066, 95427, and nearshore ecosystem projects.

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94428	Subsistence Restoration Planning and Implementation	ADFG	Final report (which also includes results from 95428) submitted to OSPIC; undergoing format review.	Fall, J. ADF&G. Subsistence restoration planning and implementation.	
94504	Genetic Stock Identification of Kenai River Sockeye	ADFG	Project is close-out/report writing for 93012. See 93012.		Close-out/report writing for 93012.
94505	Information Needs for Habitat Protection	USFS	Findings included in report prepared under 95505B. See 95505B for status.	See 95505B.	Close-out of 93051. 95505B.
94506	Pigeon Guillemot Recovery	DOI	Project is close-out/report writing for 93034. See 93034.		Report writing for 93034.

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94507	Symposium Proceedings Publication	NOAA	No report required. All 61 manuscripts, the preface, and introduction have been edited and typeset. Most have been revised based on editorial comments. The publisher is working on the index. The project completion date of June 30, 1996 has not changed. In FY 96, the Trustee Council approved an additional \$42,000 for the completion of the proceedings (Project 96507).	Proceedings will include 61 manuscripts in the following topic areas: fate and toxicity (8 manuscripts), intertidal (10 manuscripts), treatment effects (5), subtidal (3), herring (2), salmon (12), other fish (5), birds (8), mammals (2), archaeology (1), subsistence (4), human impacts (2). The book will probably be over 1200 pages, 50% longer than first estimated.	Continued as 96507.

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95001	Condition and Health of Harbor Seals	ADFG Castellini, UAF	Annual report submitted to Chief Scientist April 11, 1996; under peer review.	Castellini, J.M., N.J. Meiselman, and M.A. Castellini. Understanding and interpreting hematocrit measurements in pinnipeds. Marine Mammal Science 12(2):251-264 Hematocrit measurements of pinnipeds were 4-15% higher when utilizing clinical Coulter counter methods as opposed to the more direct method of microcentrifugation. Manual restraint of animals, isoflourane anesthesia, and developmental states also affected hematocrit measurements in pinnipeds. Thus, modeling efforts that require representative hematocrit values can be markedly impacted by variations in hematocrit measurement techniques and sampling regimens.	96001
95007A	Archaeological Site Restoration - Index Site Monitoring	ADNR Reger	Annual report submitted to Chief Scientist April 30, 1996; under peer review.		
95007B	Archaeological Site Restoration	USFS Yarborough	Final report being drafted; due date extended to August 31, 1996.		Report writing funded under 96007B.
95009D	Survey of Octopus and Chiton in Intertidal Habitats	USFS Scheel, PWSSC	Annual report submitted to Chief Scientist April 9, 1996; under peer review.	Scheel, D., et al. 1996. Survey of octopus in the intertidal in PWS, AK. PWSSC, Cordova, AK	96009D
95012	Comprehensive Killer Whale Investigation	NOAA Matkin	Annual report peer reviewed. Submitted to OSPIC; undergoing format review.		96012A

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95021	Seasonal Movement and Pelagic Habitat Use by Common Murres from the Barren Islands	DOI (NBS) Hatch	Final report submitted to Chief Scientist April 15, 1996; under peer review.		
95025	Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI Holland-Bartels	Annual report submitted to Chief Scientist April 20, 1996; under peer review.		96025
95025A	Nearshore Package: Project Planning and Development	DOI (NBS) Holland-Bartels	No report required.		96025
95026	Hydrocarbon Monitoring: Integration of Microbial and Chemical Sediment Data	ADEC Braddock	FINAL REPORT OVERDUE.		
95027	Kodiak Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC Piper	Final report submitted to Chief Scientist April 30, 1996; under peer review.		
95029	Population Survey of Bald Eagles in PWS	DOI (FWS) Schempf	Final report peer reviewed and returned to PI for revision April 8, 1996.	Bowman, T., Schempf, P., Hodges, J. 1996. Bald eagle populations in PWS, Alaska after the <i>Exxon Valdez</i> oil spill. USFWS/DOI	
95031	Reproductive Success as a Factor Affecting Recovery of Murrelets in PWS	DOI (FWS) Kuletz	Final report being drafted. Due date extended to June 30, 1996.	Kuletz, K.J., Kendell, S. developing a productivity index for marbled murrelets. USFWS/DOI	Final report funded under 96031.

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95038	Symposium on Seabird Restoration	DOI (FWS) Harrison, PSG	Final report, in addition to publication of workshop proceedings, will be submitted. A preview draft of the report was submitted to the Executive Director April 15, 1996. Expect to submit draft to Chief Scientist May 15, 1996.	Workshop took place September 29-October 2 in Girdwood, AK. Roughly 47 participants from Great Britain, Belgium, France, New Zealand, Japan, Canada, and USA. Primary focus was on common murre, harlequin duck, marbled murrelet, and pigeon guillemot. Achieved workshop goal by discussing seabird restoration in general, then applying the general discussions and conclusions to EVOS.	
95039	Common Murre Productivity Monitoring	DOI (FWS) Roseneau	Project is close-out/report writing for 94039. See 94039 for status.		94039
95041	Introduced Predator Removal from Islands - Follow-up Surveys	DOI (FWS) Bailey	Draft final report peer reviewed; returned to PI for revision March 4, 1996.	Byrd, G.V., E.P. Bailey, and W. Stahl. 1996. Introduced predator removal from islands. USFWS/DOI. Homer, AK	
95043B	Carry-forward: Cutthroat and Dolly Varden Rehabilitation in Western PWS	USFS Wedemeyer	Annual report submitted to Chief Scientist May 8, 1996; under peer review.		96043B
95052	Community Interaction/Use of Traditional Knowledge	ADFG Miraglia	Final report submitted to Chief Scientist May 1, 1996; under peer review.		96052
95058	Landowner Assistance Program	ADFG Kuwada	No report required.		
95060	Spruce Bark Beetle Impacts	ADEC Piper	REPORT OVERDUE.		

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95064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in PWS	ADFG Frost	Annual report submitted to Chief Scientist April 25, 1996; under peer review.	Population model for harbor seals. Initial results of fatty acid analysis indicate this technique has great use for distinguishing differences in seal diets.	96064
95074	Herring Reproductive Impairment	NOAA Rice/Carls	Final report being drafted. Due date extended to June 15, 1996.		Final report funded under 96074.
95076	Effects of Oiled Incubation Substrate on Survival and Straying of Wild Pink Salmon	NOAA Wertheimer	Annual report (which includes results of Project 95191B) submitted to Chief Scientist May 22, 1996; under peer review. Annual report submitted to OSPIC; undergoing format review.		96076
95086C	Herring Bay Monitoring and Restoration Studies	ADFG Highsmith, UAF	Draft final report on hold pending resolution of integration of earlier year's data (93039) -- discussions ongoing between PI and Restoration Office.		Final report writing funded under 96086.
95089	Information Management System	ALL Fries	No report required.		
95090	Mussel Bed Restoration and Monitoring in PWS and Gulf of Alaska	NOAA Babcock	Final report being drafted. Due date extended to September 30, 1996.	Babcock, M. and G. Irvine.	Final report funded under 96090.
95093	PWSAC: Restoration of Pink Salmon Resources and Services	ADFG Ferren, PWSAC	Project terminated; no report required.		
95100	Administration, Science Management and Public Information	All	No report required.		

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95102-CLO	Closeout: Murrelet Prey and Foraging Habitat in Prince William Sound	DOI (FWS) Kuletz	Project is close-out/report writing for 94102. See 94102 for status.	Kuletz, K.J., et al. 1995. Marbled murrelet foraging patterns in PWS, Alaska.	94102
95106	Subtidal Monitoring: Eelgrass Communities	ADFG Jewett, UAF	Final report being drafted; due date extended to September 30, 1996.		Final report writing funded under 96106.
95110-CLO	Closeout: Habitat Protection and Acquisition	ADNR Fries	No report required.		
95115	Sound Waste Management Plan	ADEC PWSEDC	Final report prepared (no peer review necessary); not yet at OSPIC.		
95117-BAA	Harbor Seals and EVOS: Blubber and Lipids as Indices of Food Limitation	NOAA Castellini, UAF	Final report being drafted.		
95121	Fatty Acid Signatures of Selected Forage Fish Species in PWS	NOAA Worthy, Texas A&M University	Annual report being drafted. Due date extended to July 15, 1996.		
95126	Habitat Protection and Acquisition Support	ADNR Fries	No report required.		
95126A	Carry-forward: Habitat Protection and Acquisition Support	ADNR Fries	No report required.		
95127	Tatitlek Coho Salmon Release Program	ADFG Kompkoff, Tatitlek IRA	No report required (project was NEPA only).		96127

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95131	Clam Restoration (Nanwalek, Port Graham, Tatitlek)	ADFG Brown-Schwab lenberg, CRRC	The results of this project will be presented in two reports: (1) Beach sampling report peer reviewed; not yet at OSPIC. (2) Annual report submitted to Chief Scientist April 15, 1996; under peer review.	(1) Baseline shellfish survey of tidelands near Tatitlek, Nanwalek, and Port Graham villages.	96131
95137-CLO	Closeout: Prince William Sound Salmon Stock Identification and Monitoring Studies	ADFG Fried	Project is close-out/report writing for 93068 and 94137. See 94137 for status.		93068, 94137
95138	Elders/Youth Conference	ADFG Simeone	Conference report completed and distributed to participants. Report needs to be submitted to OSPIC.		
95139	Wild Stock Supplementation Workshop	ADFG Hauser	No report required. (Summation memo prepared by Chief Scientist is on file in Anchorage Restoration Office.)		
95139A1	Carry-forward: Salmon Instream Habitat and Stock Restoration -- Little Waterfall Creek Barrier Bypass	ADFG Honnold	Annual report being drafted; due date extended to June 30, 1996.	Construction complete in field November 1995.	96139A1
95139A2	Port Dick Spawning Channel	ADFG Dudiak	No report required (project was NEPA only).		
95139B	Closeout: Otter Creek/Shrode Creek Instream Restoration	USFS Olson	Project is close-out/report writing for 94139B1 and 94139B2. See 94139B1 and 94139B2 for status.		94139B1, 94139B2
95139C1	Montague Riparian Rehabilitation	USFS Hodges	Annual report submitted to Chief Scientist May 8, 1996; under peer review.		96139C1

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95139C2	Carry-forward: Salmon Instream Habitat and Stock Restoration -- Lowe River	ADFG	No report required (project canceled).		
95163A	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species (interim funding)	NOAA Duffy (NOAA), Willette (ADFG)	NOAA: No report required. Project is funding for planning of integrated APEX/ ecosystem project. ADFG: Project is funding for close-out/report writing for 94163; see 94163 for status of annual report. A final report will also be prepared by ADFG; due date August 15, 1996.		
95163A1	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species (APEX)	NOAA Haldorson	Integrated annual report for all 95163 subprojects being drafted. Due date extended to June 15, 1996.		96163
95163B	Foraging of Seabirds (APEX)	DOI Ostrand	See 95163A1.		96163
95163C	Fish Stomach Contents Analysis (APEX)	NOAA Sturdevant	See 95163A1.		96163
95163D	Tufted Puffin Foraging and Reproductive Success (APEX)	DOI Piatt	See 95163A1.		See 96163.
95163E	Reproduction and Foraging of Black-legged Kittiwakes (APEX)	DOI (FWS) Irons	See 95163A1.		96163
95163F	Factors Affecting Recovery of PWS Pigeon Guillemot Populations (interim funding)	DOI (FWS) Hayes	Project is close-out/report writing for 94173. See 94173 for status.		94173
95163F1	Reproduction of Pigeon Guillemots Populations in PWS in Relation to Food (APEX)	DOI Hayes	See 95163A1.		96163



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95163G	Seabird Energetics (APEX)	NOAA Roby	See 95163A1.		96163
95163I	Seabird/Forage Fish Interaction: Program Management and Integration	DOI (FWS) Duffy	See 95163A1.		96163
95163J	Barren Islands Seabird Studies (APEX)	DOI Roseneau	See 95163A1.		96163
95163K	Using Predatory Fish to Sample Forage Fish (APEX)	DOI Roseneau	See 95163A1.		96163
95163L	Historic Review of Ecosystem Structure in PWS/Gulf of Alaska and Abundance/ Distribution of Forage Fish in Barren Islands (APEX)	DOI Piatt	See 95163A1.		96163
95165	PWS Herring Genetic Stock Identification	ADFG J. Seeb	Annual report peer reviewed; not yet at OSPIC.		96165
95166	Herring Natal Habitats	ADFG Carpenter, Willette	Annual report submitted to Chief Scientist April 15, 1996; under peer review.	Results indicate an improvement in the age structure among the age 3 and 4 herring to suggest the beginnings of recovery. Results are being compared with results of the herring disease study.	96166

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95191A	Investigating and Monitoring Oil Related Egg and Alevin Mortalities	ADFG J. Seeb, Bue	Results will be presented in two reports: (1) Field component: Annual report submitted to Chief Scientist April 15, 1996; under peer review. (2) Genetics component: Annual report (in form of manuscript) being drafted; due date extended to June 30, 1996.	(1) Bue, B. (2) Seeb, J.	96191A
95191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA Rice	Results of this project are included in the report being prepared under 95076. See 95076 for status.		96191B
95199-CLO	Institute of Marine Science - Seward Improvements EIS	ADFG Sundberg	No report required.	Phase I (marine) construction completed. Phase II (building) construction bidding process underway. Private financing package assembled. Awaiting bid results and bond sale to proceed to construction, scheduled for May 8, 1996.	
95244	Seal and Sea Otter Cooperative Subsistence Harvest Assistance	ADFG Fall	FY 95 findings included in annual report submitted under 94244. See 94244 for status.		94244, 96244

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ Proposer</u>	<u>Report Status</u>	<u>References and Results</u>	<u>Related Projects</u>
95255	Kenai River Sockeye Restoration	ADFG L. Seeb, Tarbox	Annual report being drafted; due date extended to June 7, 1996.	Analysis of allozyme and mtDNA data revealed a substantial amount of genetic diversity among populations, suggesting significant local adaptation. Simulations indicated that Kenai River populations can be identified in mixtures. Results are currently being used in management.	96255
95258	Sockeye Salmon Overescapement (Kenai/Kodiak)	ADFG Schmidt	Annual report submitted to Chief Scientist May 13, 1996; under peer review.		96258
95259	Restoration of Coghill Lake Sockeye	ADFG Kyle	Annual report submitted to Chief Scientist April 11, 1996; under peer review.		96259
95266	Experimental Shoreline Oil Removal	ADEC Piper	Final report (workshop proceedings) peer reviewed; returned to PI for revision April 17, 1996.		
95272	Chenega Chinook Release Program	ADFG Lindley, PWSAC	Annual report being drafted. (Not yet peer reviewed.)		96272
95279	Subsistence Restoration Project - Food Safety Testing	ADFG Miraglia	Draft final report submitted to Chief Scientist April 23, 1996; under peer review.		
95285-CLO	Closeout: Subtidal Sediment Recovery Monitoring	NOAA O'Clair	Project is funding for final report on 94285. Final report submitted to Chief Scientist May 9, 1996; under peer review.		94285

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<u>Project No.</u>	<u>Project Title</u>	<u>Lead Agency/ Proposer</u>	<u>ReportStatus</u>	<u>References and Results</u>	<u>RelatedProjects</u>
95290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance for Restoration and NRDA Environmental Samples Associated with the <i>Exxon Valdez</i> Oil Spill	NOAA Short	Results incorporated into report being prepared under ST8. See ST8 for status.		96290
95320A	Salmon Growth and Mortality	ADFG Willette	Annual report, which integrates results of all subproject, submitted to Chief Scientist May 20, 1996; under peer review.	Results indicate that predation on juvenile pink salmon by pollack and seabirds is less than had been forecast. This suggests predators may have caused significant mortality to juvenile pinks in nearshore habitats or that the pollack predation rate was underestimated if the feeding behavior or distribution of pollack was different than expected.	Integrated into 96320E FY 96.
95320B	PWS Pink Salmon Stock Identification and Monitoring (CWT)	ADFG Joyce	Annual report submitted to Chief Scientist April 23, 1996; under peer review.	Stock separation was complicated by non-standard marking rates for SEA project releases at AFK and WHN hatcheries. Also high tag loss rate at Cannery Creek hatchery biased results. In-season adjustments were made to compensate for the above mentioned biases. Solomon Gulch, Cannery Creek, wild stocks, WHN, and AFK hatcheries were the highest contributors to the PWS pink salmon return respectively.	96186

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95320C	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in PWS	ADFG Joyce	Annual report submitted to Chief Scientist April 8, 1996; under peer review.	Otolith thermal marks were applied on 100% of hatchery incubated pink salmon. The marks are distinct and blind tests have indicated that otolith lab personnel can identify hatchery fish from mixtures of hatchery and wild stocks. Preliminary results indicate a successful marking project.	96188
95320D	PWS Pink Salmon Genetics	ADFG J. & L. Seeb	Annual report (in form of manuscript) submitted to Chief Scientist May 3, 1996; under peer review.	Allozyme and mtDNA analyses showed genetic differences between upstream and tidal collections within the same streams and among regions within PWS. These results support managing and restoring pink salmon on a regional basis rather than as a single panmictic population.	96196
95320E	Juvenile Salmon and Herring Integration	ADFG Willette	See 95320A.	Movement and diet overlap for age zero pink salmon have been studied and compared.	96320
95320G	Phytoplankton and Nutrients	ADFG McRoy & Eslinger, UAF	See 95320A.	First complete data sets for the phytoplankton and nutrient cycles.	96320

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95320H	Role of Zooplankton in the PWS Ecosystem	ADFG Cooney, UAF	See 95320A.		96320
95320I	Isotope Tracers - Food Web Dependencies in PWS (Fish, Marine Mammals, and Birds)	ADFG Schell	See 95320A.		Integrated into 96170 in FY 96.
95320I(2)	Isotope Tracers - Food Webs of Fish	ADFG Kline, UAF	No report required. Project received interim funding only, before objectives were consolidated in Project 95320I.		96170
95320J	Information Systems and Model Development	ADFG Patrick, PWSSC	See 95320A.		96320
95320K	PWSAC: Experimental Fry Release	ADFG Ferren & Lindley, PWSAC	Annual report submitted to Chief Scientist March 20, 1996; under peer review.		96320
95320M	Observational Physical Oceanography in PWS and the Gulf of Alaska	ADFG Vaughn, PWSSC	See 95320A.		96320
95320N	Nearshore Fish	ADFG Thomas, PWSSC	See 95320A.		96320
95320Q	Avian Predation on Herring Spawn	USFS Bishop	Final report being drafted; due date extended to June 30, 1996.		96320Q

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95320S	Disease Impacts on PWS Herring Populations (competitive solicitation under State of Alaska two-step, RFQ-RFP process)	ADFG Hauser	Annual report submitted to Chief Scientist April 5, 1996; under peer review. (NOTE: Report addendum on plasm lgm submitted May 3, 1996.)		96162
95320T	Juvenile Herring Growth and Habitat Partitioning	ADFG Norcross	See 95320A.		96320
95320U	Somatic and Spawning Energetics of Herring/Pollock	ADFG Paul, UAF	See 95320A.		96320
95320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG Scheel, PWSSC	Draft final report submitted to Chief Scientist April 8, 1996. This component of SEA was funded for close-out/report writing only in FY 96.		96320
95417	Carry-forward: Waste Oil Disposal Facilities	ADEC	No report required (project canceled).		
95422-CLO	Closeout: Restoration Plan EIS/Record of Decision	USFS	No report required.		
95424	Restoration Reserve	All All	No report required.		

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95427	Harlequin Duck Recovery Monitoring	ADFG Rosenberg	Annual report submitted to Chief Scientist May 2, 1996; under peer review.	Males comprised a significantly greater proportion of the total population in western PWS during the first spring survey. Compared to eastern PWS, in western PWS the ratio of paired to non-paired females was significantly lower, males comprised a significantly greater proportion of the total population during the fall, a greater proportion of flightless females was observed in late July, and the influx of females was delayed. The influx of males was accelerated in eastern PWS. No broods were observed in PWS.	96427
95428-CLO	Closeout: Subsistence Planning Project	ADFG Fall	FY 95 findings included in annual report submitted under 94428. See 94428 for status.		94428
95505B	Data Analysis for Stream Habitat	USFS Olson	Final report accepted by OSPIC; available to public. Report also includes findings from 93051 and 94505.	Olson, R.A., 1995. Use of aerial photograph, channel-type interpretations to predict habitat availability in small streams, USDA, Forest Service, Chugach N.F., Anchorage, AK	93051, 94505



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96001	Recovery of Harbor Seals from EVOS: Condition and Health Status	ADFG Castellini/UAF	On file, review complete	CE on file (95001)	On file	<u>Oct - Dec:</u> DONE: Analysis and statistical study of fall blood samples DONE: Analysis of blubber water content <u>Jan - Mar:</u> Modeling of body morphometrics First collection of field samples outside of PWS <u>Apr - June:</u> Second collection of field samples outside of PWS Analysis of all blood samples <u>July - Sept:</u> Modeling of body morphometrics and blubber data, and body condition indices Second collection of field samples inside PWS
96007A	Archaeological Index Site Monitoring	ADNR Reger/ADNR	On file, review complete	CE on file	On file	<u>Oct - Mar:</u> DONE: Complete requirements for final approval of project including NEPA compliance <u>Apr - June:</u> Obtain field supplies, schedule field trips <u>July - Sept:</u> Conduct field visits to sites and preliminary reports of activities
96007B	Site Specific Archaeological Restoration	USFS Yarborough/US FS	On file, review complete	Report writing only	On file	<u>Oct - Dec:</u> DONE: Analysis of field data and specialists reports <u>April 15:</u> Final report on project 95007B due DUE DATE EXTENDED TO AUGUST 31, 1996

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 EXXON VALDEZ OIL SPILL  
 TRUSTEE COUNCIL  
 ADMINISTRATIVE RECORD

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96009D	Survey of Octopuses in Intertidal Habitats	USFS Scheel/PWSSC	On file; review complete	CE on file (95009D)	On file	NOTE: Contract written for calendar year 1996, so includes first quarter of FY 97 <u>Jan - Mar:</u> Hire personnel Arrange insurance or dive contracts UNDERWAY: Advertise and award contract vessel charters UNDERWAY: Visit new sites <u>Apr - June:</u> DONE: Report results of FY95 to subsistence users in Tatitlek and Chenega Bay Begin field work including tag-recapture and SCI sampling monthly <u>July - Sept:</u> Continue tag-and-recapture and SCUBA sampling monthly Conduct habitat sampling at multiple sites at the end of June <u>Oct-Dec:</u> Last SCUBA survey
96012A-BAA	Comprehensive Killer Whale Investigation in Prince William Sound, Alaska	NOAA Matkin/N Gulf Oceanic	On file; review complete	CE on file (95012)	On file	NOAA CONTRACT PERIOD IS 4/15/96-5/6/96; UNCLEAR HOW THIS AFFECTS SCHEDULE. <u>Jan-Mar:</u> Enter and tabulate available data <u>Apr-June:</u> Grid data, calculate sightings Examine dietary overlap <u>July-Sept:</u> Field work (monitoring) Analyze distribution of foraging behavior Estimate total predation on harbor seals Complete population separation using genetic techniques Finalize GIS/predation work

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96025	Mechanism of Impact and Potential Recovery of Nearshore Vertebrate Predators	DOI Holland-Bartels et al	On file; review complete	CE on file;EA on file for harlequins	On file	NO INFORMATION PROVIDED
96027	Kodiak Archipelago Shoreline Assessment: Monitoring Surface and Subsurface Oil	ADEC Piper/ADEC	On file; review complete	CE on file (95027)	On file	<u>Oct - Dec:</u> UNDERWAY: Draft report <u>Jan - Mar:</u> Report to general public; community meetings. <u>April 15:</u> DONE: Final report due.
96031	Development of a Productivity Index to Monitor the Reproductive Success of Marbled and Kittlitz's Murrelets in Prince William Sound, Alaska	DOI Kuletz/DOI	On file; review complete	Report writing only	On file	<u>Oct - Mar:</u> Work on report <u>May 31:</u> Draft final report due
96038	Publication of Seabird Restoration Workshop	DOI Pac Seabird Group	On file; review complete	Report writing only	On file	<u>Oct - Dec:</u> DONE: Drafts of workshop discussions submitted <u>Jan - Mar:</u> Preparation of review articles based on recommendations of workshop attendees White papers and workshop discussion papers revised by authors based on information and opinions from reviews <u>April 15:</u> DELAYED TO MID-MAY: Final report due <u>July - Sept:</u> DELAYED TO NOV. 1996: Drafts submitted to editors for publication in a book APRIL 1997: MANUSCRIPT SUBMITTED TO PUBLISHER LATE FALL 1997: PAGE PROOFS PRODUCED BY PUBLISHER

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96043B	Monitoring of Cutthroat Trout and Dolly Varden Habitat Improvement Structures	USFS Gillikin/USFS	On file; review complete	EA/FONSI on file (95043B)	On file	<u>Oct - Dec:</u> UNDERWAY: Report on preliminary finds of population and distribution estimations. NOTE: Preliminary results indicate population estimates may not be determined with present data. <u>July - Sept:</u> Inspect and measure effects of installed structures Conduct population estimates
96048-BAA	Historical Analysis of Sockeye Salmon Growth Among Populations Affected by Overescapement in 1989	NOAA Ruggerone/NR C, Inc.	On file; review complete	CE on file	On file	PER NOAA CONTRACT: <u>Oct 1997</u> Collect and press scales Age scales and select scales for measurement <u>Nov 1997</u> Measure scales <u>Feb 1998</u> Analyze data <u>Mar 1998</u> Prepare final report
96052	Community Involvement & Use of Traditional Knowledge	ADFG/Miraglia Brown/Chugach hRRC	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> DONE: ADFG and CRRC enter into contract for coordination of facilitator network DONE: MOU drafted between ADFG and CRRC DONE: Spill Area Wide Coordinator hired DRAFT DONE: Guidelines/protocols developed for TEK Identification of injured species for TEK <u>Jan-Mar:</u> DONE: Facilitator network in place and operating Begin work on TEK database DONE: Training workshop for local community facilitators <u>Apr-June:</u> Training workshop for local community facilitators

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96064	Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound	ADFG Frost/ADFG	On file; review complete	CE on file (95064)	On file	<u>Oct - Dec:</u> DONE: Retrieve ARGOS data DONE: Analysis of fatty acid samples and aerial survey data DONE: Analysis of genetic samples DONE: Meet with hunters about study results, distribute newsletter DONE: Meet with SWFSC regarding genetics analyses <u>Jan - Mar:</u> DONE: Order SLTDRs for field season DONE: Coordination meeting with other ADFG harbor seal projects DONE: Arrange logistics (boats, airplanes, equipment, contracts, supplies) DONE: Reserve ARGOS satellite channels <u>Apr - June:</u> Field work to catch seals and collect sample <u>July - Sept:</u> Analysis of fatty acid samples Conduct aerial surveys during molting <u>Oct-Dec:</u> DONE: Analyze field data <u>Apr-June:</u> Complete data analysis <u>June 15:</u> Submit final report
96074	Herring Reproductive Impairment	NOAA Rice & Carls/NOAA	On file; review complete	CE on file (95074)	On file	<u>Oct-Dec:</u> DONE: Analyze field data <u>Apr-June:</u> Complete data analysis <u>June 15:</u> Submit final report
96076	Effects of Oiled Incubation Substrate on Straying and Survival of Wild Pink Salmon	NOAA Wertheimer/NOAA	On file; review complete	CE on file (95076)	On file	<u>Oct-Mar:</u> NO ACTIVITIES SCHEDULED THIS QUARTER. <u>Apr-June:</u> UNDERWAY: Oil exposure of 1995 brood embryos UNDERWAY: Marking of 1995 brood fry <u>July-Sept:</u> Spawning of 1997 brood adults

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96086	Herring Bay Monitoring and Restoration Studies	ADFG Highsmith/UAF	On file; review complete	Report writing only	On file	<u>Oct - Mar:</u> UNDERWAY: Lab analysis, data analysis <u>April 15:</u> DELAYED TO AUGUST 15: Final report (on 95086C) due
96090	Mussel Bed Restoration and Monitoring	NOAA Babcock/NOA A & Irvine/DOI	On file; review complete	Report writing only	On file	<u>Oct - Mar:</u> ONGOING: Chemical analyses conducted <u>September 30:</u> Final report due
96101	Removal of Introduced Foxes From Islands	DOI Ebbert/DOI	On file; review complete	Report writing only	On file	<u>Apr 15:</u> DONE: Submit final report (on 95041)
96106	Subtidal Monitoring: Eelgrass Communities	ADFG Jewett/UAF	On file; review complete	Report writing only	On file	<u>Oct - Mar:</u> UNDERWAY: Process benthic, sediment, and hydrocarbon samples Data entry and analyses <u>May 30:</u> DELAYED TO 9/30/96: Final report due
96115	Sound Waste Management Plan	ADEC Roetman/PWS EDC	On file; review complete	Report writing only	On file	<u>Oct-Dec:</u> DONE: Draft report <u>Jan:</u> DONE: PWSEDC report to the Prince William Sound communities recommending solutions for solid waste and marine pollution.
96127	Tatitlek Coho Salmon Release	ADFG/Moore Kompkoff/Tatit lek IRA	On file; review complete	EA/FONSI on file (95127)	On file	<u>Oct - Dec:</u> DONE: Prepare contract with Tatitlek IRA through PWS Economic Development Council <u>Jan - March:</u> UNDERWAY: Incubate eggs for 1997 release UNDERWAY: Rear smolts for 1996 release <u>Apr - June:</u> Transport smolt to Boulder Bay and place in net pens Release smolt into Boulder Bay <u>July - Sept:</u> Egg take

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96131	Chugach Native Region Clam Restoration	ADFG/Moore Brown/Chugach hRRC	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan-Mar:</u> UNDERWAY: Obtain permits and construct and install tidal FLUPSY at Tatitlek Obtain permits and initiate predator control studies on razor clam beaches near Eyak Obtain permits and initiate beach seeding experiments in Tatitlek and Port Graham/Nanwalek <u>Apr-June:</u> Collect broodstock Obtain clearance and transport to hatchery Transfer 5mm seed to hatchery nursery and FLUPSY <u>July-Sept:</u> Conduct baseline shellfish surveys of tidelands near Ouzinkie and Chenega Bay
96139A1	Salmon Instream Habitat and Stock Restoration - Little Waterfall Barrier Bypass Improvement	ADFG Honold/ADFG	On file; review complete	CE on file (94139A1)	On file	<u>Oct - Dec:</u> DONE: Project construction and oversight <u>Jan - Mar:</u> DONE: Egg-to-fry survival sampling <u>Apr - June:</u> Juvenile coho abundance sampling <u>July - Sept:</u> Spawner abundance and distribution surveys
96139A2	Spawning Channel Construction Project Port Dick Creek, Lower Cook Inlet	ADFG Dudiak/ADFG	On file; review complete	EA/FONSI on file	On file	<u>Oct - Mar:</u> DONE: Continue groundwater fluctuation measurements DONE: Complete environmental assessment DONE: Develop engineers drawings DONE: Complete permit requirements <u>Apr - June:</u> Receive and award bid package Complete the construction of the channel <u>July - Sept:</u> Conduct stream side egg takes

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96139C1	Montague Riparian Rehabilitation Monitoring Program	USFS Hodges/USFS	On file; review complete	CE on file (12/4/92)	On file	<u>April - June:</u> Monitor structures at low flow Map stream channels at structures and areas downstream Assess use of fish habitat and vegetation
96142-BAA	Status and Ecology of Kittlitz's Murrelet in Prince William Sound	NOAA ABR, Inc.	On file; review complete	CE on file	On file	NOAA CONTRACT PERIOD IS 4/4/96-12/31/97; UNCLEAR HOW SCHEDULE HAS CHANGED <u>Jan - Mar:</u> Arrange logistics <u>Apr - June:</u> Conduct early summer cruise <u>July - Sept:</u> Conduct late summer cruise Analyze stomach contents Key punch data and QA/QC Digitize data, measure geographic data, QA/QC
96144	Common Murre Population Monitoring	DOI Roseneau/DOI	On file	CE on file	On file	<u>Apr-June:</u> Vessel contract and seasonal employee hire Coordinate logistics with 96163K Check/repair equipment Update census plot booklets Purchase supplies <u>July-Sept:</u> Data collection - Barren Islands Data entry



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96145	Cutthroat Trout and Dolly Varden: the Relation Among and Within Populations of Anadromous and Resident Forms	USFS Reeves/PacNW Research Lab	On file; review complete	CE on file	On file	<u>Oct - Dec:</u> Develop cooperative agreement with OSU UNDERWAY: Secure appropriate collecting permits Obtain samples of Dolly Varden and cutthroat trout for analysis Hire technician for genetic analysis DONE: Hire field technician (Kitty Griswold) <u>Jan - Mar:</u> Complete genetic screening Select field sites Secure contract vessel Assemble required field gear and ship to Cordova <u>Apr - June:</u> Contract with people (2) or field work Begin analysis <u>July - Sept:</u> Collect samples of Dolly Varden at field sites Initial analysis of genetic data on cutthroat trout
96149	Archaeological Site Stewardship	ADNR Reger/ADNR	On file; review complete	CE on file	On file	<u>Oct - Dec:</u> DONE: NEPA compliance DONE: Preliminary site selection UNDERWAY: Preliminary steward selection <u>Jan - June:</u> Training documentation provided to stewards UNDERWAY: Site selection finalized UNDERWAY: Sites visited and site documentation finalized <u>July - Sept:</u> Monitoring reports from stewards to coordinators due for compilation

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96154	Comprehensive Community Plan for Restoration of Archaeological Resources in PWS and Lower Cook Inlet	USFS Johnson/CHF	On file; review complete	CE on file	On file	<u>Oct - Dec:</u> UNDERWAY: Organize working group, assess facility needs, evaluate alternatives, assess training needs <u>Jan - Mar:</u> Assess field reports DONE: Community review conference POSTPONED TO 5/15/96: Submit draft plan to Executive Director 3/14/96 <u>Apr - June:</u> Public meetings <u>July - Sept:</u> Submit revised plan to Executive Director 7/15/96 Present plan to Trustee Council 8/15/96 Submit final plan and project reports 9/30/96
96159	Surveys to Monitor Marine Bird Abundance In Prince William Sound During Winter and Summer 1996	DOI Agler/DOI	On file; review complete	CE on file	On file	NO UPDATE INFORMATION PROVIDED <u>Oct-Dec:</u> Arrange logistics <u>Jan-Mar:</u> Hire and train personnel Conduct winter survey in PWS <u>Apr-June:</u> Enter data Arrange logistics for summersurvey <u>Jul-Sept:</u> Conduct summer survey in PWS Analyze data
96161	Differentiation and Interchange of Harlequin Duck Populations Within N. Pacific Region	DOI Goatcher/DOI	Spies request revised DPD 3/7/96	CE on file		NO ACTIVITIES SCHEDULED THIS QUARTER <u>April - June:</u> Procure equipment and supplies Procure vessels <u>July-Sept:</u> Harlequin duck capture, sample collection, banding

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96162	Investigations of Disease Factors Affecting Declines of Pacific Herring Populations in Prince William Sound, AK	ADFG UW/Kocan UCS/Marty SFU/Kennedy	On file; review complete	CE on file (95320S)	On file	<u>Oct - Dec:</u> DONE: Culture herring larvae and determine their SPF status UNDERWAY: Collect data on growth, survival, disease susceptibility Improve husbandry techniques UNDERWAY: Begin viral and fungal exposures <u>Jan - June:</u> Continue or begin infectivity studies with VHSV and <i>I. hoeri</i> Begin new year of SPF fish from eggs for future studies. Re-isolate organisms and verify that monoxenic infections were produced UNDERWAY: Begin blood chemistry on infected fish and physiological studies <u>July - Sept:</u> Collect 0-age herring for stress exposures technique development Analyze data Begin immune suppression studies on experimental NO SCHEDULE INCLUDED IN DPD.
96163A	Abundance and Distribution of Forage Fish and their Influence on Recovery of Injured Species	NOAA Haldorson/NOAA	On file; review complete	CE on file	On file	
96163B	Foraging of Seabirds	DOI Ostrand/DOI	See 96163A.	CE on file	On file	<u>Jan - June:</u> Logistics planning Coordinate with SEA's herring study for data collection <u>July - Sept:</u> Forage fish cruises <u>Oct - Dec:</u> Data evaluation

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96163C	Fish Diet Overlap Using Fish Stomach Content Analysis	NOAA Sturdevant/NOAA	See 96163A.	CE on file	On file	<u>April - June:</u> Complete processing of 1995 samples Purchase sampling supplies for 1996 <u>July - Sept:</u> Field season Process 1996 diet samples
96163D	Distribution of Forage Fish as Indicated by Puffin Diet Sampling	DOI Piatt/DOI	See 96163A.	Report writing only	On file	<u>April 15:</u> DONE: Submit final report (95163D)
96163E	Black-legged Kittiwakes as Indicators of Forage Fish Availability	DOI Irons/DOI	See 96163A	CE on file	On file	<u>April - June:</u> Prepare for field season Begin field work <u>July - Sept:</u> Complete field work Analyze data
96163F	Factors Affecting Recovery of Pigeon Guillemot Populations	DOI Hayes/DOI	See 96163A	CE on file	On file	<u>April - June:</u> Prepare for field season Begin field work <u>July - Sept:</u> Complete field work Begin data analysis
96163G	Diet Composition, Reproductive Energetics, and Productivity of Seabirds	NOAA Roby/OSU	See 96163A.	CE on file	On file	NOAA CONTRACT PERIOD IS 5/1/96-4/30/97
96163I	APEX Planning and Project Leader	DOI Duffy	See 96163A.	N/A	On file	Not applicable.
96163J	Barren Islands Seabird Studies	DOI Roseneau/DOI	See 96163A.	CE on file	On file	<u>April - June:</u> Finalize logistical needs Set up camp at East Amatuli Island Begin data collection <u>July - Sept:</u> Data collection Begin data analysis
96163K	Using Predatory Fish to Sample Forage Fish	DOI Roseneau/DOI	See 96163A.	Report writing only	On file	<u>April 15:</u> DONE: Submit final report (95163K)

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96163L	Historical Review of Ecosystem Structure in the PWS/GOA Complex	DOI Piatt/DOI	See 96163A.	CE on file	On file	<u>April - June:</u> Decide on common format for combined database Produce comma-delimited data tables Begin exploratory data analysis and structuring of data for GIS work <u>July - Sept:</u> Continue data analysis
96163M	Lower Cook Inlet Study	DOI Piatt/DOI	See 96163A.	CE on file	On file	<u>April - June:</u> Initiate hydroacoustic and seabird surveys in Kachemak Bay Trawl sampling Set up field camps Colony censusing and plot monitoring <u>July-Sept:</u> Initiate pilot studies using radio telemetry Trawling and hydroacoustic surveys in lower Cook Inlet Initiate colony observations on chick feeding and adult attendance Remove field camps
96163N	Black-legged Kittiwake Feeding Experiment	DOI Romano/DOI	See 96163A.	CE on file	On file	<u>April - June:</u> Begin catching fish for food during captive feeding trials Mark accessible nests to obtain chicks for capture <u>July - Sept:</u> Continue feeding experiment
96163O	Statistical Review	DOI McDonald/Western Ecosystem	See 96163A.	N/A	On file	<u>April - June:</u> Continue spatial analysis of 1996 acoustic survey data Develop sampling plans
96163P	Sand Lance Hydrocarbon Exposure	NOAA Anderson/NOAA	See 96163A.	CE on file	On file	<u>April - June:</u> Search for sand lance sites <u>July - Sept:</u> Ship fish samples to Kelso, WA for extraction Send selected extracts to Auke Bay lab

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96165	Genetic Discrimination of Prince William Sound Herring Populations	ADFG J. Seeb/ADFG	On file; review complete	CE on file (95165)	On file	<u>Oct - Dec:</u> UNDERWAY: Laboratory analysis <u>Jan - Mar:</u> UNDERWAY: Evaluate lab results DONE: Collect herring from Sitka Sound <u>Apr - June:</u> UNDERWAY: Collect samples of early spawning herring in PWS UNDERWAY: Plan for collection in PWS, Kodiak, Togiak Bay, and Norton Sound Begin laboratory analysis <u>July - Sept:</u> Laboratory analysis
96166	Herring Natal Habitats	ADFG Carpenter & Willette/ADFG	On file; review complete	CE on file (95166)	On file	<u>Jan - Mar:</u> DONE: Biomass estimates <u>Apr - June:</u> DONE: Conduct acoustic survey DONE: Collect AWL, fecundity, disease, genetic stock ID, and bioenergetics samples DONE: Initiate dive surveys DONE: Assist reproductive impairment sample collection Lab processing of diver samples <u>July - Sept:</u> Finalize estimate of spawning
96170	Isotope Ratio Studies of Marine Mammals in Prince William Sound	ADFG Schell/UAF	On file; review complete	CE on file (9532012)	On file	<u>Oct - Mar:</u> UNDERWAY: Analyze isotope ratio samples collected in 1994 - 1995 UNDERWAY: Captive animal experiments <u>Apr - Sept:</u> Field work and sampling, captive animal experiments Analysis of samples

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96180	Kenai Habitat Restoration & Recreation Enhancement Project	ADNR Fries/ADNR	On file; review complete	Not needed till sites selected	On file (just site select)	<u>Oct - Mar:</u> DONE: Review existing data on Kenai River DONE: Develop implementation strategy DONE: Develop site evaluation, ranking and prioritization system DONE: Conduct preconstruction site surveys DONE (DRAFT): Develop design plans Apply for permits UNDERWAY: Conduct public scoping meetings and prepare environmental compliance documents Organize volunteer support <u>Apr - June:</u> Secure construction permits Conduct construction work on first priority sites <u>July - Sept:</u> Monitor revegetation sites Monitor public use of completed project and proposed sites for next year
96186	Coded Wire Tag Recoveries From Pink Salmon in Prince William Sound	ADFG Joyce/ADFG	On file; review complete	CE on file (95320B)	On file	<u>Oct - Dec:</u> DONE: Order supplies; create and test computer programs <u>Apr - June:</u> UNDERWAY: Hire personnel UNDERWAY: Apply tags to pink salmon fry at hatcheries <u>July - Sept:</u> Scan catches; recover tagged fish Decode tags Provide inseason catch composition estimates

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96188	Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon in Prince William Sound	ADFG Joyce/ADFG	On file; review complete	CE on file (95320C)	On file	<u>Oct - Dec:</u> DONE: Apply thermal marks to embryos at four pink salmon hatcheries <u>Jan - Mar:</u> DONE: Collect samples from incubators <u>Apr - June:</u> UNDERWAY: Process and evaluate otoliths <u>July - Sept:</u> Analyze data
96190	Construction of a Linkage Map for the Pink Salmon Genome	ADFG Allendorf/UM	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan-Mar:</u> UNDERWAY: Initial screen of odd- and even-year fish for DNA polymorphisms <u>July-Sept:</u> Screen DNA polymorphisms to test for Mendelian inheritance and joint segregation Obtain gametes and create families for inheritance studies with even-year fish
96191A	Oil-Related Embryo Mortalities in PWS Pink Salmon Populations	ADFG J. Seeb/ADFG	On file; review complete	CE on file (95191A)	On file	<u>Oct - Dec:</u> DONE: Embryo deposition sampling DONE: Initiate haploid androgenesis and novel mutation screen contracts DONE: Obtain gametes, spawn second generation DONE: Send milt to University of Washington on contract to produce androgenetic haploids DONE: Begin fertilized egg incubation UNDERWAY: Analysis of embryos at ADFG genetics laboratory <u>Jan - Mar:</u> UNDERWAY: Analyze data for brood year 1995
96191B	Injury to Salmon Eggs and Pre-emergent Fry Incubated in Oiled Gravel (Laboratory Study)	NOAA Rice/NOAA	On file; review complete	CE on file (95191B)	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr-June:</u> ONGOING: Final evaluation of progeny



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96195	Pristane Monitoring in Mussels and Predators of Juvenile Pink Salmon & Herring	NOAA Short/NOAA	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan - Mar:</u> Prepare logistics for FY96 field season <u>April - June:</u> DONE: Spring collection <u>July - Sept:</u> Collect mussel and predator tissue samples Analyze collected samples for pristane
96196	Genetic Structure of Prince William Sound Pink Salmon	ADFG J. & L. Seeb/ADFG	On file; review complete	CE on file (95320D)	On file	<u>Jan - Sept:</u> UNDERWAY: In-house allozyme analysis of archive samples collected prior to 1995 UNDERWAY: mtDNA analysis <u>July - Sept:</u> Field collections of 1996 samples
96210	Prince William Sound Youth Area Watch	ADFG Chugach RRC	On file; review complete	CE on file	On file	<u>Oct - Dec:</u> DONE: Students selected to participate DONE: Students receive training DONE: Students select onshore research and testing sites DONE: Students select offshore sites DONE: Students set up database <u>Ongoing:</u> Students check onshore testing sites twice weekly Students check offshore area testing sites twice monthly Students provide data to PWSSC weekly

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96214	Documentary on Subsistence Harbor Seal Hunting in PWS	ADFG Tatitlek Village	On file; review complete	CE on file	On file	<u>Oct - Dec:</u> DONE: Award contract <u>Jan - Mar:</u> DONE: Develop story line and story board for video <u>Apr - June:</u> UNDERWAY: Shoot necessary footage, conduct interviews <u>July - Sept:</u> Edit film Contractor will deliver 40 copies of videos
96220	Eastern PWS Wildstock Salmon Habitat Restoration	USFS/Schmid Eyak Native Village	On file; review complete	Project is EA prep. only	On file	<u>Oct - Mar:</u> Review of existing information DONE: Recruit fish habitat survey crew leader <u>Apr - June:</u> DONE: Identify study streams UNDERWAY: Recruit student interns UNDERWAY: Arrange logistics <u>July - Sept:</u> Conduct fisheries habitat surveys Analysis of field data
96222	Chenega Bay Salmon Restoration -- Anderson Creek	USFS/Murphy Chenega IRA	On file; review complete	Project is EA prep only	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> Interview Chenega Bay residents about Anderson Creek <u>July - Sept:</u> Complete habitat surveys Complete project EA and preliminary fish pass de:
96225	Port Graham Pink Salmon Subsistence Project	ADFG/Moore Port Graham	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> 250,000 pink salmon fry placed in net pens and reared to an average weight of 8 grams <u>July - Sept:</u> Monitor pink salmon escapement into Port Graham Capture hatchery broodstock Egg take

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96244	Community-Based Harbor Seal Management and Biological Sampling	ADFG/Fall Reidel/ANHSC Fall/ADFG	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> DONE: Develop contracts with the Alaska Native Harbor Seal Commission and the University of Alaska, hire technicians DONE: Hold regional training sessions for biological sampling DONE: Begin biological sample collection DONE: Hold first workshop (ANHSC) <u>Jan-Mar:</u> Distribute first proceedings report <u>Apr-June:</u> DONE: Demonstrate traditional knowledge database (ADFG) <u>July - Sept:</u> Hold second workshop (ANHSC) Produce/distribute second proceedings report (ANHSC) <u>Ongoing:</u> Conduct interviews with hunters to collect traditional knowledge (ADFG)
96255	Kenai River Sockeye Salmon Restoration	ADFG L. Seeb & Tarbox/ADFG	On file; review complete	CE on file (95255)	On file	<u>Oct - Dec:</u> DONE: Lab analysis of 1995 allozyme samples DONE: Lab analysis of DNA samples DONE: Award contracts for DNA analysis <u>Jan-Sept:</u> UNDERWAY: Refine fishery model Fishery sample collection and in-season estimation Hydroacoustic assessment
96256	Columbia and Solf Lakes Sockeye Salmon Stocking	USFS Murphy	On file; review complete	Project is EA prep. only	On file	<u>Oct - Dec:</u> Review by Regional Planning Team <u>July - Sept:</u> Analyze stream flows and update baseline limnological data
96258A	Sockeye Salmon Overescapement Project	ADFG Schmidt & Tarbox/ADFG	On file; review complete	CE on file (95258A)	On file	<u>Jan - Mar:</u> DONE: Analyze zooplankton, water quality, and hydroacoustic data

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96259	Restoration of Coghill Lake Sockeye Salmon	ADFG Kyle/ADFG	On file; review complete	EA/FONSI on file (94259)	On file	<u>Jan - Mar:</u> DONE: Personnel and logistics for field season DONE: Contact USFS regarding purchase and application of fertilizer
96272	Chenega Chinook Release Program	ADFG PWSAC	On file; review complete	EA/FONSI on file (94272)	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Apr - June:</u> Install netpen at Crab Bay Feed and imprint smolts <u>July - Sept:</u> Take chinook eggs for incubation
96290	Hydrocarbon Data Analysis, Interpretation, and Database Maintenance	NOAA Short/NOAA	On file; review complete	CE on file (95290)	On file	<u>Oct-Dec:</u> NO ACTIVITIES SCHEDULED THIS QUARTER <u>Jan - Sept:</u> UNDERWAY: Solicit information from potential new user groups and begin development of interface for such groups
96320E	Salmon and Herring Predation	ADFG Willette	Review complete	CE on file	On file	<u>Oct-Dec:</u> DONE: Field sampling DONE: Sample processing and data entry <u>Apr-June:</u> UNDERWAY: Field sampling in May Field sampling in June <u>July-Sept:</u> Field sampling in July
96320G	Phytoplankton and Nutrients	ADFG McRoy/UAF	On file; review complete	CE on file	On file	<u>Oct-Mar:</u> UNDERWAY: Planning for field season <u>April - June:</u> Field work <u>July - Sept:</u> Analyze samples

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96320H	Zooplankton in the PWS Ecosystem	ADFG Cooney/UAF	On file; review complete	CE on file	On file	<u>Oct-Mar:</u> UNDERWAY: Planning for field season
96320I	Isotope Tracers - Food Webs of Fish	NOAA PWSSC	On file; review complete	CE on file	On file	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Apr. 15, 1997:</u> Report due
96320J	Information Systems and Model Development	NOAA PWSSC	Review complete	CE on file	On file	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Apr 15:</u> Report due
96320K	PWSAC: Experimental Fry Release	ADFG PWSAC	Review complete	EA/FONSI on file (95320K)	On file	<u>Oct-Dec:</u> DONE: Eggs taken and incubating <u>Jan - Mar:</u> UNDERWAY: Pink fry ponded and reared
96320M	Physical Oceanography in PWS	NOAA Salmon, PWSSC	On file; review complete	CE on file	On file	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Jan - Mar:</u> UNDERWAY: Process data from March cruise UNDERWAY: Plan data collection for April cruise <u>Apr 15, 1997:</u> Report due
96320N	Nekton/Plankton Acoustics	NOAA PWSSC	On file; review complete	CE on file	On file	NOAA CONTRACT PERIOD IS 2/1/96-1/31/97 <u>Jan - Mar:</u> DONE: Field measure spring herring distribution <u>Apr 15, 1997:</u> Report due
96320Q	Avian Predation on Herring Spawn	USFS Bishop/USFS	Review complete	CE on file (95320Q)	On file	<u>Oct-Dec:</u> UNDERWAY: Data analysis <u>June 30:</u> Submit final report

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96320R	SEA Trophodynamic Modeling and Validation Through Remote Sensing	ADFG Eslinger/UAF	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> Planning for field season <u>Jan - Mar:</u> DONE: Deploy CLAB buoy UNDERWAY: Determine utility of remotely sensed data for monitoring flow into (vs. by) PWS UNDERWAY: Compare AVHRR and CTD data Define 3-D model grid DONE: Test physical/phytoplankton coupling with model DONE: Test phytoplankton/zooplankton coupling with model <u>April - June:</u> UNDERWAY: Build 3-D biophysical model code
96320T	Juvenile Herring Growth and Habitat Partitioning	ADFG Norcross/ UAF	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> DONE: Develop conceptual herring recruitment mode DONE: Stomach analysis UNDERWAY: Analyze broadscale horizontal distribution data UNDERWAY: Compile companion datasets for habitat analysis <u>Jan - Mar:</u> DONE: Broadscale cruise; acoustics and net sampling DONE: Catch database UNDERWAY: Historic interviews with fishermen and Native communities

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96320U	Energetics of Herring and Pollock	ADFG Paul/UAF	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> DONE: Process bioenergetic samples collected fall 1995 <u>Apr-June:</u> DONE: Complete sample analysis of 1995 samples UNDERWAY: Process bioenergetic samples collected spring 1996 <u>July - Sept:</u> Complete analysis of spring 1996 samples Analyze summer samples
96320Y	Variation in Local Predation Rates on Hatchery-Released Fry	ADFG PWSSC	Review complete	N/A (report writing only)	On file	<u>Apr 15:</u> DONE: Report due
96320Z1	Synthesis and Integration	ADFG Cooney/UAF	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> DONE: Develop model-based structures <u>Jan - Mar:</u> UNDERWAY: Develop synthesis plans for FY97
96427	Harlequin Duck Recovery Monitoring	ADFG Rosenberg/AD FG	On file; review complete	CE on file	On file	<u>Oct-Dec:</u> DONE: Apply for USFS permits <u>Jan - Mar:</u> DONE: Initiate hiring process for seasonal technician <u>Apr - June:</u> UNDERWAY: Hire technicians, arrange field logistic for field camps, boats, motors, survey equipment Begin surveys <u>July - Sept:</u> End Surveys <u>Oct - Dec:</u> Analyze field data and begin report preparation

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96507	EVOS Symposium Publication	NOAA Wright/NOAA	On file; review complete	Report writing only	On file	<u>Oct - Dec:</u> DONE: Manuscripts to project editor <u>Jan - Mar:</u> DONE: Manuscripts to typesetter DONE: Proof to authors UNDERWAY: Corrected proof to typesetter <u>Apr - June:</u> Text to printer Proceedings published