



FILE
RPWG
L

OIL SPILL RESTORATION PLANNING OFFICE

437 E Street, Suite 301 Anchorage, Alaska 99501
(907) 271-2461 FAX: (907) 271-2467

MEMORANDUM

DATE: June 3, 1991
TO: Management Team
FROM: Restoration Planning Work Group
SUBJECT: Final Report - 1990 Restoration Feasibility Study No. 5

Here is a copy of the draft final report on the 1990 Restoration Feasibility Study Number 5 - Land Status, Uses, and Management Plans in Relation to Natural Resources and Services prepared by the Alaska Department of Natural Resources. This document identifies and describes existing data bases and sources of information of potential relevance to habitat protection in the Exxon Valdez restoration program. If you or your staff have suggestions for additional materials, please advise Art Weiner, DNR, at 762-2515. This document will be updated as appropriate and necessary.

cc: RPWG members

Enclosure



OIL SPILL RESTORATION PLANNING OFFICE

437 E Street, Suite 301 Anchorage, Alaska 99501
(907) 271-2461 FAX: (907) 271-2467

COPY

MEMORANDUM

DATE: June 3, 1991
TO: Management Team
FROM: Restoration Planning Work Group
SUBJECT: Final Report - 1990 Restoration Feasibility Study No. 5

Here is a copy of the draft final report on the 1990 Restoration Feasibility Study Number 5 - Land Status, Uses, and Management Plans in Relation to Natural Resources and Services prepared by the Alaska Department of Natural Resources. This document identifies and describes existing data bases and sources of information of potential relevance to habitat protection in the Exxon Valdez restoration program. If you or your staff have suggestions for additional materials, please advise Art Weiner, DNR, at 762-2515. This document will be updated as appropriate and necessary.

cc: RPWG members

Enclosure

**Identification and Recordation
of
Information Sources
Relevant to Land and Resources
Affected by the Exxon Valdez Oil Spill**

Restoration Feasibility Study Number 5

Prepared For:
The Trustee Council

Prepared By:
Alaska Department of Natural Resources
Division of Land and Water
Oil Spill Project Office
March, 1991

Arthur H. Weiner
Leigh A. Carlson

Technical Assistance
Carol A. Fries



Table of Contents

Introduction	i
Objectives	i
Method	ii
Document Types	iii
Source Locations	iv
Data	
Fish and Wildlife	1
Land Use/Status	13
Management Plan	27
Natural Resources	42
Oil Spill	54
Reference	149

INTRODUCTION

Restoration planning and implementation projects proposed to enhance and accelerate the recovery of areas affected by the Exxon Valdez oil spill require information on natural resources and land status. Currently proposed projects include: salmonid habitat rehabilitation, avian habitat identification and protection, critical habitat identification for marine mammals, cultural resource protection and restoration, protection of strategic fish and wildlife habitats, acquisition of public access buffer zones along anadromous streams, and establishment of public recreation areas. In addition to fee simple title acquisition, several projects anticipate establishment of conservation easements or acquisition of development or timber rights. These projects, as well as those projected for the future, will need information on: land status, existing and proposed uses of both public and private lands, natural and cultural resource inventories, existing infrastructure, management plans, etc.

Much of the information needed to facilitate these projects is already available as part of the public record or is currently being produced as part of Natural Resource Damage Assessment studies. The fact that these data sets are readily available is not widely known. The sources for this information are, however, disparate. It is therefore necessary, as part of the restoration process, to identify this existing information, locate its source, determine its availability and evaluate its relevance within the specific restoration context for which it is required.

OBJECTIVES

Identify the sources and locations of maps, management plans, and other resource documents that depict upland, tideland, and offshore status of lands and public resources, land use patterns, gross ownership, existing and proposed uses, vegetation, fish and wildlife populations, habitats and sensitive areas, recreational values, timber resources, and cultural resources.

Evaluate these identified sources for their usefulness in identifying restoration sites and appropriate studies.

Produce a selected bibliography of reports, maps, scientific literature, management plans and studies that are relevant to the restoration process.

METHOD

Federal and state resource and regulatory agencies, private and public libraries and other document repositories were surveyed. The survey strategy was to locate those documents that described the affected area and its resources and would have relevance to restoration project design and implementation. The geographic extent of the affected area was defined to include those areas of Prince William Sound and the Gulf of Alaska that were impacted by the spill as well as adjacent uplands. The choice of documents that are *relevant to restoration* was a subjective determination. Highly specific studies such as biochemical analysis of pink salmon enzyme systems or geological surveys of ore deposits were not included.

Each citation included in this report is broken down into the following components:

- Document type
- Title
- Author
- Publication
- Publication Date
- Source
- Abstract

A listing of the document types is found in Table 1 along with the category within which it is grouped in this report. A source for each report is provided as part of the citation. A composite listing of these sources is found in Table 3.

Table 1

Document Types

<u>Document Types</u>	<u>Category</u>
Bibliographies	Reference
Climatic Atlas	Reference
Coastal Study	Natural Resources
Community Reports	Land Use/Status
Cultural Resource Reports and Studies	Natural Resources
Damage Assessment/Restoration Reports	Oil Spill
Database Directory	Reference
Environmental Atlas	Natural Resources
Environmental Studies	Natural Resources
Fish and Wildlife Maps	Fish and Wildlife
Fish and Wildlife Reports	Fish and Wildlife
Forestry Reports	Natural Resources
General Reference Documents	Reference
Geological Reports	Natural Resources
Hatcheries	Fish and Wildlife
Infrastructure Reports	Land Use/Status
Land Status Databases	Land Use/Status
Land Systems Inventory	Land Use/Status
Management Plans	Management Plan
Mariculture	Fish and Wildlife
Marine Facilities	Land Use/Status
Mineral Resources Reports	Natural Resources
Oil Impact Maps	Oil Spill
Oil Spill Directory	Oil Spill
Oil Spill Report	Oil Spill
OSPIC Collection	Reference
Outer Continental Shelf Study	Natural Resources
Recreation Guides	Natural Resources
Recreation Reports and Studies	Natural Resources
Soils/Vegetation Reports	Natural Resources
Spill Prevention Plans and Reports	Oil Spill
State Land Selections	Land Use/Status
Transportation Studies	Land Use/Status
Wilderness Areas	Land Use/Status

Table 2

Document Types		
<u>Document Category</u>	<u>Document Type</u>	<u>Page #</u>
Fish and Wildlife	Fish and Wildlife Maps	1
	Fish and Wildlife Reports	3
	Hatcheries	10
	Mariculture	11
	Mariculture Leases/Permits	12
Land Use/Status	Community Report	13
	Infrastructure Report	14
	Land Status	14
	Land Status Records	17
	Land Systems Inventory	18
	Marine Facilities	19
	State Land Selections	21
	Transportation Study	21
Management Plan	Wilderness Areas	25
	Management Plan	27
	Management Plan (Coastal)	27
	Management Plan (Community)	29
	Management Plan (Federal)	33
	Management Plan (State)	36
	Management Plan (Wildlife Refuge)	39
Natural Resources	Management Plan (Recreation)	40
	Coastal Study	42
	Cultural Resource Reports & Studies	42
	Environmental Atlas	46
	Environmental Study	46
	Forestry	46
	Geological Reports	48
	Mineral Resources	48
	Outer Continental Shelf Study	49
	Recreation Guide	50
	Recreation Reports and Studies	50
	Soils/Vegetation	52

Table 2 (continued)

Document Types

<u>Document Category</u>	<u>Document Type</u>	<u>Page #</u>
Oil Spill	Damage Assessment	54
	Damage Assessment/Air/Water	55
	Damage Assessment/Archaeology	61
	Damage Assessment/Bird	62
	Damage Assessment/Coastal Habitat	72
	Damage Assessment/Economics	74
	Damage Assessment/Fish/Shellfish	80
	Damage Assessment/Marine Mammal.....	112
	Damage Assessment/Restoration	122
	Damage Assessment/Subtidal	124
	Damage Assessment/Technical Services	130
	Damage Assessment/Terrestrial Mammals.....	132
	Database	137
	Oil Spill Directory	137
	Oil Spill Maps.....	138
	Oil Spill Reports	140
	Restoration	141
	Spill Prevention.....	147
Reference	Bibliography	149
	Climatic Atlas	150
	Database Directory	151
	General Reference	151

Sources

ADEC	Alaska Dept of Environmental Conservation Oil Spill Response Center 4241 B Street, Suite 304 Anchorage AK 99502 (907) 563-1126
ADF&G	Alaska Dept of Fish and Game 333 Raspberry Road Anchorage AK 99518 (907) 344-0541
ADF&G	Alaska Dept of Fish and Game Library 333 Raspberry Road Anchorage AK 99518 (907) 267-2314
ADOT&PF	Alaska Dept of Transportation and Public Facilities 4111 Aviation Drive PO Box 196900 Anchorage AK 99519 (907) 243-1111
	Alaska Resources Library 222 W. 7th Street Anchorage AK 99513 (907) 271-5025
	Alaska State Library 344 W 3rd Ave, Suite 125 Anchorage AK 99501
	Anchorage Municipal Library Z.J. Loussac Public Library 3600 Denali Anchorage AK 99508 (907) 562-7323

AEIDC Arctic Environmental Information and Data Center
University of Alaska Anchorage
707 A Street
Anchorage AK 99501
(907) 257-2733

COE Army Corp of Engineers
Elmendorf Air Force Base, Bldg 21-700
PO Box 898
Anchorage AK 99502
(907) 753-2520

Chugach Alaska Corporation
Chugach Alaska Building
3000 A Street, Suite 400
Anchorage AK 99503
(907) 563-8866

ADC&RA Department of Community and Regional Affairs
Municipal and Regional Assistance Division
949 East 36th Ave., Suite 408
Anchorage AK 99508
(907) 563-1073

ADNR/DOF Dept of Natural Resources, Div of Forestry
3601 C Street, Suite 1058
PO Box 107005
Anchorage AK 99510
(907) 762-2501

ADNR/DLW Dept of Natural Resources, Div of Land and Water,
Southcentral Region, Information Office
3601 C Street, Suite 1034
PO Box 107005
Anchorage AK 99510
(907) 762-2492

Dept of Natural Resources, Div of Management
Land Records Information Section
3601 C Street, Suite 934
PO Box 107005
Anchorage AK 99510
(907) 762-2384

Dept of Natural Resources, Div of Parks & Outdoor
Recreation, History & Archaeology
3601 C Street, Suite 1278
PO Box 107001
Anchorage AK 99510
(907) 762-2626

ADNR/DPOR Dept of Natural Resources, Div of Parks & Outdoor
Recreation, Southcentral Region Office
3601 C Street, Suite 1280
PO Box 107001
Anchorage AK 99510
(907) 762-2617

EPA Environmental Protection Agency
222 W 7th Ave
Anchorage AK 99513
(907) 271-5083

NOAA National Oceanic & Atmospheric Administration
222 W 7th Ave
Anchorage AK 99513
(907) 271-5040

NPS National Park Service, Alaska Regional Office
2525 Gambell Street
Anchorage AK 99503
(907) 257-2696

OSPIC	Oil Spill Public Information Center 645 G Street Anchorage AK 99501 (907) 278-8008
RPWG	Oil Spill Restoration Planning Work Group 437 E Street, Suite 301 Anchorage AK 99501 (907) 271-2461
USFS	U.S. Dept of Agriculture, Forest Service Chugach National Forest 201 East 9th Ave., Suite 206 Anchorage AK 99501 (907) 271-2500
BLM	U.S. Dept of the Interior, Bureau of Land Management 701 C Street Anchorage AK 99503 (907) 271-5960
USFWS	U. S. Fish and Wildlife Service, Alaska Regional Office 1011 E Tudor Road Anchorage AK 99503 (907) 786-3486
USGS	U. S. Geological Surveys, Earth Science Information Center 4230 University Drive, Room 101 Anchorage AK 99508 (907) 786-7011

DATA

Fish and Wildlife

Fish and Wildlife

Document Type Fish and Wildlife Maps
Title Alaska Habitat Management Guide. Southcentral Region
Map Atlas
Author ADF&G
Publication Map Atlas
Publication Date 1985
Source ADF&G
OSPIC
Alaska Resources Library
Introduction, definitions, references, 11 color plates. 18
pp.

Document Type Fish and Wildlife Maps
Title An Atlas to the Catalog of Waters Important for Spawning,
Rearing or Migration of Anadromous Fishes, Southcentral
Region, Resource Management, Region II
Author ADF&G
Publication Map Atlas
Publication Date 1984
Source ADF&G
Alaska Resources Library

Document Type Fish and Wildlife Maps
Title Crucial Habitat Map for Prince William Sound Area Plan
Author ADNR/DLW
Publication Map
Publication Date 1990 (revised)
Source ADNR/DLW
Map Scale 1:250,000

Document Type Fish and Wildlife Maps
Title Fish and Wildlife Harvest Areas Map for Prince William Sound Area Plan
Author ADNR/DLW
Publication Map
Publication Date 1990 (revised)
Source ADNR/DLW
Map Scale 1:250,000

Document Type Fish and Wildlife Maps
Title Important Habitat Map for Prince William Sound Area Plan
Author ADNR/DLW
Publication Map
Publication Date 1990 (revised)
Source ADNR/DLW
Map Scale 1:250,000

Document Type Fish and Wildlife Maps
Title Prime Habitat Map for Prince William Sound Area Plan
Author ADNR/DLW
Publication Map
Publication Date 1990 (revised)
Source ADNR/DLW
Map Scale 1:250,000

Document Type Fish and Wildlife Maps
Title State of Alaska, Game Refuges, Critical Habitat Areas and Game Sanctuaries
Author ADF&G/Habitat Division
Publication Map Atlas
Publication Date 1983
Source ADF&G
Alaska State Library
General description, maps and legal descriptions

Document Type Fish and Wildlife Reports
Title A Fish and Wildlife Resource Inventory of the Prince William Sound Area
Author ADF&G
Publication Report
Publication Date 1978
Source ADF&G Library

Document Type Fish and Wildlife Reports
Title A Study of Land Use Activities and their Relationship to the Sport Fish Resources in Alaska
Author Elliot, S. T.
Publication Report
Publication Date 1985
Source ADF&G Div of Sport Fish, Juneau
Alaska State Library
Vol. 26, July 1, 1984 - June 30, 1985. Federal aid to fish restoration and anadromous fish studies.

Document Type Fish and Wildlife Reports
Title Alaska Fisheries Atlas: Volume I.
Author ADF&G
Publication Report
Publication Date 1978
Source ADF&G

This volume dealt specifically with salmon spawning, rearing and commercial fishing areas.

Document Type Fish and Wildlife Reports
Title Alaska Habitat Management Guide. Economic Overview of Fish and Wildlife. Vol. I: Commercial and Sport Fishing
Author ADF&G
Publication Report
Publication Date 1986
Source ADF&G
OSPIC
Alaska Resources Library

Document Type Fish and Wildlife Reports
Title Alaska Habitat Management Guide. Economic Overview of Fish and Wildlife. Vol. II: Hunting, Trapping, Nonconsumptive Use, and Subsistence and other Local Use
Author ADF&G
Publication Report
Publication Date 1986
Source ADF&G
OSPIC
Alaska Resources Library

Document Type Fish and Wildlife Reports
Title Alaska Habitat Management Guide. Impacts of Land and Water Use on Wildlife and their Habitat on Human Use of Fish and Wildlife
Author ADF&G
Publication Report
Publication Date 1986
Source ADF&G
OSPIC
Alaska State Library

Document Type Fish and Wildlife Reports
Title Alaska Habitat Management Guide. Impacts of Land and Water Use on Fish and their Habitat: Part I: Indices
Author ADF&G
Publication Report
Publication Date 1986
Source ADF&G
OSPIC

- Document Type** Fish and Wildlife Reports
Title Alaska Habitat Management Guide. Impacts of Land and Water Use on Fish and their Habitat: Part II: Annotated Bibliography
Author ADF&G
Publication Report
Publication Date 1986
Source ADF&G
OSPIC
-
- Document Type** Fish and Wildlife Reports
Title Alaska Habitat Management Guide. Southcentral Region. Vol. 1: Life Histories and Habitat Requirements of Fish and Wildlife
Author ADF&G
Publication Report
Publication Date 1985
Source ADF&G
OSPIC
-
- Document Type** Fish and Wildlife Reports
Title Alaska Habitat Management Guide. Southcentral Region. Vol. 2: Distribution, Abundance, and Human Use of Fish and Wildlife.
Author ADF&G
Publication Report
Publication Date 1985
Source ADF&G
OSPIC
-
- Document Type** Fish and Wildlife Reports
Title Catalog of Alaskan Seabird Colonies
Author Sows, Arthur L., et al
Publication Report
Publication Date 1978
Source USFWS
Alaska Resources Library
Alaska State Library
-

Document Type	Fish and Wildlife Reports
Title	Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes
Author	ADF&G
Publication	Report
Publication Date	1989
Source	ADF&G Alaska State Library

Document Type	Fish and Wildlife Reports
Title	Comprehensive Salmon Plan, Phase II Copper River Area: Public Review Draft Phase II Plan
Author	Prince William Sound Regional Fisheries Planning Team
Publication	Report
Publication Date	1984
Source	Alaska Resources Library ADF&G Library

Document Type	Fish and Wildlife Reports
Title	Comprehensive Salmon Plan, Prince William Sound: Phase I Review Draft
Author	Prince William Sound Regional Fisheries Planning Team
Publication	Report
Publication Date	1981
Source	Alaska State Library

Document Type	Fish and Wildlife Reports
Title	Fish and Wildlife Uses in Six Alaska Peninsula Communities: Egegik, Chignik, Chignik Lagoon, Chignik Lake, Perryville, and Ivanof Bay
Author	Morris, Judith M.
Publication	Report
Publication Date	1987
Source	ADF&G/Div of Subsistence Alaska State Library Anchorage Municipal Library

Document Type Fish and Wildlife Reports
Title Forest Characteristics and Associated Deer Forage
Production on Prince William Sound Islands.
Author Eck, Katherine Constance
Publication Report
Publication Date 1983
Source Alaska Resources Library
ADF&G Library

Document Type Fish and Wildlife Reports
Title Inventory and Cataloging of Kenai Peninsula, Cook Inlet and
Prince William Sound Drainages and Fish Stocks
Author Engel, Larry J.
Publication Report
Publication Date 1973
Source Alaska State Library

Document Type Fish and Wildlife Reports
Title Inventory and Cataloging of Sport Fish and Sport Fish
Waters of the Copper River, Prince William Sound, and the
Upper Susitna River
Author Williams, Fred T.
Publication Report
Publication Date 1973?
Source Alaska State Library

Document Type Fish and Wildlife Reports
Title Kodiak Islands Fisheries Banks and Shelf: A Marine
Sanctuary Proposal
Author Cannon, Richard L.
Publication Report
Publication Date 1978?
Source ADF&G Library

Document Type Fish and Wildlife Reports
Title Marine Mammal and Fishery Interactions on the Copper River Delta and in Prince William Sound, Alaska
Author Matkin, Craig O.
Publication Report
Publication Date 1980
Source Western Library Network (UAF)

Document Type Fish and Wildlife Reports
Title Mitigation Alternatives for the Seward Marine Industrial Center and Coal Loading Facility, Seward, Alaska
Author ADF&G
Publication Report
Publication Date 1984
Source ADF&G/Habitat Division
Alaska Resources Library

Document Type Fish and Wildlife Reports
Title Patterns of Wild Resource Use in English Bay and Port Graham, Alaska
Author Stanek, Ronald T.
Publication Report
Publication Date 1985
Source ADF&G/Div of Subsistence
Alaska State Library

Document Type Fish and Wildlife Reports
Title Prince William Sound-Copper River Comprehensive Salmon Plan: Phase I, 20 Year Plan, (1983-2002)
Author Prince William Sound Regional Fisheries Planning Team
Publication Report
Publication Date 1983
Source Alaska State Library
ADF&G Library

Document Type Fish and Wildlife Reports
Title Prince William Sound Economic Impact Study Regional
Salmon Plan
Author
Publication Report
Publication Date 1981
Source Alaska State Library
For Prince William Sound Aquaculture Corporation

Document Type Fish and Wildlife Reports
Title Prince William Sound Economic Impact Study Regional
Salmon Plan
Author Prince William Sound Aquaculture Corporation
Publication Report
Publication Date 1981
Source Alaska Resource Library

Document Type Fish and Wildlife Reports
Title Resource Use Patterns in Chenega, Western Prince William
Sound: Chenega in the 1960's and Chenega Bay 1984-1986
Author Stratton, Lee & E. B. Chisum
Publication Report
Publication Date 1986
Source ADF&G/Div of Subsistence
Alaska Resources Library
Alaska State Library
Technical Paper, No. 139, ADF&G, Subsistence Division

Document Type Fish and Wildlife Reports
Title Resource Uses in Cordova, A Coastal Community of
Southcentral Alaska
Author Stratton, Lee
Publication Report
Publication Date 1989
Source ADF&G/Div of Subsistence
Alaska State Library

Document Type Fish and Wildlife Reports
Title Stock Assessment and Management of Pacific Herring in Prince William Sound, Alaska, 1988
Author Baker, Timothy T.
Publication Report
Publication Date 1990
Source ADF&G/Div of Commercial Fisheries
Alaska State Library

Document Type Fish and Wildlife Reports
Title Summary of Kachemak Bay Area Salmon and Other Sport Fish Recreational Fisheries
Author ADF&G
Publication Report
Publication Date 1989
Source ADF&G/Sport Fish Div & FRED Div
Alaska State Library

Document Type Hatcheries
Title Biological Planning Document, Port San Juan and Esther Salmon Hatcheries, Prince William Sound, Alaska
Author Noerenberg, Wallace H.
Publication Report
Publication Date 1980
Source Alaska State Library

Document Type Hatcheries
Title Concept Design for Esther Sockeye Hatchery, Lake Bay, Esther Island, Prince William Sound, Alaska
Author Anderson Bjornstad Kane Jacobs, Inc.
Publication Report
Publication Date 1986
Source Alaska State Library

- Document Type** Hatcheries
Title Economic and Financial Analysis of Port San Juan and Esther Lake Salmon Hatcheries
Author Prince William Sound Aquaculture Corporation
Publication Report
Publication Date 1980
Source Alaska State Library
-
- Document Type** Hatcheries
Title Main Bay Hatchery: Final Environmental Impact Statement, Chugach National Forest
Author USFS
Publication Report
Publication Date 1980
Source Alaska Resources Library
Alaska State Library
-
- Document Type** Mariculture
Title Mariculture: Issues and Proposed Goals and Guidelines: Prince William Sound Area Plan; Prince of Wales Island Area Plan
Author ADNR/DLW
Publication Report
Publication Date 1987
Source ADNR/DLW
-

Document Type Mariculture Leases/Permits
Title
Author
Publication
Publication Date
Source ADNR/DLW

Pursuant to Chapter 145, SLA 1988, ADNR has identified the districts for siting aquatic farms and has adopted regulations to govern them. The state's current tidelands permitting process allows mariculture farmers to obtain use permits. Permits will be issued for three years. Aquatic Farm Leases may be issued to a person who has an existing aquatic farmsite permit. The lease may be issued for up to 10 years and may be extended for an additional ten years, at the Commissioner's discretion.

Land Use/Status

Land Use/Status

Document Type Community Report
Title Communities of the Chugach Native Region
Author The North Pacific Rim
Publication Report
Publication Date 1980
Source Alaska State Library
Anchorage Municipal Library

Document Type Community Report
Title Community Profiles: Alaska Peninsula/Iliamna Lake Packet
Author DOWL
Publication Report
Publication Date 1982
Source ADCRA

Community profiles provide a comprehensive overview of the community involved and are a valuable reference in many planning processes. Included in the Alaska Peninsula/Iliamna Lake Packet are profiles for Chignik, Chignik Lagoon, and Chignik Lake.

Document Type Community Report
Title Community Profiles: Kodiak Island Packet
Author DOWL
Publication Report
Publication Date 1981
Source ADCRA

Community profiles provide a comprehensive overview of the community involved and are a valuable reference in many planning processes. The Kodiak Island Packet includes profiles for Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions.

Document Type	Infrastructure Report
Title	Inventory and Condition Survey of Public Facilities: Chugach Region
Author	ADOT&PF
Publication	Report
Publication Date	1981
Source	ADOT&PF
<hr/>	
Document Type	Infrastructure Report
Title	Inventory and Condition Survey of Public Facilities: Kodiak Island Borough, Vol. 1 and 2
Author	ADOT&PF
Publication	Report
Publication Date	1981
Source	ADOT&PF
<hr/>	
Document Type	Land Status
Title	Alaska Land Status Map
Author	ADNR/DLW
Publication	Map
Publication Date	1987
Source	ADNR/DLW
	Map Scale 1:2,500,000
	Map of entire state showing general land status on a township basis. Includes federal, state, and native ownership.
<hr/>	

Document Type Land Status
Title ANCSA Navigation and Easement Maps
Author BLM
Publication Maps
Publication Date current
Source BLM
 Map scale 1:63,360
 Also available in aperture card form. Maps were started in the late 1970's with ANILCA. Maps are updated as decisions are finalized on the status of easements and navigable waters.

Document Type Land Status
Title Chugach Alaska Corporation Native Corporation Land Holdings
Author Chugach Alaska Corporation
Publication Map
Publication Date 1988
Source Chugach Alaska Corporation
 Map Scale 1 inch to 8 miles approximate

Document Type Land Status
Title Chugach National Forest Alaska
Author USFS
Publication Map
Publication Date 1983
Source USFS
 Map scale 1 inch to 8 miles
 Map of the Chugach National Forest showing the boundaries, forest service cabins, recreation sites, etc.

Document Type Land Status
Title Land Status Map for Prince William Sound Area Plan
Author ADNR/DLW
Publication Map
Publication Date 1990 (revised)
Source ADNR/DLW
Map Scale 1:250,000

Document Type Land Status
Title Tide and Submerged Lands in the Exxon Valdez Oil Spill
Impact Area, June 1989
Author ADNR/DLW
Publication Information Sheet
Publication Date 1989
Source ADNR/DLW

Document Type Land Status Records
Title Federal Land Status Records
Author
Publication
Publication Date Current
Source BLM

The Land Status records in the Alaska Offices of BLM consist primarily of four elements. Every township has an ownership or Master Title Plat (MTP) and a Historical Index (HI); a Miscellaneous Document Index (MDI) and the Alaska Automated Land and Minerals Records System (AALMRS) are the other Land Status Records elements.

The MTP includes information from the official survey plat, or if more than one survey has been made for a township, the plat gives a composite survey picture. The MTP shows the lands which have been patented to private ownership, the patent numbers, and the reservations to the United States as stated in each patent. Withdrawals, rights-of-way, National Forests, wildlife refuges, classifications, and other reservations are shown. Current applications and entries for title to or use of public lands and resources are also shown.

The Alaska Automated Land and Minerals Records System contains the computerized land status records for Alaska. The AALMRS contains information on oil and gas both pending offers and leases issued, the records of mining claim applications and the records for all leases and permits issued for less than one years duration.

Document Type Land Status Records
Title State Land Status Records
Author
Publication
Publication Date Current
Source ADNR/DLW

The State Land Status records basically consist of status plats and Land and Administration System (LAS) computer records. Both include information on actions affecting state land and resources such as information on surveys, water rights, mining claims, leases, right of ways, acquisitions, classifications, oil and gas leases, land conveyances, and classifications.

The status plats are a graphic representation of actions within a township. LAS contains computerized land status records of case files and actions. Reference to the State Historical indices and serial registers may be required for information on cases that were not inputted into LAS. Maintenance of these records ceased when ADNR implemented LAS.

Document Type Land Systems Inventory
Title Land Systems Inventory of Eastern Prince William Sound, Chugach National Forest.
Author USFS
Publication Report
Publication Date 1983
Source USFS
unpublished

Document Type Land Systems Inventory
Title Land Systems Inventory of Western Prince William Sound, Chugach National Forest.
Author Huecker, Robert. et al
Publication Report
Publication Date 1984
Source USFS
USDA, Administrative Document Number 132

Document Type Marine Facilities
Title Alternative Log Transfer Facilities, Afognak Island, Alaska
Author
Publication Report
Publication Date 1987
Source AEIDC
Final environmental assessment. Report for Alaska
Maritime National Wildlife Refuge. 2 vols.

Document Type Marine Facilities
Title City of Cordova Marine Facilities Study: Final Report
Author TAMS
Publication Report
Publication Date 1981
Source City of Cordova
ADCRA Library
Alaska Resources Library

Document Type Marine Facilities
Title Detailed Project Report and Final Environmental Impact
Statement, Seward Harbor Alaska: Small Boat Harbor
Navigation Improvements
Author COE
Publication Report
Publication Date 1982
Source COE
Alaska State Library
Anchorage Municipal Library

Document Type Marine Facilities
Title Detailed Project Report: Navigation Improvement, Small
Boat Harbor, Cordova, Alaska
Author COE
Publication Report
Publication Date 1979
Source COE
Alaska Resources Library

Document Type Marine Facilities
Title Latouche Island Harbor, Environmental Assessment,
Project K-32409
Author ADOT&PF
Publication Report
Publication Date 1982
Source ADOT&PF

Document Type Marine Facilities
Title Oil Terminal and Marine Service Base Sites in the Kodiak
Island Borough
Author Woodward-Clyde Consultants
Publication Report
Publication Date 1977
Source ADCRA Library
Alaska State Library
Alaska Resources Library

Document Type Marine Facilities
Title Shotgun Cove Harbor Study, Draft
Author COE
Publication Report
Publication Date 1985
Source COE

Document Type Marine Facilities
Title Small Boat Harbor, Larsen Bay, Alaska, Draft Detailed
Project Report with Environmental Assessment
Author COE
Publication Report
Publication Date 1989
Source COE
Western Library Network (UAF)

Document Type Marine Facilities
Title Small Craft Navigation Study, Detailed Project Report and Environmental Considerations, Whittier, Alaska
Author COE
Publication Report
Publication Date 1987
Source COE

Document Type State Land Selections
Title State Land Selections from Tongass and Chugach National Forests
Author ADNR/DLW
Publication Report
Publication Date 1989
Source ADNR/DLW

Document Type Transportation Study
Title Budget Assessment for Planning, Engineering and Construction: Copper River Highway Improvements and Bering River Highway Construction
Author City of Cordova?
Publication Report
Publication Date 1983
Source Alaska State Library

Document Type Transportation Study
Title Copper River Highway Environmental Impact Statement, Draft
Author Alaska Dept of Highways, South Central
Publication Report
Publication Date 1973?
Source Alaska State Library

Document Type	Transportation Study
Title	Kenai Regional Transportation Study: KRTS: Phase I
Author	
Publication	Report
Publication Date	1981
Source	ADOT&PF Alaska State Library
<hr/>	
Document Type	Transportation Study
Title	Kenai Regional Transportation Study: KRTS: Phase II
Author	
Publication	Report
Publication Date	1981
Source	ADOT&PF Alaska State Library Alaska Resources Library
<hr/>	
Document Type	Transportation Study
Title	Kenai Regional Transportation Study (KRTS) Project: Final Phase III
Author	
Publication	Report
Publication Date	1983
Source	ADOT&PF Alaska Resources Library
<hr/>	
Document Type	Transportation Study
Title	Phase III Interim Report, System Alternatives and Recommendations, Whittier Access Study
Author	DMJM Forssen
Publication	Report
Publication Date	1980
Source	ADOT&PF
<hr/>	

Document Type Transportation Study
Title Prince William Sound Area Transportation Needs Assessment Report
Author Cannard, Vicki
Publication Report
Publication Date 1982
Source ADOT&PF
Alaska State Library

Document Type Transportation Study
Title Prince William Sound Transportation Study
Author ADOT&PF
Publication Report
Publication Date 1981
Source ADOT&PF
Alaska State Library
Alaska Resources Library

Document Type Transportation Study
Title Prince William Sound Vessel Traffic System
Author USCG
Publication Report
Publication Date 1975
Source Alaska Resources Library

Document Type Transportation Study
Title Shotgun Cove Road Location and Design Study Report
Author Ted Forsi & Assoc., Inc.
Publication Report
Publication Date 1983
Source ADOT&PF

Document Type	Transportation Study
Title	Supplement with 4(f) Discussion to the Copper River Highway Final Environmental Impact Statement
Author	Alaska Dept of Highways?
Publication	Report
Publication Date	1976
Source	Alaska State Library
<hr/>	
Document Type	Transportation Study
Title	Whittier Access Road Location Study Report (Portage to Bear Valley)
Author	ADOT&PF
Publication	Report
Publication Date	1983
Source	ADOT&PF
<hr/>	
Document Type	Transportation Study
Title	Whittier Access Road Tunnel Feasibility Study
Author	Woodward-Clyde, Parsons Brinkerhoff
Publication	Report
Publication Date	1985
Source	ADOT&PF
<hr/>	
Document Type	Transportation Study
Title	Whittier Rail Shuttle Service Analysis
Author	ADOT&PF
Publication	Report
Publication Date	1983
Source	ADOT&PF
<hr/>	
Document Type	Transportation Study
Title	Whittier Transportation Alternatives, Economic Analysis and Financing Options
Author	TAMS
Publication	Report
Publication Date	1986
Source	ADOT&PF
<hr/>	

Document Type Transportation Study
Title Whittier Transportation Options Study
Author DMJM, Forssen
Publication Report
Publication Date 1981
Source ADOT&PF

Document Type Wilderness Areas
Title Assessment of Probable Economic Impacts of Wilderness Withdrawals Chugach National Forest
Author Glass, R.
Publication Report
Publication Date 1978
Source USFS
Western Library Network (UAF)

Document Type Wilderness Areas
Title Chugach National Forest, Draft Forest Plan, and Nellie-Juan College Fiord Wilderness Study Report
Author USFS
Publication Report
Publication Date 1982
Source USFS
USDA, Administrative document number 100

Document Type Wilderness Areas
Title Chugach National Forest, Supplement to the Draft Environmental Impact Statement and Draft Forest Plan and Nellie-Juan College Fiord Wilderness Study Report
Author USFS
Publication Report
Publication Date 1982
Source USFS
USDA, Administrative document number 116

Document Type Wilderness Areas
Title Draft Environmental Impact Statement, Chugach National
Forest Plan and Nellie-Juan College Fiord Wilderness Study
Report
Author USFS
Publication Report
Publication Date 1982
Source USFS
USDA, Administrative document number 101

Management Plan

Management Plan

- | | |
|------------------|---|
| Document Type | Management Plan |
| Title | Management Planning for the Prince William Sound Region |
| Author | Grumman Ecosystems Corporation |
| Publication | Report |
| Publication Date | 1971 |
| Source | Western Library Network (UAA, UAF)
A report to the Commission for Ocean Advancement through Science and Technology, State of Alaska. |
-
- | | |
|------------------|--|
| Document Type | Management Plan |
| Title | Native Participation in Land Management Planning in Alaska |
| Author | Gallagher, T. J. |
| Publication | Report |
| Publication Date | 1988 |
| Source | |
-
- | | |
|------------------|---|
| Document Type | Management Plan (Coastal) |
| Title | Cordova Coastal Management Program |
| Author | City of Cordova |
| Publication | Report |
| Publication Date | 1986 |
| Source | City of Cordova
Alaska State Library
Alaska Resources Library |
-
- | | |
|------------------|---|
| Document Type | Management Plan (Coastal) |
| Title | Kenai Peninsula Borough Coastal Development Program |
| Author | Environmental Services, Ltd. |
| Publication | Report |
| Publication Date | 1980 |
| Source | Kenai Peninsula Borough
ADCRA Library |
-

Document Type Management Plan (Coastal)
Title Kenai Peninsula Borough Coastal Management Program
Author Kenai Peninsula Borough
Publication Report
Publication Date 1990
Source Kenai Peninsula Borough
Alaska State Library
ADF&G Library

Document Type Management Plan (Coastal)
Title Kenai Peninsula Borough Coastal Management Program,
Appendix B: Resource Analysis
Author Resource Analysts
Publication Report
Publication Date 1989
Source Kenai Peninsula Borough
ADCRA Library

An analysis of potential development and environmental
sensitivity in the Kenai Peninsula Borough.

Document Type Management Plan (Coastal)
Title Kodiak Island Borough Coastal Management Program
Author Woodward-Clyde Consultants
Publication Report
Publication Date 1988 (update)
Source Kodiak Island Borough
ADCRA Library
Alaska State Library

Document Type Management Plan (Coastal)
Title Valdez Coastal Management Program
Author City of Valdez
Publication Report
Publication Date 1986
Source City of Valdez
Alaska State Library
ADF&G Library

Document Type	Management Plan (Coastal)
Title	Whittier Coastal Management Plan
Author	City of Whittier
Publication	Report
Publication Date	1990
Source	City of Whittier Alaska State Library Alaska Resources Library
<hr/>	
Document Type	Management Plan (Community)
Title	Akhiok Comprehensive Plan and Capital Improvements Program
Author	Kodiak Island Borough
Publication	Report
Publication Date	1986
Source	Kodiak Island Borough ADCRA Library
<hr/>	
Document Type	Management Plan (Community)
Title	City of Seward Comprehensive Plan
Author	CCC Architects Alaska, et al
Publication	Report
Publication Date	1985
Source	City of Seward ADCRA Library Anchorage Municipal Library
<hr/>	
Document Type	Management Plan (Community)
Title	City of Whittier Community Comprehensive Plan
Author	City of Whittier
Publication	Report
Publication Date	1986
Source	City of Whittier Alaska State Library Alaska Resources Library
<hr/>	

Document Type Management Plan (Community)
Title Cordova Comprehensive Development Plan
Author Alaska Consultants, Inc.
Publication Report
Publication Date 1976
Source City of Cordova
ADCRA Library
Alaska State Library

Document Type Management Plan (Community)
Title Homer Comprehensive Plan
Author Pacific Rim Planners & Engineers
Publication Report
Publication Date 1983
Source City of Homer
Alaska State Library
Alaska Resources Library

Document Type Management Plan (Community)
Title Karluk Comprehensive Development Plan
Author Norgaard Consultants
Publication Report
Publication Date 1984
Source ADCRA Library

Document Type Management Plan (Community)
Title Kodiak Island Borough Comprehensive Parks and Recreation Plan
Author Kramer, Chin, & Mayo, Inc.
Publication Report
Publication Date 1978
Source Kodiak Island Borough
ADCRA Library
Western Library Network (UAA,UAF)

Document Type Management Plan (Community)
Title Kodiak Island Borough Regional Plan and Development Strategy
Author Kramer, Chin & Mayo, Inc.
Publication Report
Publication Date 1978
Source Kodiak Island Borough
Alaska State Library
Alaska Resources Library
Draft prepared for the Kodiak Island Borough.

Document Type Management Plan (Community)
Title Kodiak Island Borough Regional Plan and Development Strategy
Author Kramer, Chin & Mayo, Inc.
Publication Report
Publication Date 1978
Source Kodiak Island Borough
ADCRA Library
Summary draft report prepared for the Kodiak Island Borough.

Document Type Management Plan (Community)
Title Land Use Plan for Whittier Small Boat Harbor
Author USKH, Inc.
Publication Report
Publication Date 1985
Source City of Whittier
Alaska State Library
Anchorage Municipal Library

Document Type Management Plan (Community)
Title Larsen Bay Comprehensive Development Plan
Author Norgaard Consultants
Publication Report
Publication Date 1984
Source ADCRA Library

Document Type Management Plan (Community)
Title Ouzinkie Comprehensive Development Plan
Author Norgaard Consultants
Publication Report
Publication Date 1984
Source ADCRA Library

Document Type Management Plan (Community)
Title Port Lions Comprehensive Development Plan
Author Environmental Science and Engineering
Publication Report
Publication Date 1982
Source Alaska Resources Library
Alaska State Library
Anchorage Municipal Library

Document Type Management Plan (Community)
Title Seldovia Comprehensive Plan
Author Pacific Rim Planners & Engineers
Publication Report
Publication Date 1980
Source City of Seldovia
Alaska State Library
Alaska Resources Library

Document Type Management Plan (Community)
Title Shuyak Island Comprehensive Plan
Author Cassidy, Chuck
Publication Report
Publication Date 1987
Source Kodiak Island Borough
ADCRA Library
Western Library Network (UAA)

Document Type Management Plan for Federal Lands
Title Bureau of Land Management Land Use Plan for Southcentral Alaska: A Summary
Author BLM
Publication Report
Publication Date 1980
Source BLM

Document Type Management Plan for National Forest
Title Big Islands Management Area, Final Environmental Impact Statement, Chugach National Forest
Author USFS
Publication Report
Publication Date 1989
Source USFS

Management area includes Montague Island, Hinchinbrook Island, Hawkins Island, and Green Island within Prince William Sound.

Document Type Management Plan for National Forest
Title Chugach Land Management Plan: Supply and Demand Assessment for Resources of the Chugach National Forest
Author Arobio, E. L., et al
Publication Report
Publication Date 1979
Source USFS

Document Type Management Plan for National Forest
Title Chugach National Forest, Final Environmental Impact Statement
Author USFS
Publication Report
Publication Date 1984
Source USFS

USDA, Administrative Document Number 127A

Document Type Management Plan for National Forest
Title Chugach National Forest, Land and Resource Management Plan
Author USFS
Publication Report
Publication Date 1984
Source USFS
USDA, Administrative Document Number 127B

Document Type Management Plan for National Forest
Title Chugach National Forest Land and Resource Management Plan: Analysis of Public Comments: Identification of Major Public Issues
Author USFS
Publication Report
Publication Date 1980
Source USFS
Alaska State Library

Document Type Management Plan for National Park
Title Aniakchak National Monument and Preserve, General Management Plan, Wilderness Suitability Review, Land Protection Plan
Author NPS
Publication Report
Publication Date 1986
Source NPS

Document Type Management Plan for National Park
Title Katmai National Park and Preserve, General Management Plan, Wilderness Suitability Review, Land Protection Plan
Author NPS
Publication Report
Publication Date 1986
Source NPS

Document Type Management Plan for National Park
Title Kenai Fjords National Park, Final Draft Land Protection Plan
Author NPS
Publication Report
Publication Date 1987
Source NPS

Document Type Management Plan for National Park
Title Kenai Fjords National Park, Final Environmental Impact Statement, Wilderness Recommendation
Author NPS
Publication Report
Publication Date 1988
Source NPS

Document Type Management Plan for National Park
Title Kenai Fjords National Park, General Management Plan
Author NPS
Publication Report
Publication Date 1984
Source NPS
Alaska Resources Library

Document Type Management Plan for National Park
Title State of Alaska Resource Management Recommendations for Katmai National Park and Preserve and Surrounding Area
Author State Conservation System Unit Coordinator
Publication Report
Publication Date 1984
Source Alaska Resources Library
Alaska State Library

Document Type Management Plan for National Park
Title State of Alaska Resource Management Recommendations
for Kenai Fjords National Park and Surrounding Area
Author State Conservation System Unit Coordinator
Publication Report
Publication Date 1984
Source Alaska Resources Library
Alaska State Library

Document Type Management Plan for State Land
Title Cultural Resources Element, Prince William Sound Area
Plan
Author ADNR/DLW
Publication Report
Publication Date 1987
Source ADNR/DLW

Document Type Management Plan for State Land
Title Engineering Geology Evaluation of Selected Areas, Prince
William Sound Area Plan
Author Updike, Randall G.
Publication Report
Publication Date 1986
Source ADNR/DLW

Document Type Management Plan for State Land
Title Fish and Wildlife Element, Prince William Sound Area Plan
Author ADNR/DLW
Publication Report
Publication Date 1987
Source ADNR/DLW

Document Type Management Plan for State Land
Title Nuka Island and Vicinity Management Plan
Author ADNR/DLW
Publication Report
Publication Date 1986
Source ADNR/DLW
ADNR/DPOR

Document Type Management Plan for State Land
Title Prince William Sound Area Plan
Author ADNR & ADF&G
Publication Report
Publication Date 1988
Source ADNR/DLW

The plan describes how DNR will manage state-owned uplands, tidelands and submerged lands in Prince William Sound. The plan also provides general guidance for managing units of the Alaska Marine Park system that are located in the planning area. The plan determines land-use classifications, land disposal locations, administrative designations, land selections and relinquishments, and guidelines for leases and permits on state land. The plan does not make decisions for federal, Native, private or municipal land.

Document Type Management Plan for State Land
Title Prince William Sound Area Plan Summary of Public Comments From Issue Meetings
Author ADNR/DLW
Publication Report
Publication Date 1986
Source ADNR/DLW

Document Type Management Plan for State Land
Title Recreation and Tourism Element, Prince William Sound Area Plan
Author ADNR/DLW
Publication Report
Publication Date 1987
Source ADNR/DLW

Document Type Management Plan for State Land
Title Subsurface Resources Element, Prince William Sound Area Plan
Author ADNR/DLW
Publication Report
Publication Date 1987
Source ADNR/DLW

Document Type Management Plan for State Land
Title Timber Element, Prince William Sound Area Plan
Author ADNR/DLW
Publication Report
Publication Date 1987
Source ADNR/DLW

Document Type Management Plan for State Park
Title Alaska State Park System: Southcentral Region Plan
Author ADNR/DPOR
Publication Report
Publication Date 1982
Source ADNR/DPOR

Document Type Management Plan for State Park
Title Kachemak Bay State Park
Author ADNR/DPOR
Publication Report
Publication Date 197-
Source ADNR/DPOR
Alaska State Library

Document Type Management Plan for State Park
Title Kachemak Bay State Park Management Plan
Author ADNR/DPOR
Publication Report
Publication Date 1989
Source ADNR/DPOR
Alaska Resources Library

Document Type Management Plan for State Park
Title Kachemak Bay State Park Management Plan: Public Review Draft
Author ADNR/DPOR
Publication Report
Publication Date 1988
Source ADNR/DPOR

Document Type Management Plan for Wildlife Refuge
Title Alaska Maritime National Wildlife Refuge, Comprehensive Conservation Plan, Environmental Impact Statement, Wilderness Review, (Final)
Author USFWS
Publication Report
Publication Date 1988
Source USFWS

Document Type Management Plan for Wildlife Refuge
Title Alaska Peninsula National Wildlife Refuge, Comprehensive Conservation Plan, Environmental Impact Statement, Wilderness Review, (Final)
Author USFWS
Publication Report
Publication Date 1985
Source USFWS

Document Type Management Plan for Wildlife Refuge
Title Becharof National Wildlife Refuge, Comprehensive Conservation Plan, Environmental Impact Statement, Wilderness Review, (Final)
Author USFWS
Publication Report
Publication Date 1985
Source USFWS

Document Type Management Plan for Wildlife Refuge
Title Kenai National Wildlife Refuge, Comprehensive
Conservation Plan
Author USFWS
Publication Report
Publication Date 1985
Source USFWS

Document Type Management Plan for Wildlife Refuge
Title Kodiak National Wildlife Refuge, Comprehensive
Conservation Plan, Environmental Impact Statement,
Wilderness Review (Final)
Author USFWS
Publication Report
Publication Date 1987
Source USFWS

Document Type Management Plan (Recreation)
Title Fort Abercrombie Historic Site, Master Development Plan
Author Wyller-Killewich-Van Doren-Hazard, Inc.
Publication Report
Publication Date 1973
Source ADNR/DPOR

Document Type Management Plan (Recreation)
Title Outdoor Recreation: Alaska
Author ADNR/DPOR
Publication Report
Publication Date 1988
Source ADNR/DPOR

A recreation resource assessment and policy plan. The plan sets forth goals, an assessment of recreation needs based on surveys, extensive inter-agency cooperation and public participation, and an analysis of critical issues, policies, and land uses affecting recreation opportunities. The plan is the State's Comprehensive Outdoor Recreation Plan and meets the requirements for the state's eligibility and continued participation in the federal Land and Water Conservation Fund.

Document Type Management Plan (Recreation)
Title Public Use Cabin Program Management Plan: Public Review Draft
Author ADNR/DPOR
Publication Report
Publication Date 1985
Source ADNR/DPOR

Natural Resources

Natural Resources

- | | |
|-------------------------|--|
| Document Type | Coastal Study |
| Title | Kodiak Island Borough Coastal Sensitivity Study:
Technical Report |
| Author | Kodiak Island Borough |
| Publication | Report |
| Publication Date | 1985 |
| Source | Kodiak Island Borough
ADCRA Library
Alaska Resources Library |
-
- | | |
|-------------------------|--|
| Document Type | Cultural Resource Reports and Studies |
| Title | 1987 BIA ANCSA Sec. 14(h) 1 Field Investigations in
Prince William Sound and Adjacent Areas |
| Author | Dotter, W. R. |
| Publication | Paper |
| Publication Date | 1988 |
| Source | ADNR/DPOR-History and Archaeology

Paper presented, 15th Annual Meeting of the Alaska
Anthropological Association, Fairbanks. |
-
- | | |
|-------------------------|--|
| Document Type | Cultural Resource Reports and Studies |
| Title | 1988 BIA ANCSA Sec. 14(h) 1 Field Investigations in
Prince William Sound and Adjacent Areas |
| Author | Dotter, W. R. |
| Publication | Paper |
| Publication Date | 1988 |
| Source | ADNR/DPOR-History and Archaeology

Paper presented, 15th Annual Meeting of the Alaska
Anthropological Association, Fairbanks. |
-

Document Type Cultural Resource Reports and Studies
Title Alaska Heritage Resources Survey
Author ADNR/DPOR
Publication Report
Publication Date Current
Source ADNR/DPOR-History and Archaeology

The Alaska Heritage Resources Survey (AHRs) is an inventory of all reported historic and prehistoric sites within the State of Alaska which is maintained by the Office of History and Archaeology. This inventory of cultural resources includes objects, structures, buildings, sites, districts, and travel ways. A general guideline is that a property should be over 50 years of age. The AHRs inventory is used by land managers and planners as well as researchers (historians, archaeologists, etc.). It is important that all sites be reported to the Office of History and Archaeology, especially by the general public, so that these sites can be considered when land management decisions are made. To aid in preservation of reported sites, site locational information is considered confidential information and may be withheld from casual users.

Document Type Cultural Resource Reports and Studies
Title Bibliography and Index of Alaskan Archaeology
Author West, C. E., and R. O. Stern
Publication Report
Publication Date 1987
Source Alaska State Library
 Anchorage Municipal Library

Aurora: Alaska Anthropological Association Monograph 3, Anchorage.

Document Type Cultural Resource Reports and Studies
Title Chugach Archaeological Inventory, Prince William Sound, Alaska. Report of the 1982 Summer Field Season
Author Mitchell, W. W., and J. F. C. Johnson
Publication Report
Publication Date 1982
Source
Cooperative Park Studies Unit, University of Alaska, Fairbanks, and Chugach Natives Inc., Anchorage

Document Type Cultural Resource Reports and Studies
Title Chugach Prehistory: The Archaeology of Prince William Sound
Author de Laguna, Frederica
Publication Book
Publication Date 1956
Source Alaska Resources Library
Anchorage Municipal Library
Alaska State Library

Document Type Cultural Resource Reports and Studies
Title Cultural Resource Management in Alaska: A Current Perspective
Author Griffin, Dennis
Publication Report
Publication Date 1988
Source NPS
Northwest Anthropological Research Notes 22(1):59-66

Document Type Cultural Resource Reports and Studies
Title Cultural Resource Protection in Prince William Sound - A Native Perspective
Author Miraglia, Rita A., and Lora L. Johnson
Publication Paper
Publication Date 1990
Source Chugach Alaska Corporation
Paper presented, 17th Annual Meeting of the Alaska Anthropological Association, Fairbanks.

Document Type Cultural Resource Reports and Studies
Title Cultural Resources Overview of the Chugach National Forest
Author Mattson, J. L., et al
Publication Report
Publication Date 1986
Source USFS

Document Type Cultural Resource Reports and Studies
Title Notes on Planned Characterizations of Site Location, Site Nature, Artifact Nature, and Management and Substantive Generalizations for the Final Report of the EXXON VALDEZ
Author
Publication
Publication Date 1989
Source ADNR/DPOR-History and Archaeology

Document Type Cultural Resource Reports and Studies
Title The 1989 EXXON VALDEZ Cultural Resource Program
Author Mobley, Charles M., et al
Publication Report
Publication Date 1990
Source ADNR/DPOR
Exxon

Document Type Cultural Resource Reports and Studies
Title The Archaeological Resources Protection Act and Alaska
Author Morton, Susan D.
Publication Report
Publication Date 1989
Source NPS
Federal Archeology Report 2(3):1-2

Document Type Environmental Atlas
Title Chugach National Forest Environmental Atlas
Author USFS
Publication Report
Publication Date 1983
Source USFS

Document Type Environmental Study
Title Environmental Studies in Port Valdez, Alaska
Author Springer-Verlag
Publication Report
Publication Date 1988
Source OSPIC

Document Type Forestry
Title Alaska's Forests - Our Future, Agency Review Draft
Author ADNR/DOF
Publication Report
Publication Date 1990
Source ADNR/DOF

Document Type Forestry
Title Forest Resources of Prince William Sound and Afognak Island, Alaska: Their Character and Ownership, 1978
Author Van Hees, Willem W. S.
Publication Report
Publication Date 1989
Source USFS

The 1978 inventory of the forest resources of Prince William Sound and Afognak Island was designed to produce estimates of timberland area, volumes of timber, and growth and mortality of timber. Estimates of timber resource quantities were also categorized by owner. The inventory was conducted in 1977 and 1978; data compilation progressed through final update in 1988 to include current ownership summaries.

Document Type Forestry
Title Management Indicator Species for the National Forest Lands in Alaska
Author Slide, W. B. and L. H. Suring
Publication Report
Publication Date 1986
Source USFS
USDA Forest Service. Alaska Region.
Tech. Publ. R10-TP-2.6.

Document Type Forestry
Title Perenosa Timber Sale, Final Environmental Statement
Author USFS
Publication Report
Publication Date 1974
Source USFS
Prepared by Chugach National Forest in accordance with federal statutes and regulations. Timber sale was on Afognak Island.

Document Type Forestry
Title The Impacts of Clearcut Logging on Fisheries Resources of Southeast Alaska
Author Schwan, M., et al
Publication Report
Publication Date 1985
Source ADF&G/Habitat Division
Technical Report 85-3

Document Type Forestry
Title Timber Harvesting and its Influence on Salmon Management in Southwest Alaska.
Author Gibbons, D. R.
Publication Report
Publication Date 1982
Source PhD. dissertation. University of Washington. Seattle, Washington.

- Document Type** Geological Reports
Title Geology of the Prince William Sound Region, Alaska
Author Moffit, F. H.
Publication Report
Publication Date 1954
Source USGS
Geological Survey Bulletin 989E
-
- Document Type** Mineral Resources
Title Geologic Map of the Chugach National Forest
Author Nelson, Steve W. et al
Publication Report
Publication Date 1985
Source USGS
Map MF-1645-B.
-
- Document Type** Mineral Resources
Title Mineral Occurences in the Chugach National Forest, Southcentral Alaska
Author Jansons, U., et al
Publication Report
Publication Date 1984
Source USGS
Report MLA 5-84
-
- Document Type** Mineral Resources
Title Mineral Resource Potential of the Chugach National Forest
Author Nelson, Steven W. et al
Publication Report
Publication Date 1984
Source USGS
Summary report made to accompany map MF 1645-A by the USGS and the Bureau of Mines.
-

Document Type Mineral Resources
Title Strategic and Critical Mineral Development Potential of
the Chugach National Forest, Southcentral Alaska
Author Hoekzema, R. B.
Publication Report
Publication Date 1984
Source USGS

Open File Report 215-84

Document Type Outer Continental Shelf Study
Title Kodiak Island Borough Outer Continental Shelf Impact
Study - Vol. One: Level of Oil Activity, Policy
Alternatives, Summary of Impacts
Author Simpson Usher Jones Inc.
Publication Report
Publication Date 1977
Source Alaska State Library
Alaska Resources Library
ADF&G Library

Document Type Outer Continental Shelf Study
Title Kodiak Island Borough Outer Continental Shelf Impact
Study - Vol. Two: Community Inventory
Author Simpson Usher Jones Inc.
Publication Report
Publication Date 1977
Source Alaska State Library
Alaska Resources Library
ADF&G Library

- Document Type** Recreation Guide
Title Cruising Guide to Prince William Sound
Author Lethcoe, Jim
Publication Book
Publication Date c1984-c1985
Source Alaska State Library
Anchorage Municipal Library
ADF&G Library
Prince William Sound Books, 2 vols.
-
- Document Type** Recreation Guide
Title Exploring Alaska's Prince William Sound, its Fiords, Islands, Glaciers, and Wildlife
Author Johannsen, Neil
Publication Book
Publication Date c1975
Source Alaska State Library
Anchorage Municipal Library
Alaska Travel Publications
-
- Document Type** Recreation Reports and Studies
Title Alaska Marine Park System
Author ADNR/DPOR
Publication Report
Publication Date 1984
Source ADNR/DPOR
General description, maps, and legal descriptions of state marine parks.
-
- Document Type** Recreation Reports and Studies
Title Coastal Recreation Resources: Cordova, Alaska with Areas of Particular Concern Identified
Author Meiners, Alan H. and A. C. Harton
Publication Report
Publication Date 1977
Source ADNR/DPOR
-

Document Type	Recreation Reports and Studies
Title	Final on the Proposed Legislation to Establish the Seward National Recreation Area in the State of Alaska
Author	USFS
Publication	Report
Publication Date	1971?
Source	Western Library Network (UAF)
<hr/>	
Document Type	Recreation Reports and Studies
Title	Phase I Technical Memoranda: Recreation Needs Assessment
Author	ADNR/DPOR
Publication	Report
Publication Date	1979
Source	ADNR/DPOR
<hr/>	
Document Type	Recreation Reports and Studies
Title	Proceedings of the MESA Workshop on Prince William Sound
Author	
Publication	Report
Publication Date	1978
Source	ADNR/DPOR Alaska Resources Library Alaska State Library Alaska Sea Grant Program, University of Alaska Sea Grant Report 78-9
<hr/>	
Document Type	Recreation Reports and Studies
Title	Recreation, Scenic and Heritage Areas of Particular Concern, Cape Puget to Cape Suckling, Alaska
Author	Meiners, Alan H.
Publication	Report
Publication Date	1978
Source	ADNR/DPOR Alaska Resources Library Alaska State Library
<hr/>	

- Document Type** Recreation Reports and Studies
Title Recreation, Scenic and Heritage Areas of Particular Concern, Kodiak Archipelago
Author ADNR/DPOR
Publication Report
Publication Date 1980
Source ADNR/DPOR
-
- Document Type** Recreation Reports and Studies
Title Report and Recommendations of the Kenai Recreation Work Group
Author Heritage Conservation and Recreation Service
Publication Report
Publication Date 1980
Source USDI
-
- Document Type** Soils/Vegetation
Title Exploratory Soil Survey of Alaska
Author Rieger, Samuel
Publication Report
Publication Date 1979
Source Alaska State Library
Alaska Resources Library
Anchorage Municipal Library
- The Exploratory Soil Survey of Alaska contains much information useful in large-scale land planning. Of prime importance are the predictions of soil behavior for selected land uses. Also highlighted are inherent limitations or hazards of the soils for land uses and the impact that selected land uses will have on the environment.
-

Document Type Soils/Vegetation
Title Reconnaissance Ecosystem - Soil Inventory and
Management Report for the Upper Prince William Sound
Planning Unit-B: Chugach National Forest
Author Sheehy, T. J.
Publication Report
Publication Date 1975
Source USFS

Document Type Soils/Vegetation
Title Reconnaissance Ecosystem-Soil Inventory and Management
Report for the Upper Prince William Sound Planning Unit-B.
Author Sheehy, T. J.
Publication Report
Publication Date 1975
Source USFS
Ms. on file, Chugach National Forest, Anchorage.

Oil Spill

Oil Spill

Document Type Damage Assessment
Title State/Federal Natural Resource Damage Assessment Plan
for the Exxon Valdez Oil Spill, August 1989, Public Review
Draft
Author Trustee Council
Publication Report
Publication Date 1989
Source AEIDC
OSPIC

This document describes the studies necessary to determine the extent and magnitude of injury to natural resources of Prince William Sound and the adjacent Gulf of Alaska. The studies to assess injury are designed to support:

- 1) The development of restoration plans to promote the long-term recovery of natural resources.
- 2) The determination of damages to be claimed for the loss of services to the natural resources.

The plan was prepared through the cooperation of the State of Alaska, the U.S. Departments of Agriculture and Interior, the National Oceanic and Atmospheric Administration, and the U.S. Environmental Protection Agency under the general provisions of the Clean Water Act and the Comprehensive Environmental Response, Compensation and Liability Act.

Document Type Damage Assessment/Air/Water
Title Air/Water Study Number 6
Fate and Toxicity of Spilled Oil from the EVOS
Author NOAA
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This study was moved to Subtidal Study #4 for 1991. This study is designed to:

- a) Assess the toxicity of weathered Exxon Valdez oil and its degradation products to selected test organisms.
- b) Integrate the results from selected other projects into an overall budget for the distribution, transport, transformation, and persistence of spilled oil in Alaskan coastal environments.

Objectives of this study are to:

- A. Document the toxicity of contaminated sediments and related environmental samples to selected marine biota.
 - B. At selected sites, document and quantify the occurrence of oxidized derivatives of Exxon Valdez oil.
 - C. Determine the extent to which the observed toxicity of oil-contaminated samples may be attributable to oxidation products of petroleum.
 - D. Construct a mass balance model of the spilled oil.
-

Document Type Damage Assessment/Air/Water
Title Air/Water Study Number 1
Geographic Extent and Temporal Persistence of Floating
Oil from the Exxon Valdez.
Author NOAA, ADEC
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Marine water quality is protected under state and federal water quality standards. State of Alaska water quality standards for petroleum hydrocarbons are defined as follows:

1. Water column concentrations of aromatic hydrocarbons shall not exceed 10 ug/liter (ppb).
2. No visible sheen, film, floating oil, or discoloration shall occur on the surface of the water.
3. Concentrations of hydrocarbons in sediments shall not have deleterious effects on aquatic life.

A/W Study #1 is designed was designed to:

- A. Confirm that oil collected is from the EVOS.
- B. Document the extent of surface oiling.
- C. Provide information to other studies for use in injury assessment.

Consolidating and interpreting the results of aerial surveys and satellite imagery is the primary task.

Document Type Damage Assessment/Air/Water
Title Air/Water Study Number 2
Petroleum Hydrocarbon-Induced Injury to Subtidal Marine
Sediment Resources
Author NOAA, State of Alaska
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This study was carried out in 1989 and 1990 as A/W Study #2 and is being carried forward in 1991 as part of Subtidal Study #2. Hydrocarbon contamination of marine sediments violates state and federal water quality criteria where concentrations result in deleterious effects on aquatic life. Objectives are to:

- A. Determine occurrence, persistence, and chemical composition of petroleum hydrocarbons in subtidal marine sediments.
 - B. Provide marine sediment data to assist agencies in mass balance calculations of the fate of oil in the marine environment.
 - C. Relate subtidal oil concentrations to adjacent intertidal concentrations and other studies.
 - D. Enumerate hydrocarbon oxidizing bacteria and assess the maximum potential for *in situ* biooxidation of selected hydrocarbon substrates in subtidal marine sediments at oiled and non-oiled sites within and outside of PWS.
-

Document Type Damage Assessment/Air/Water
Title Air/Water Study Number 3
Geographic and Temporal Distribution of Dissolved and
Particulate Petroleum Hydrocarbons in the Water Column
Author NOAA, ADEC
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This study was carried out in 1989 and 1990 as A/W Study #3, and is being proposed for continuation in 1991 as part of Subtidal Study #3. It is designed to document hydrocarbon concentrations in the water column at a range of depths and locations. Trends in ambient water quality are determined using the blue mussel as a biological indicator of low-level, chronic water quality contamination to supplement chemical measurements. Sediment traps are deployed to measure sedimentation and associated hydrocarbon inputs to subtidal sediments from impacted beaches as a result of runoff and clean up operations. Objectives are to:

- A. Evaluate trends in water quality using caged mussels as bioaccumulators as surrogates for chemical measurements.
 - B. Determine if sediments settling out of the water column in nearshore subtidal environments contain adsorbed hydrocarbons.
 - C. Decipher subtidal oiled sediment transport mechanisms through analysis of benthic sediments and stratigraphic analysis of bottom cores.
-

Document Type Damage Assessment/Air/Water
Title Air/Water Study Number 4
Injury to Deep Water (>20 meters) Benthic Infaunal
Resources from Petroleum Hydrocarbons
Author NOAA, ADEC
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study was combined, in 1990, with A/W Study #2. Benthic infaunal communities have historically served as useful indicators of subtidal health in polluted areas. Objectives are to:

- A. Determine injury to the benthic infaunal resource.
- B. Quantify injury to the deep water benthic infaunal resource.
- C. Determine persistence of injury to benthic resources.
- D. Determine if changes occurred in the macro-benthos by comparing species richness, species diversity, general abundance and biomass, and trophic composition of the benthic biota.
- E. Determine if temporal changes will occur in the macro-benthos between oiled and unoled bays by comparing species richness species diversity, general abundance and biomass, and trophic composition of the benthic biota at specific stations.
- F. If changes are detected in the infauna, examine the relationship between the accumulation and retention of

Document Type Damage Assessment/Air/Water
Title Air/Water Study Number 5
Injury to the Air Resource from the Release of Oil -
Generated Volatile Organic Compounds
Author ADEC
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

The high levels of VOCs released into the atmosphere by oil from the EVOS have adverse health implications for mammals and birds in the spill zone. Objectives of this study were to:

- A. Model the ambient VOC concentrations as a function of time and distance from Bligh Reef.
- B. Establish *zones of concentration* areas with predicted VOC concentrations exceeding federal health standards.
- C. Model loss rates of VOCs from crude oil to assist in mass balance calculations and to verify ambient air models.

Document Type Damage Assessment/Archaeology
Title Determination of Injury to Cultural Resources
Author USFS, ADNR
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This three year (1989-91) study includes activities designed to identify injury to cultural resources from a scientific standpoint and develop the foundation for a program to restore and rehabilitate archaeological resources. To determine the injury caused by the EVOS, the study focuses on:

- A. Impacts on soil chemistry.
 - B. Impacts on soil structure and inclusions (stratigraphy; charcoal).
 - C. Impacts on artifacts including petroglyphs, bone, wood, ceramic, fiber and shell.
 - D. Impacts on vegetative cover of sites, including new or increased erosion on the sites.
 - E. Occurrence of theft or vandalism on sites, including new or increased incidences.
-

Document Type Damage Assessment/Bird
Title Bird Study Number 1
Further Examination of Bird Carcasses from the EVOS
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The 1991 proposal is a continuation of work carried out in 1989 and 1990 to assess injury to waterbirds. Objectives of the 1991 study are to:

- A. Re-examine carcasses for the refinement of bird numbers and refine identification from a broad to a more specific level.
 - B. Classify carcasses according to the amount and distribution of oil on the plumes.
 - C. Reorganize the storage system for the birds to allow for quick and easy retrieval of specific birds.
 - D. Update log sheets.
 - E. Gather data that are of value to other bird studies.
-

Document Type Damage Assessment/Bird
Title Bird Study Number 2
Surveys to Determine Distribution and Abundance of
Migratory Birds in PWS and the Northern Gulf of Alaska
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study is a continuation of a similar study undertaken in 1989 and 1990 to examine whether the EVOS caused a decline in the distribution and abundance of waterbirds in the waters and shorelines affected by the spill, including PWS, Kodiak Island and the northern portion of Shelikof Strait. The objectives of this three year study are to:

A. Determine distribution and estimate abundance of waterbirds in PWS.

B. To test the hypothesis that estimates of waterbird relative abundances, using new and comparable historic data, are not significantly lower in oiled than non-oiled area in PWS.

C. To estimate the long and short-term trends of populations.

Document Type Damage Assessment/Bird
Title Bird Study Number 3 - Population Surveys of Seabird
Nesting Colonies in PWS, the Outside Coast ... Emphasis on
Changes of Numbers and Reproduction of Murres
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date
Source OSPIC

There are approximately 320 seabird colonies, not including the Semidi Islands, that occur within the area affected by the oil Spill. The EVOS prompted resurvey seabird colonies in PWS and other areas westward along the spill trajectory. Most of these colonies were censused at least two and up to six different years out of the previous 17 years prior to the oil spill. Cliff-nesting species such as the black-legged kittiwake and common murre were the primary emphasis of the 1989-90 census.

This study will continue this year to look at changes in numbers of adult murres at the breeding colonies selected: (1) Chiswell Islands, (2) Barren Islands, (3) Puale Bay/Cape Unalishagvak, and (4) Semidi Islands. Productivity and phenology will be measured from land-based plots in the Semidis and compared with that recorded similarly at the Puale Bay colony to develop estimates of productivity and phenology at the other colonies where land-based plots are not feasible.

Document Type Damage Assessment/Bird
Title Bird Study Number 5
Impact Assessment of the EVOS on Peale's Peregrine
Falcons
Author USFWS
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

The goal of this two year (1989-90) is to determine whether the EVOS has had, or will have, a measurable impact on Peale's peregrine falcons in PWS and coastal Kenai Peninsula. The objectives of this study were to:

- A. Test the hypothesis that nest site occupancy and productivity are lower in the project area as a result of EVOS than in other populations.
 - B. Test the hypothesis that the quantities of vanadium and nickel in peregrine feathers are the same for birds nesting in oiled and non-oiled areas.
 - C. Count and identify prey remains collected at aeries.
 - D. Test the hypothesis that the level of pesticide contamination of egg clutches in the project area is less than contamination levels reported in scientific literature.
-

Document Type Damage Assessment/Bird
Title Bird Study Number 6
Assessment of the Abundance of Marbled Murrelets at
Sites Along the Kenai Peninsula and Prince William Sound
Author USFWS
Publication 1989 State/Federal NRDA Plan
Publication Date
Source OSPIC

Small diving seabirds, such as the marbled murrelet, that frequent nearshore areas, have the highest oil vulnerability index of any bird. An estimated 103, 000 murrelets are widely distributed throughout PWS during the summer. The area affected by the EVOS has a large proportion of the Alaskan breeding population. The objectives of this study were to:

- A. Determine if populations of marbled murrelets at oiled sites have declined compared with populations at non-oiled sites.
 - B. Determine if there is evidence of marbled murrelet breeding activity at sites in oiled areas.
 - C. Determine if adult marbled murrelets at oil-affected and non-oil-affected sites contain petroleum hydrocarbons.
 - D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Bird
Title Bird Study Number 8
Assessment of Injuries to Waterbirds from EVOS on the
Reproductive Success of Black-legged Kittiwakes in PWS
Author USFWS
Publication 1989 State/Federal NRDA Plan
Publication Date
Source OSPIC
Black-legged kittiwakes are the most abundant colonial
seabird in PWS. Kittiwakes nesting at 26 colonies in PWS
have been studied for the last five years. Baseline data are
available on these colonies for num

Document Type Damage Assessment/Bird
Title Bird Study Number 10
Assessment of Injury to Glaucous-Winged Gulls using
Prince William Sound
Author USFWS
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC
Since the EVOS, a high percentage of glaucous-winged gulls
observed have been oiled. Objectives of this study were to:

- A. Determine the number of breeding glaucous-winged gull
pairs and nests in 1989 in the Egg Island colony, and
compare these data to historical data.
- B. Compare previously determined productivity indices
with productivity observed in 1989.
- C. Determine the cause of egg-hatching failure by direct
observation and contaminant analysis.
- D. Determine chick mortality rates and those portions
attributable to oil contamination.
- E. Determine losses in colony productivity attributable to
oil.

Document Type Damage Assessment/Bird
Title Bird Study Number 11
Injury Assessment of Hydrocarbon Uptake by Sea Ducks in
Prince William Sound
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This three year study (1989-91) focuses on the effects of petroleum hydrocarbon ingestion by harlequin ducks, Barrow's goldeneyes, common goldeneyes, black scoters, surf scoters, and white-winged scoters in PWS as a result of the EVOS. The six sea duck species included in this study are heavily dependent on intertidal and subtidal marine invertebrates. Objectives are to:

- A. Develop a data base describing food habits of the six species.
 - B. Obtain data from other NRDA studies on petroleum hydrocarbon levels in marine invertebrates from the PWS area and relate them to hydrocarbon levels in invertebrates from sea duck gut samples.
 - C. Chemically analyze petroleum hydrocarbon levels in sea duck tissues and body fluids.
 - D. Compare the incidence of petroleum hydrocarbons in sea duck tissues between affected areas and control area.
 - E. Estimate the ingested petroleum hydrocarbon effects on morbidity and mortality of sea ducks.
-

Document Type Damage Assessment/Bird
Title Bird Study Number 12
Assessment of Injury to Shorebirds Staging and Nesting in
Rocky Intertidal Habitats of PWS and the Kenai Peninsula
Author USFWS
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Up to a half-million shorebirds stage in rocky intertidal habitats of PWS in areas heavily affected by oil from the EVOS. Objectives of this study were to:

- A. Estimate the time of exposure and total number of shorebirds of each species exposed to contaminated beaches.
 - B. Determine the proportion of shorebirds that become directly contaminated with oil on plumage, feet, or bills.
 - C. Determine the minimum proportion of shorebirds that ingest oil by preening, foraging or roosting in affected areas, or ingesting contaminated prey.
 - D. Assess the degree to which oiled substrates interfere with feeding behavior of shorebirds.
 - E. Document direct mortality and adverse physiological effects.
 - F. Quantify population and reproductive success.
 - G. Compare levels of hydrocarbon contamination in birds using oiled and non-oiled areas.
 - H. Determine reproductive success of a sample of shorebirds that stage in the affected area and nest in Bering Sea coastal habitat.
-

Document Type Damage Assessment/Bird
Title Bird Study Number 13
Preliminary Survey of Passerine Birds in Prince William
Sound to Assess Impact of the EVOS
Author USFWS
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This two year (1989-90) study is designed to assess the impact of the EVOS on passerine species that are dependent upon intertidal areas of PWS. These species include: gray jay, Steller's jay, black-billed magpie, common raven, northwestern crow, great blue heron, and others. Objectives of the 1989 study were to:

- A. Document passerine scavenging of oiled carcasses.
- B. Compare numbers of passerine and other non-game bird species in oiled to non-oiled areas.
- C. Determine hydrocarbon levels in tissue.

The 1990 study is a reconnaissance survey only. Objectives of the 1990 work were to:

- A. Document the numbers of passerine species in oiled and non-oiled study sites in PWS.
 - B. Compare count data for 1990 with historical data.
-

Document Type Damage Assessment/Bird
Title Bird Study Number 14
Effects on Migratory Birds of Exposure to North Slope
Crude Oil
Author USFWS
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

The EVOS was anticipated to expose large numbers of numerous species of birds to varying amounts of crude oil. Objectives of this study were to:

- A. Review and synthesize relevant information regarding toxicological effects of North Slope crude oil on birds.
 - B. Determine adequacy of past studies in representing the current situation involving a wide range of taxonomically different birds.
 - C. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Coastal Habitat
Title Coastal Habitat Intertidal Study Number 1A
Comprehensive Assessment of Injury to Coastal Habitats
Author USFS
Publication 1991 State/Federal NRDA Plan
Publication Date
Source OSPIC

The purpose of this study is to document and quantify injuries to biological resources found in the intertidal zone throughout the shoreline areas affected by the EVOS. The first year of field studies was completed on 11/1/89. Selection and ground truthing of study sites were concluded in 1990 as part of Phase I. Phase II is an intensive evaluation of the study sites to determine the extent of injury to natural resources. The objective of this study is to estimate the effects of various degrees of oiling on the quantity (abundance and biomass), quality (reproduction and growth rate), and composition (diversity and proportion of standing stock) of key species in the critical trophic levels of coastal communities. These data are expected to provide evidence of injury to the overall health and productivity of these critical coastal habitats, and provide information necessary to the more species-specific studies on the effects of the oil spill on affected mammals, birds and fish that use these habitats. Impact results obtained from this study will allow for extrapolation of impact to similar habitats within the entire affected area.

Document Type Damage Assessment/Coastal Habitat
Title Coastal Habitat Intertidal Study Number 1B
Pre-Spill and Post-Spill Concentrations of Hydrocarbons in
Sediments and Mussels at Intertidal Sites ... PWS and GOA
Author NOAA
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

Ten intertidal sites in PWS and Port Valdez were sampled for sediments, mussels, water, and fish annually from 1977 to 1981 to establish a baseline against which future changes in hydrocarbon concentrations can be compared. Sites were initially sampled in spring, summer and fall to determine if short-term changes occurred during the warm season. These sites were resampled in March 1989 immediately before several of them were impacted by the EVOS. Objectives of this study are:

- A. To sample and estimate hydrocarbon concentrations in mussels and sediments from 20 sites.
 - B. To test the hypothesis that hydrocarbon contamination of sediments and mussels is the same for the pre-spill and post-spill period.
 - C. To document changes in abundance and distribution of intertidal epifauna and test the hypothesis that no differences occur at oiled and unoled sites.
-

Document Type Damage Assessment/Economics
Title Economics Study Number 8
Economic Damage Assessment of Injury to Research
Programs Affected by the EVOS
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The EVOS affected research programs in the vicinity of the spill, resulting in damage to or loss of various research and resource monitoring studies. The objective of this three year (1989-91) study is to assess damage to and economic loss of research investigations, and account for the cost of resources expended in affected studies, focusing on research-based expenditures made or committed to before the oil spill.

Document Type Damage Assessment/Economics
Title Economics Study Number 1
Commercial Fisheries Losses Caused by the EVOS
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study is designed to assess the economic value of injury to natural resources associated with the EVOS. The 1991 work is a continuation of the previous two years' effort.

The EVOS may have resulted in substantially reduced seafood production at several ports including Cordova, Seward, Kodiak, Kenai, and Homer. Both short-term impacts, through closure of certain fisheries, and long-term effects, such as reductions in population that will not become apparent for several years, may occur. Adversely affected species may include: salmon, Pacific herring, shellfish and groundfish. The primary objective of this study is to measure the economic loss to seafood consumers caused by the EVOS.

Document Type Damage Assessment/Economics
Title Economics Study Number 2
Fishing Industry Costs
Author
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study is designed to assess the economic value of injury to natural resources associated with the EVOS. It was conducted as an independent study in 1989 and merged with Economics Study #1 in 1990. The objectives of this study are to:

- A. Identify the effects of the oil spill on fish harvesting, processing, and marketing costs.
- B. Analyze the competitiveness of input markets important to the commercial fisheries affected by the oil spill.

Document Type Damage Assessment/Economics
Title Economics Study Number 3
Bioeconomics Models for Damage Assessment
Author
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study is designed to assess the economic value of injury to natural resources associated with the EVOS. It was conducted as an independent study in 1989 and merged with Economics Study #1 in 1990.

The linkages between the effects of the oil spill on fishery resources and the commercial fisheries may best be quantified through the development of bioeconomic models. The objective of this study is to measure the interactions between the fishery resources and the commercial fisheries, evaluating the direct cost of the oil spill on the use value of these commercial fisheries. Biological and economic models will be developed and integrated using established techniques.

Document Type Damage Assessment/Economics
Title Economics Study Number 4
Effects of the EVOS on the Value of Public Land
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The EVOS affected subtidal, intertidal, tidal and upland areas on the shores of PWS and the GOA. This two year (1989-90) study assessed the lost market value of publicly held lands attributable to the oil spill. It estimated market demand for leases and sales of land in the impacted areas, and projected changes in total value of public lands.

Document Type Damage Assessment/Economics
Title Economics Study Number 5
Economic Damages to Recreation
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This three year (1989-91) study is designed to estimate economic damages to recreationists. The study looks at the impact of the EVOS on various consumptive and nonconsumptive recreational activities including: sea kayaking, charterboat activities, recreational fishing, cruise ship tours and general tourist activities.

Document Type Damage Assessment/Economics
Title Economics Study Number 6
Losses to Subsistence Households
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This three year (1989-91) is designed to assess the impact of the EVOS on subsistence harvests and subsistence users of natural resources affected by the EVOS. Following the EVOS, subsistence harvests were reduced in several communities. This could have important ramifications in the economy and social order of the communities. The objectives of this study are to:

- A. Conduct a literature review and compile base-line data.
 - B. Document the extent of oil contact and clean-up on or near historic harvest sites.
 - C. Document the changes in subsistence use through time.
 - D. Document local social and economic changes that affect subsistence use.
 - E. Assign monetary values to losses to subsistence households.
-

Document Type Damage Assessment/Economics
Title Economics Study Number 7
Total Value of Natural Resources Injured by the EVOS
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The object of this study is to determine the loss in the value of the natural resources injured by the EVOS. This study assesses both use and intrinsic values of the injured natural resources. Intrinsic values include existence value, option value, and bequest value. These values are independent of the economic values arising from direct use of natural resources and cannot be measured by observing use of the area affected by the EVOS. Resources with intrinsic values include fish, birds, and mammals, along with wilderness character, ecological integrity and/or scenic quality of certain areas. These values are only imperfectly captured by the prices of goods traded in markets.

This study is designed to use the contingent valuation method to determine the loss in both intrinsic and use values resulting from the oil spill.

Document Type Damage Assessment/Economics
Title Economics Study Number 9
Quantification of Damage to Archaeological Resources
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

Archaeological sites along the oiled coastline may have been physically injured by the oil. Determination of the number of cultural resources impacted by the EVOS as well as the type and extent of injury to the sites is being carried out as part of the study entitled *Determination of Injury to Cultural Resources*. This economics study is limited to quantifying the loss to archaeological resources.

Document Type Damage Assessment/Economics
Title Economics Study Number 10
Petroleum Products Price Impacts
Author
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The objective of this one year study is to estimate economic damages to consumers of petroleum products. Retail prices for gasoline on the West Coast of the United States increased immediately after the EVOS. This increase is observed both relative to earlier periods in 1989 and relative to prices in other parts of the country immediately after the spill. Similar increases in other petroleum products may also have occurred. This study will conduct a statistical analysis of the relationship between the EVOS and the observed petroleum market price increases. If it appears that a connection between the two events can be shown, the damage to consumers of petroleum products will be estimated.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 1
Injury to Salmon Spawning Areas in Prince William Sound
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

In order to detect injury to pink and chum salmon stocks, intertidal contamination will be documented by this three year study (1989-91) and correlated with trends in adult returns. A total of 411 streams were surveyed in 1989 for the presence of oil in intertidal spawning areas and 138 streams from among the 218 in the historic aerial survey program were included in a ground census of pink and chum salmon escapements. In 1990 the oil survey was limited to 138 streams in the escapement censusing portion of the project. Results of this study will provide accurate estimates of pink and chum salmon escapement to each stream surveyed; will correlate escapement estimates based on aerial counts with weir and ground counts to estimate past and current year escapements; will provide estimates of post-spill distribution of spawning within stream zones and among streams; will estimate total intertidal and upstream spawning habitat for each stream; will estimate average stream life for pink and chum salmon in PWS; will provide coded wire tag data for F/S Study #3; will document oiling conditions in intertidal spawning and rearing habitat and presence of oil in tissues of mussels and salmon that rear or live there; and will provide an atlas of aerial photographs and detailed maps of important spawning sites.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 5
Injury to Dolly Varden Char and Cutthroat Trout in Prince
William Sound
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This proposed study will be the third year of a research program designed to compare the survival and growth of populations of Dolly Varden char and cutthroat trout differentially affected by the EVOS in Prince William Sound. The objectives of this study are to:

- A. Test if there is no difference in annual survival rates of char and cutthroat trout between oiled and control groups during 1989-91 and 1990-91.
 - B. Test if there is no difference in annual growth rates of char and cutthroat trout between oiled and control groups during 1989-91 and 1990-91.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 2
Injury to Salmon Eggs and Preemergent Fry in Prince
William Sound
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This three year study (1989-91) is designed to assess the effect of the EVOS on egg and fry of wild stock pink and chum salmon. The objectives of this study are to:

- A. Estimate the density, by tide zone, of preemergent fry in 48 streams, and eggs in 31 streams using numbers of live and dead eggs and fry.
 - B. Estimate egg mortality and overwinter survival of pink and chum salmon eggs in both oiled and unoiled streams.
 - C. Document hydrocarbon contamination in preemergent fry using tissue hydrocarbon analysis, and eggs and preemergent fry using mixed-function oxidase (MFO) analysis.
 - D. Assess any loss in adult production from changes in overwinter survival using the results of F/S Studies 1, 2, 3, and 4.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 3
Salmon Coded-Wire Tag Studies in Prince William Sound
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This three year study was designed to measure losses in salmon production due to the EVOS. This study will contribute to estimates of survival and production for hatchery and wild stocks in oiled and unoled areas by quantifying fry outmigration, the wild and hatchery stock components of the catch, and the hatchery escapements. Objectives of the study are to:

- A. Estimate catch, escapement, and survival rates of pink, chum, sockeye, coho, and chinook salmon released from five hatcheries in PWS.
 - B. Estimate catch of the combined wild stocks of pink salmon in PWS and estimate differences in relative survival rates between pre- and post-spill brood years.
 - C. Estimate survival rates of wild pink salmon from three streams with contaminated estuaries and three with uncontaminated estuaries.
 - D. Estimate survival rates of wild stocks of sockeye salmon, two from oiled areas, and one from an unoled area.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 4
Early Marine Salmon Injury Assessment in Prince William Sound
Author ADF&G, NMFS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This proposed work is the continuation of a two part study that was carried out in 1989 and 1990.

Part I: Impacts of the Oil Spill on Migratory Behavior and Growth

Part II: Impact of the Oil Spill on Juvenile Pink and Chum Salmon and their Prey in Critical Nearshore Habitats

Goals of the study are to:

- A. Determine the effects of oil on abundance, distribution, growth, feeding habits, and behavior of pink salmon fry during their early marine residency.
 - B. Describe the effect of oil on the migration patterns of pink salmon fry in western PWS.
 - C. Quantify hydrocarbon contamination in juvenile salmon tissue.
 - D. Determine relationship between pink salmon fry growth and fry-to-adult survival.
 - E. Determine if hydrocarbon contamination affected the abundance of primary prey species of pink salmon fry.
 - F. Determine the effects of ingestion of whole oil on survival and growth of pink salmon fry.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 6
Prince William Sound and Gulf of Alaska Sport Fishery
Harvest and Effort
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study was completed in 1989. The objectives of this study were to:

- A. Determine recreational catch and harvest of salmon, rockfish, halibut, cutthroat trout, and Dolly Varden char.
 - B. Determine angler effort and identify the temporal and spatial distribution and location of origin of angling effort.
 - C. Determine percentage of oil-contaminated fish in the sport harvest.
 - D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 9
Early Marine Salmon Injury Assessment for the Kenai
Peninsula and Kodiak/Shelikof Strait
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study was completed in 1989 and not continued into 1990/91. The objectives of this study were to:

- A. Determine the effects of oil contamination on abundance, growth, and feeding habits of juvenile salmon during their early nearshore marine residence.
 - B. Determine hydrocarbon levels in tissues of juvenile salmon in oiled and control areas and document any oil-related mortalities and other adverse changes in viability.
 - C. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 10
Injury to Dolly Varden Char and Sockeye Salmon in the
Lower Kenai Peninsula
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Crude oil has contaminated nearshore and estuarine areas important to both Dolly Varden char and sockeye salmon. The objectives of this study are to:

- A. Compare survival rates of smolting Dolly Varden char from spawning streams within oiled and non-oiled areas of the lower Kenai Peninsula.
 - B. Determine the extent of migration by Dolly Varden char from non-oiled into oiled areas to overwinter.
 - C. Compare marine survival rates of sockeye salmon smolt in oiled areas of the lower Kenai Peninsula with known survival rates prior to the EVOS.
 - D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 11
Injury to Prince William Sound Herring
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The EVOS coincided with the annual migration of Pacific (*Clupea harengus pallasii*) to nearshore spawning areas. In 1989, a significant portion of the spawning area in PWS was located within areas contaminated by oil.

Additionally, adult spawning herring and newly hatched juveniles traversed areas impacted by oil and beach cleaning activities. The goal of this three year (1989-91) project is to determine whether the EVOS will have a measurable impact on populations of herring in PWS. Accurate and precise estimates of population abundance, age structure, weight, and length composition data are needed to accomplish this goal. In addition, the direct effects of oil contamination on spawning success and egg and larval survival will be determined.

This project is conducted in three parts:

- 1) herring spawn deposition estimation,
 - 2) herring age, weight, length, growth, and fecundity estimation,
 - 3) herring egg survival and egg loss estimation.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 12
Injury Assessment to Kodiak and Alaska Peninsula Herring
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Herring impact studies are designed to assess lethal and sublethal effects of the oil spill on egg survival and adult herring growth and reproduction. The objectives of this study are to:

A. Document the occurrence of herring spawn in oiled and non-oiled areas.

B. Compare growth increments of adult herring during 1989 with those for other years.

C. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 13
Effects of Hydrocarbons on Bivalves
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study is a continuation of work which was conducted during 1989 and 1990. During 1991, field work will be conducted only in PWS. Clam aging, data entry and analysis from 1989 and 1990 will continue. Objectives of this study are to:

- A. Test if the level of hydrocarbons in bivalves and in sediments is not related to the level of oil contamination of a beach.
 - B. Document the presence and type of damage to tissues and vital organs of bivalves.
 - C. Measure the growth rate of littleneck clams at beaches with varying degrees of oiling impact.
 - D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 14
Injury to Prince William Sound Crabs
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Crabs are known to be very sensitive to hydrocarbons. Brown king crab and Dungeness occur in PWS and are harvested by commercial, sport and subsistence users. The objectives of this study were to:

A. Assess the levels of hydrocarbons in Dungeness crabs at four oiled and four non-oiled sites in PWS.

B. Assess the levels of hydrocarbons in in brown king crabs at nine sites in PWS.

C. For both crab species, assess the incidence of limb loss and abnormalities, and assess selected reproductive factors. For Dungeness crabs, assess larval production from ovigerous females collected in oiled and non-oiled areas.

D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 15
Injury to Prince William Sound Spot Shrimp
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

The goal of this project is to determine possible damage to spot shrimp (*Pandalus platyceros*) from the EVOS. The study was begun in 1989 and is being proposed for continuation in 1991 as Subtidal Study #5. Spot shrimp are known to be sensitive to oil contamination in both the larval and adult phase. Samples are collected from oiled and non-oiled sites. Samples are analyzed to determine tissue hydrocarbon levels and tissue damage between oiled and non-oiled areas. Relative abundance, in terms of catch per unit effort, at each study site and changes in relative abundance over time will be tested to determine possible relationships with the level of oiling. A comparison with historical records will also be made. The size composition of the stock at each site will be estimated and, dependent upon recruitment, analyzed to determine whether the 1989 year class suffered a high mortality rate in areas of high oil impact relative to other year classes in non-oiled areas. Spot shrimp fecundity will also be determined and tested for significant annual and interannual differences between oiled and non-oiled sites.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 16
Prince William Sound Oysters
Author ADF&G, NOAA
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Oysters have been used elsewhere as an indicator species in oil spill impact assessments. Oysters accumulate petroleum hydrocarbons in their tissues but do not possess the enzyme systems for their metabolism. There are three oyster farms in PWS. The objectives of this study were to:

A. Determine the effects of oil contamination on Pacific oyster growth and survival.

B. Determine the effects of oil contamination on the physiology of Pacific oysters.

C. Measure rates of depuration and recovery of the sites impacted by the EVOS.

D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 17
Injury to Demersal Rockfish and Shallow Reef Habitats in
PWS and Along the Lower Kenai Peninsula
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This study was carried out in 1989 and 1990 as F/S Study #17 and is proposed for continuation in 1991 as Subtidal Study #6. The objectives of this study are to:

- A. Determine the presence or absence of hydrocarbons in demersal rockfish, benthic prey species, benthic suspension feeders, and sediments from sites in PWS and the LKP.
 - B. Determine the physiological effects resulting from oil contamination through histopathological examination of five organs, enzyme activity, examination of red blood cells for circulating micronuclei; and the examination of developing embryos.
 - C. Determine the feasibility of using toxicological analysis of gonads and pituitary glands to ascertain effects of oil contamination on growth and reproduction.
 - D. Determine the feasibility of using otolith microstructure to evaluate depressed growth as a result of oil contamination.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 17
Injury to Prince William Sound Rockfish
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study was carried out in 1989 and 1990 as F/S Study #17 and is proposed for continuation in 1991 as Subtidal Study #6. The 1989 objectives of this study were to:

- A. Sample rockfish populations from both oiled and control sites in previously studied areas of PWS.
 - B. Document the presence or absence of oiled rockfish, non-oiled rockfish, and oiled substrate in areas of fish kills.
 - C. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 18
Prince William Sound Trawl Assessment
Author NOAA
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

The field survey portion of this study was carried out during 1989 and 1990. Proposed work for 1991 includes data analysis and report preparation. The project is a multispecies trawl survey to collect samples from bottomfish for hydrocarbon analyses. The objectives of this study are to:

- A. Collect bile and tissue samples, and stomach contents from bottomfish.
 - B. Use CTD instrument to profile water characteristics throughout the sampling area.
 - C. Preserve any fish observed with abnormalities of any type for subsequent analysis.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 19
Injury to Larval Fish in Prince William Sound
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Larvae of a number of finfish and shellfish important to commercial, sport and subsistence fisheries may have been affected by petroleum hydrocarbons released by the EVOS. The objectives of this study were to:

- A. Determine the spatial and temporal presence of larval finfish and shellfish in PWS.
 - B. Determine larval distribution of finfish and shellfish in relation to distribution of petroleum hydrocarbons in PWS.
 - C. Estimate loss of larval finfish and shellfish production during 1989 as a result of the EVOS with assistance from literature data on toxicity.
 - D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 20
Undersea Observations
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source QSPIC

The primary method utilized in this study was direct observation by remote-operated vehicle coupled with limited ground truthing in order to confirm the extent of oil on the sea floor in several study areas, and to guide selection of specific study sites. Objectives of this study were to:

- A. Identify appropriate sample areas for the brown king crab, spot shrimp, and rockfish/halibut studies.
 - B. Direct selection of specific sites within oiled and control areas for pairwise evaluation.
 - C. Provide direct support to the rockfish injury assessment study in Resurrection Bay.
 - D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 21
Injury to Clams Outside Prince William Sound
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study was begun in 1989 and continued as part of F/S Study #13 during 1990, and proposed for continuation as part of F/S #13 in 1991. Bivalve mollusks are an important component of the food chain and support subsistence and sport fisheries in Resurrection Bay, lower Cook Inlet, Kodiak Island and the Alaska Peninsula. The objectives of this study are to:

- A. Determine level of hydrocarbons in bivalves at oiled and non-oiled beach sites.
- B. Determine the effects of oil contamination on tissues and organs of bivalves.
- C. Determine and compare any bivalve mortality between oiled and control sites.
- D. Determine and compare annual growth rates of bivalves between oiled and control areas.
- E. Document any changes in numbers of young-of-the-year clams.
- F. Identify potential alternative methods and strategies for restoration of lost use populations or habitat where

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 22
Injury to Crabs Outside Prince William Sound
Author NOAA
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This project, begun in 1989 and continued in 1990, is designed to provide quantitative data regarding adverse impacts on populations of Dungeness crab outside PWS as a result of the EVOS. The objectives of this study were to:

- A. Determine the levels of hydrocarbons in Dungeness crabs in oiled and unoiled sites along the eastern Alaska Peninsula and/or near Kodiak Island.
 - B. Assess reproductive condition of crabs in oiled and unoiled areas by measuring such variables as percentage of ovigerous crabs, fecundity and egg loss, condition and development.
 - C. Determine the incidence of limb loss and of abnormalities in newly formed crab exoskeletons in oiled and unoiled areas.
 - D. Compare the strength of larval settlement in oiled and unoiled areas using artificial substrates.
 - E. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 23
Injury to Rockfish, Halibut, and Lingcod Along the Lower
Kenai Peninsula
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study was conducted in 1989 as F/S Study #23 and combined in 1990 with F/S Study #17-*Rockfish Injury*. The recreational, sport, commercial and subsistence fisheries for halibut, rockfish and lingcod are extremely important in Alaska. Oil contamination of their benthic habitat resulting from the EVOS could pose a significant problem for these fisheries. The objectives of this study are to:

- A. Assess contamination of rockfish and lingcod from oiled and non-oiled populations in and offshore of Resurrection Bay.
 - B. Document the presence or absence of oiled rockfish and lingcod, non-oiled rockfish and lingcod, and oiled substrate in areas of fish kills.
 - C. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 24 - Assessment of Oil Spill Impacts on Fishery Resources: Measurement of Hydrocarbons and their Metabolites, and their Effects,

Author NOAA
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This study was conducted in 1989 and 1990 and is proposed for continuation in 1991 as Subtidal Study Number Seven-*Injury to Demersal Fish*. This project measures exposure to oil and oil components in the fish of PWS and other areas affected by the EVOS, by determining levels of hydrocarbon metabolites in bile and by measuring hepatic aryl hydrocarbon hydroxylase [AHH] activities. The study also measures a range of biological effects, especially indicators of reproductive dysfunction and histopathological effects.

Preliminary studies in 1990 suggested that pollock were being exposed to petroleum both inside and outside PWS. This study was expanded in 1991 to cover assessment of exposure and possible associated biological effects in pollock, both inside and outside PWS.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 25
Injury to Scallop Resources in Kodiak Waters
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Weathervane scallops form the basis of a commercial fishery based primarily out of Kodiak. This resource may have been exposed to petroleum as a result of the EVOS. The objectives of this study were to:

- A. Assess the effects of oil contamination on scallop growth and survival.
 - B. Assess the effects of oil contamination on hydrocarbon content and physiology.
 - C. Monitor rates of depuration and recovery by scallops.
 - D. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 26
Injury to Impacts on Sea Urchins off Kodiak Island
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Green sea urchins support a rapidly growing commercial fishery in Kodiak. The objectives of this study were to:

- A. Measure relative abundance of green sea urchins in oiled and non-oiled areas.
- B. Determine roe production in oiled and non-oiled areas.
- C. Determine the incidence of abnormalities in ovarian development in oiled and non-oiled areas.
- D. Determine recruitment of young urchins in oiled and non-oiled areas.
- E. Determine the toxicity of crude oil to urchin larvae.
- F. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 27
Sockeye Salmon Overescapement
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This project, which was begun in 1990, examines the effects of large 1989 spawning escapements on the resulting progeny for a select subset of sockeye nursery lakes in the Kenai and Kodiak. This study is necessary to obtain a more timely assessment of impact, since adult sockeye produced from the 1989 escapement will not return until the 1994/95 season. Objectives of this study are to:

- A. Estimate the number, age, and size of sockeye salmon juveniles rearing in selected freshwater systems.
 - B. Estimate the number, age, and size of sockeye salmon smolts migrating from selected freshwater systems.
 - C. Determine effects of large escapements resulting from fishery closures caused by the EVOS on the rearing capacity of selected nursery lakes through:
 - 1. Analysis of age and growth of juveniles and smolts.
 - 2. Examination of nursery area nutrient budgets and plankton populations.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 28
Salmon Oil Spill Injury Model and Run Reconstruction
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study, which was begun in 1990, integrates results obtained from Fish/Shellfish Studies 1-10 to determine damages to wild Pacific salmon (*Oncorhynchus spp.*) exposed to crude oil from the EVOS. Two different procedures may be used in this study. The first, based on reconstructing salmon runs will use total adult returns (harvests and spawning escapements) to determine stock specific returns and production to oiled and unoiled areas. The second, based on life history modeling, will use spawning escapements and subsequent estimates of survival at various life history stages to project future adult returns to oiled and unoiled areas. Both approaches will use data from F/S studies 1-10, as well as information from the scientific literature, to set parameter values in computational models.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 30
Data Base Management
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study was begun in 1990 and proposed for completion in 1991. The purpose of this study is to make original fisheries data readily available in electronic form to agency and non-agency personnel so that data analyses can be conducted in an efficient and cost effective manner. The data to be placed under the database management system will drawn from two categories:

1. Historical data necessary to the interpretation and implementation of the results of NRDA studies.
2. Data resulting from NRDA studies.

A MSDOS relational database management application will be developed. The database will be accessible to authorized personal computers through a linked system of Local Area Networks covering offices in Kodiak, Anchorage, Cordova and Juneau.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 7A
Injury to Pink/Chum Salmon Spawning Within Lower Cook
Inlet and Kenai Fjords
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Field work on this study was conducted during 1989 and 1990; data analysis and final report preparation are being funded for 1991. This project was designed to evaluate the distribution of pink and chum salmon spawning in intertidal and upstream areas as a result of oil contamination from the EVOS. Objectives of this study are to:

A. Count the numbers of spawning salmon by species and by intertidal and upstream areas for nine streams in the Lower Cook Inlet/Kenai Fjords area.

B. Produce maps of spawner distribution for each stream sampled.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 7B
Injury to Pink Salmon Spawning Areas Within the Kodiak
and Chignik Areas
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Field work on this study was conducted during 1989 and 1990; data analysis and final report preparation are being funded for 1991. Objectives of this study are to:

- A. Estimate total pink salmon escapements for streams where historic pre-emergent sac fry density data exist. This includes 44 Kodiak and 18 Chignik streams.
 - B. Define the distribution of spawning pink salmon for index streams within the Kodiak and Chignik management areas. This entails mapping and photographing spawner distribution.
 - C. Estimate total available spawning habitat for index streams within the Kodiak and Chignik management areas.
-

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 8A
Injury to Pink and Chum Salmon Eggs and Pre-Emergent Fry
Within Lower Cook Inlet and Kenai Fjord
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Field work on this study was conducted during 1989 and 1990; data analysis and final report preparation are being funded for 1991. Objectives of this study are to:

A. Estimate abundance of pink and chum salmon eggs and pre-emergent fry by intertidal and upstream areas for nine streams in the lower CIK. Six of the streams were studied in 1989.

B. Estimate overwinter mortality of pink and chum salmon eggs.

C. Estimate reductions, if any, in pink and chum salmon pre-emergent fry abundance due to oiling.

Document Type Damage Assessment/Fish/Shellfish
Title Fish/Shellfish Study Number 8B
Injury to Pink Salmon Egg and Pre-Emergent Fry In the
Kodiak and Chignik Management Areas
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Field work on this study was conducted during 1989 and 1990; data analysis and final report preparation are being funded for 1991. Objectives of this study are to:

- A. Estimate potential egg deposition for all Kodiak and Chignik pre-emergent index streams.
 - B. Estimate pink salmon fry density for Kodiak and Chignik index streams.
 - C. Estimate pink salmon survival from potential egg deposition to pre-emergent fry.
 - D. Assess changes, if any, of pink salmon pre-emergent fry abundance in 1991 due to the oil spill.
 - E. Estimate the 1991 adult pink salmon return by using the 1990 fry index data.
-

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6F
Bioindicators of Damage to Sea Otters From Exposure to Oil
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

In PWS, adult female sea otters were instrumented with radio transmitters in the fall of 1989 and spring of 1990, and sea otter pups instrumented in the fall of 1990. Blood samples were collected at the time of capture. Since instrumentation, they have been monitored to measure survival and reproduction rates. Instrumented sea otters in the western Sound will be targeted for sample collection in the summer of 1991.

Specific objectives are:

- A. Comparison of blood samples from sea otters in western PWS and southeast Alaska.
 - B. To relate blood analyses on sea otters in western PWS with outcome (survival and reproductive rates) and to compare blood samples collected in 1991 to previous samples collected on the same otters.
 - C. To measure pre-weaning growth rates of sea otter pups born in 1991 in western PWS.
 - D. To conduct physical examinations of all captured sea otters.
-

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6H
Sea Otter Damage Assessment Studies: Database
Management and Data Analysis
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The objectives of this study, proposed to commence in 1991 are:

A. To provide database support, including data entry, editing, and record management, for ongoing sea otter studies.

B. To support statistical analyses and write-up of data generated in previous and ongoing sea otter studies.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 7
Assess the Fate of Sea Otters Oiled and Rehabilitated as a Result of the EVOS
Author USFWS
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Incorporated as part of Marine Mammal Study Number Six.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 1 - Effects of the EVOS on the Distribution and Abundance of Humpback Whales in PWS, Southeast Alaska and Kodiak Archipelago
Author NOAA
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

During 1989, photographs of individual humpback whales occurring in PWS and Southeast Alaska were collected to assist in determining the impact of the EVOS on humpback whale life history and ecology. The 1990 effort resulted in photographs of individual humpback whales observed in PWS from early June to late September. Objectives of the two year study were to:

- A. Count and individually identify humpback whales in PWS.
 - B. Test the hypothesis that humpback whale distribution and abundance within PWS is similar to that reported for 1989 and previous years.
 - C. Test the hypothesis that humpback whale natality has not changed since the EVOS.
 - D. Test the hypothesis that humpback whale mortality rates have not changed since the EVOS.
-

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 2
Assessment of Injuries to Killer Whales in PWS
Author NOAA
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study is an attempt to document both the lethal and sublethal impact of the spill on the integrity of recognized family groups, natality and mortality, continuity of habitat usage, and seasonal distribution and abundance. During the first two years of the project, photographs of individual killer whales were collected to assess the impact of the EVOS on killer whale life history and ecology. Results of this research will aid in the determination of the extent of displacement or reduction in numbers of killer whales as a result of the EVOS.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 3
Cetacean Necropsies to Determine Injury from the Exxon Valdez Oil Spill
Author NOAA
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

Because gray whales and other cetaceans are known to feed in the Gulf of Alaska, they may have been affected by the EVOS. By mid-May 1989, four gray whale carcasses were found at Tugidak Island (near Kodiak) following the spill. The objective of this study was to:

A. Locate cetaceans stranded from Kayak Island through Unimak Pass and conduct necropsies on each animal to determine if the cause of death is a result of the oil spill.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 4
Assessment of Injury to Steller Sea Lions in Prince
William Sound and the Gulf of Alaska
Author NOAA
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Field work on this study was carried out during 1989 and 1990; data analysis and report preparation are being funded for 1991. Steller sea lions were present in large numbers in PWS during the EVOS and were exposed to oil immediately after the spill. Objectives of this study are to:

- A. Test the hypothesis that premature pupping occurs at a higher rate at a hauling area nearer the oil spill.
 - B. Test the hypothesis that pup production is lower in the vicinity of the oil spill.
 - C. Estimate hydrocarbon levels in sea lion tissues.
 - D. Test the hypothesis that tissue damage has occurred.
-

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 5
Assessment of Injury to Harbor Seals in PWS, GOA and
Adjacent Areas
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study was designed to:

- A. Evaluate the effects of the EVOS on the distribution of harbor seals at haulouts within the Sound.
- B. Evaluate trends in Harbor Seal numbers.
- C. Determine reproductive impacts and pup survival.

Results from 1989 and 1990 aerial surveys on oiled and unoled haulouts have been compared to determine whether the number of pups/non-pups is similar in oiled and unoled areas and whether the proportion changed from 1989 to 1990. Results of fall 1989 and 1990 surveys have been compared to results of surveys flown in 1984 and 1988 to determine whether trends in numbers are similar in oiled and unoled areas.

Work proposed for 1991 is intended to complete histopathological and toxicological analyses of harbor seal tissues and to provide counts of harbor seals on haulouts in oiled and unoled parts of PWS during pupping and molting in 1991.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6A
Boat Surveys to Determine Sea Otter Abundance in PWS
Following the EVOS
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The objectives of the 1989 and 1990 work were to:

- A. Determine the magnitude of the injury to sea otter populations.
- B. Determine long-term effects of the spill on sea otters.
- C. Document presence/persistence of petroleum hydrocarbons in live and dead sea otters.
- D. Identify potential alternative restoration strategies.

The 1991 study is designed to:

- A. Compare sea otter densities between oiled and unoiled areas.
 - B. Compare sea otter densities between pre- and post-spill surveys in oiled and unoiled areas.
 - C. Estimate the magnitude of any change between pre- and post spill sea otter population estimates in PWS.
 - D. To estimate post-spill population size of sea otters in PWS.
 - E. To estimate winter 1991 offshore densities of sea otters in oiled and unoiled areas.
-

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6B
Intersection Model of Sea Otter Mortality
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The objective of this study is to develop an analytical model capable of estimating rates of exposure of sea otters to oil, degree of oiling , and mortality along the Kenai Peninsula following the EVOS.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6C
Radiotelemetry Studies on Sea Otters in PWS
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study represents a continuation of the radio-telemetry work begun in 1989. The goal is to determine both the acute and the chronic consequences of exposure to crude oil from the EVOS on sea otters that were not treated and remained in the affected habitat, as well as on otters that were treated at otter rehabilitation centers following exposure. From the wild population, 100 adult and 64 dependent sea otters were captured, examined, instrumented with radio-transmitters, and monitored in PWS beginning in October, 1989 to the present. Another 45 animals were radio-instrumented during June, 1989, released in eastern PWS during July, and continuously monitored until the present. The goal of this research effort is to provide data on the survival , reproduction, and behavior of the sea otters following release from these centers, and by doing so, to gain insights into both the damage done to the PWS sea otter population and in the efficacy of the "rehabilitation" strategy.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6D
Sea Otter Prey Selection and Foraging Success in Western PWS
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The purpose of this study is to describe the species composition and relative frequency of occurrence of prey selected by sea otters in three locations in western PWS, following the EVOS. The results of this study will quantify the extent to which sea otters are foraging on contaminated prey in these areas and allow evaluation of the need for the collection of additional sea otter prey for hydrocarbon analysis.

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6E
Sea Otter Mortality in PWS Following the Exxon Valdez Oil Spill
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The overall objective of this study is to conduct beach surveys in three areas of PWS and collect sea otter carcasses to determine:

- 1) If mortality patterns [age class, sex distribution, and rates of carcass deposition] are similar to previous years.
 - 2) Post-spill trends in mortality.
-

Document Type Damage Assessment/Marine Mammal
Title Marine Mammal Study Number 6G
Assessment of Pathological Processes and Mechanisms of
Toxicity in Sea Otters that Died Following the EVOS
Author USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

Objectives of this study to be carried out in 1991 are:

A. To determine the efficacy of sea otter medical treatment and rehabilitation as a viable method for the restoration of the Alaskan sea otter population following exposure to crude oil.

B. To evaluate chronic effects of residual oil in the environment through examination of sea otter carcasses recovered in the oil spill zone in 1991. Work conducted under this study will continue efforts that have been ongoing since the spill.

Document Type Damage Assessment/Restoration
Title 1990 State/Federal Natural Resource Damage Assessment
and Restoration Plan for the Exxon Valdez Oil Spill: Public
Review Draft
Author Trustee Council
Publication Report
Publication Date 1990
Source OSPIC

Volume I: Assessment and Restoration Plan, Appendices A,
B, C
Volume II: Appendix D

This document describes the second year of studies undertaken to determine the injury to natural resources resulting from the EVOS. These studies are being conducted by the State of Alaska and the United States to assess related damages and develop restoration plans. This plan was assembled through the cooperative efforts of the State of Alaska, the U.S. Departments of Agriculture and Interior, the National Oceanic and Atmospheric Administration, and the U.S. Environmental Protection Agency under the general provisions of the Clean Water Act and the Comprehensive Environmental Response, Compensation and Liability Act.

Document Type Damage Assessment/Restoration
Title 1991 State/Federal Natural Resource Damage Assessment
and Restoration Plan for the Exxon Valdez Oil Spill
Author Trustee Council
Publication Report
Publication Date 1991
Source OSPIC

Volume I: Assessment and Restoration Plan, Appendices A,
B, C

Volume II: Response to Public Comment, Appendix D

This document describes studies proposed to be conducted jointly by the State of Alaska and the United States during the third year since the EVOS. The purpose of these studies is to determine injury to natural resources resulting from that spill. This document also describes restoration planning activities. This proposed plan was assembled through the cooperative efforts of the State of Alaska, the U.S. Departments of Agriculture and Interior, the National Oceanic and Atmospheric Administration, and the U.S. Environmental Protection Agency under the general provisions of the Clean Water Act and the Comprehensive Environmental Response, Compensation and Liability Act.

Document Type Damage Assessment/Subtidal
Title Subtidal Study Number 1
Hydrocarbon Exposure, Microbial and Meiofaunal Community
Effects
Author NOAA, ADEC
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The work proposed in this study to take place in 1991 is a continuation of Air/Water Study Number 2. The overall objective of this three year suite of studies is to determine the occurrence, persistence and chemical composition of petroleum hydrocarbons in subtidal marine sediments. Objectives of the 1991 study are:

- A. Synthesis of analytical results of petroleum hydrocarbons in subtidal marine sediments collected as part of all NRDA studies.
 - B. Determine the occurrence, persistence and chemical composition of petroleum hydrocarbons in subtidal marine sediments analyzed to date.
 - C. Provide marine sediment data in mass balance calculations.
 - D. Enumerate populations of hydrocarbon-oxidizing microbes in intertidal and subtidal sediments collected at oiled and unoled sites within PWS.
 - E. Assess the maximum potential for "in situ" biodegradation of selected hydrocarbon substrates in subtidal sediments at oiled and unoled sites within PWS.
-

Document Type Damage Assessment/Subtidal
Title Subtidal Study Number 2
Injury to Benthic Communities
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

Shallow (<20m) subtidal studies were initiated in PWS in the fall of 1989 and continued during the summer of 1990 under the Coastal Habitat Study. Deep (>20m) benthos studies were initiated in PWS in July 1990 under Air/Water Study 2. The objectives of this study, proposed for 1991, are:

- A. To determine effects of the EVOS on both shallow and deep benthic invertebrate communities.
 - B. To determine how much time is required for the affected benthic communities to recover to a relatively stable assemblage of taxa.
 - C. To examine the relationship between the accumulation, and retention of hydrocarbons in sediments and the effect on the benthic biota.
-

Document Type Damage Assessment/Subtidal
Title Subtidal Study Number 3
Bio-availability and Transport of Hydrocarbons
Author NOAA, ADEC
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study is a continuation of work carried out in 1989 and 1990 [Air/Water Studies Two and Three] designed to assess the geographic and temporal distribution of dissolved and particulate hydrocarbons, from the EVOS, in the water column and sediments. Objectives of the proposed study are to:

- A. Evaluate trends in ambient water quality using mussel bioaccumulators as surrogates for chemical measurement.
 - B. Synthesize all water and mussel hydrocarbon data in the Technical Services 1 database to provide a comprehensive geographic and temporal picture of trends in petroleum hydrocarbon concentrations in the nearshore water column.
 - C. Determine if sediments settling out of the water column in nearshore subtidal environments contain adsorbed hydrocarbons.
 - D. Decipher subtidal oiled sediment transport mechanisms through analysis of benthic sediments and stratigraphic analysis of bottom cores.
-

Document Type Damage Assessment/Subtidal
Title Subtidal Study Number 4
Fate and Toxicity of Spilled Oil From the Exxon Valdez
Author NOAA
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

A boat-based survey of surficial sediment toxicity was carried out in 1989 under Air/Water Study Four. Under A/W Study Six, toxicity tests were performed in 1990 on sediment samples taken at selected sites sampled by A/W Study Two. This study is designed:

A. To assess the toxicity of weathered Exxon Valdez oil and its degradation products to selected test organisms.

B. To integrate the results from selected other projects, both within and outside the NRDA, into an overall budget for the distribution , transport, transformation, and persistence of spilled oil in Alaskan coastal environments.

Document Type Damage Assessment/Subtidal
Title Subtidal Study Number 5
Injury to Prince William Sound Spot Shrimp
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This project is a continuation of Fish/Shellfish Study Fifteen which was conducted during 1989-91. The object of this study is to determine possible damage to spot shrimp *Pandalus platyceros* due to the EVOS. Specific objectives of the current study are to:

- A. Estimate the relative abundance by weight and sex of spot shrimp caught in oiled and unoled areas and compare theses values to those obtained during surveys in 1989 and 1990.
 - B. Compare size and age frequencies between sites.
 - C. Estimate fecundity, egg mortality, and other sublethal effects between oiled and unoled areas.
 - D. Analyze tissue and egg samples for presence of hydrocarbons.
 - E. Document injury to tissues.
 - F. Provide information on stock status, hydrocarbon concentration and other indicators of stock condition for restoration of damages and management of the spot shrimp resource
-

Document Type Damage Assessment/Subtidal
Title Subtidal Study Number 6
Injury to Demersal Rockfish and Shallow Reef Habitats in
PWS and Along the Lower Kenai Peninsula
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This project is a continuation of Fish/Shellfish Study
Seventeen. Objectives of this study are to:

- A. Determine the presence of absence of hydrocarbons in demersal rockfish, benthic suspension feeders, and sediments from sites along the lower Kenai Peninsula.
 - B. Determine the physiological effects resulting from oil contamination through histopathological examination of six organs, enzyme activity and the examination of developing embryos.
 - C. Determine the feasibility of using otolith microstructure to evaluate depressed growth as a result of oil contamination.
-

Document Type Damage Assessment/Subtidal
Title Subtidal Study Number 7 - Assessment of Oil Spill Impacts on Fishery Resources: Measurement of Hydrocarbons and Their Metabolites, and Their Effects
Author NOAA
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study is a continuation and expansion of Fish/Shellfish Study Number Twenty Four. This project proposes to continue to measure exposure to oil and oil components in the fish of PWS and other areas affected by the EVOS, by determining levels of hydrocarbon metabolites in bile and by measuring hepatic aryl hydrocarbon hydroxylase [AHH] activities. The study will also measure a range of biological effects, especially indicators of reproductive dysfunction and histopathological effects.

Preliminary studies in 1990 suggested that pollock were being exposed to petroleum both inside and outside PWS. This study has been expanded to cover assessment of exposure and possible associated biological effects in pollock, both inside and outside PWS.

Document Type Damage Assessment/Technical Services
Title Technical Services Study Number 1
Hydrocarbon Analytical Support Services and Analysis of Distribution and Weathering of Spilled Oil
Author USFWS, NOAA
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

A large number of water, sediment, shellfish, finfish, bird, mammal, and other samples have been collected as part of the NRDA program, since the EVOS occurred. This study, which began in 1989, coordinates the chemical analysis of all samples collected by the NRDA projects, maintains a quality assurance program, and manages sample tracking and archival.

Document Type Damage Assessment/Technical Services
Title Technical Services Study Number 2 - Histopathology:
Examination of Abnormalities in Tissues from Birds,
Mammals, Finfish, and Shellfish Exposed to the Spilled Oil
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

A number of histopathological conditions are known to result from exposure to oil. This study was carried out in 1989 and 1990 to document conditions in tissue samples taken by individual NRDA studies as one means of demonstrating spill-related injury.

Document Type Damage Assessment/Technical Services
Title Technical Services Study Number 3
Implement and Manage a Geographic Information System
(GIS) to Record and Process NRDA Data
Author ADNR, USFWS
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This study, proposed for 1991, is a continuation of the 1989 and 1990 work. The maps published in 1990 are described, in this report, in the 1990 entry for Technical Services Study Number Three. The objectives of the 1991 portion of the study are to:

- A. Produce and disseminate maps for NRDA participants.
 - B. Create and maintain an NRDA database.
-

Document Type Damage Assessment/Terrestrial Mammal
Title Terrestrial Mammal Study Number 1
Assessment of the Effect of the EVOS on the Sitka
Black-tailed Deer in PWS and the Kodiak Archipelago
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Sitka black-tailed deer forage on intertidal marine vegetation, coastal sedges, and grasses that have been impacted by the EVOS. The objectives of this study, that was carried out in 1989 and 1990, were to:

- A. Test the hypothesis that deer on heavily oiled islands have tissues and rumen contents that have been contaminated by oil.
 - B. Test the hypothesis that deer found dead have rumen contents in their lungs.
 - C. Estimate the number of dead deer per unit area on both a heavily oiled and non-oiled island in PWS.
-

Document Type Damage Assessment/Terrestrial Mammal
Title Terrestrial Mammal Study Number 2
Assessment of Exxon Valdez Oil Spill on Black Bear in
Prince William Sound
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

This study was carried out in 1989 and 1990. The 1990 component was a literature search to identify and retrieve any information on the importance of intertidal habitat use. The objectives of the 1989 study, which was based on field work including radio-telemetry, were to:

- A. Determine mortality rates of black bears in heavily oiled areas of PWS.
 - B. Determine changes in productivity of female black bears.
 - C. Document use of oiled foods by black bears.
 - D. Determine cause of death of bears in oil-contaminated habitat.
 - E. Calculate the decline of black bear populations due to adverse changes in viability resulting from oil contamination.
 - F. Identify potential alternative methods and strategies for restoration of lost use, populations, or habitat where injury is identified.
-

Document Type Damage Assessment/Terrestrial Mammal
Title Terrestrial Mammal Study Number 3
Assessment of the Effects of the EVOS on River Otters in
PWS
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

The work proposed for 1991 is a continuation of the 1989/90 study. The goal of this three year study is to determine if the EVOS had measurable effects on river otter populations. Objectives of the 1991 work program are the following.

- A. Determine cause of death for river otters from oiled areas using necropsy and histopathological procedures.
 - B. Test for hydrocarbon levels in river otters.
 - C. Determine sub-lethal effects of exposure to oil.
 - D. Estimate size of river otter populations in oiled versus non-oiled control area.
 - E. Test for differences in food habits between oiled and non-oiled areas.
 - F. Test for differences in activity patterns between oiled and control study areas.
 - G. Test for differences in habitat selection between oiled and control study areas.
-

Document Type Damage Assessment/Terrestrial Mammal
Title Terrestrial Mammal Study Number 4
Assessment of EVOS on Brown Bear Populations on the
Alaska Peninsula
Author ADF&G
Publication 1991 State/Federal NRDA Plan
Publication Date 1991
Source OSPIC

This proposed study is a continuation of the 1989/90 work. Aerial surveys and radio-telemetry were used during 1989 and 1990 to study population density, female mortality and exposure to hydrocarbons in an oiled area within Katmai National Park, and in an unoiled area near Black Lake. In 1991, the study will focus only on the continuation of radio-telemetry to obtain additional mortality information.

Document Type Damage Assessment/Terrestrial Mammal
Title Terrestrial Mammal Study Number 5
Effects of Oil on Carnivores and Small Mammals Outside
Prince William Sound
Author ADF&G
Publication 1989 State/Federal NRDA Plan
Publication Date 1989
Source OSPIC

A wide variety of carnivores forage on beaches outside of Prince William Sound that were impacted by the EVOS. These mammals include bear, river otter, mink, fox, wolverine, coyote, wolf, marten, and weasel. The potential mechanisms of impact on these species include direct oiling of fur, ingestion of oil while scavenging, and ingestion of oil while grooming. The objectives of this study were to:

- A. Determine the direct effects of oil on carnivores and small mammals.
 - B. Determine changes in abundance of carnivores and small mammal populations.
 - C. Identify potential alternative methods and strategies for restoration of lost use, populations
-

Document Type Damage Assessment/Terrestrial Mammal
Title Terrestrial Mammal Study Number 6
Influence of Oil Hydrocarbons on Reproduction of Mink
Author ADF&G
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Mink is a carnivorous mammal that feed on fish, small mammals , frogs, aquatic insects, and occasionally birds. These prey species live in areas impacted by the EVOS. The objectives of this study were to:

A. Test the short-term effects of ingested, weathered Prudhoe Bay crude oil on mink reproduction.

B. Test the long-term effects of ingested, weathered Prudhoe Bay crude oil on mink reproduction.

Document Type Database
Title PWSwalk

Author Ward Lane
Publication
Publication Date
Source ADEC/OSRC

The ADEC/OSRC database "PWSwalk" contains detailed data regarding the initial impact of oil to Prince William Sound. These data span a range of dates through the fall of 1989 beach surveys.

Document Type Oil Spill Directory
Title Exxon Valdez Oil Spill Directory
Author Keiser, G.
Publication Report
Publication Date 1989
Source AEIDC

Research Agency, House of Representatives, Alaska State Legislature.

Document Type Oil Spill Maps
Title Alaska Boundary Series
Author USGS
Publication Map
Publication Date 19--
Source USGS
OSPIC
31 selected colored maps of areas impacted by the Exxon Valdez Oil Spill. Scale 1:250,000

Document Type Oil Spill Maps
Title Alaska Topographic Series (1:250,000)
Author USGS
Publication Map
Publication Date 19--
Source USGS
OSPIC
11 selected colored maps of areas impacted by the Exxon Valdez Oil Spill. Scale 1:250,000

Document Type Oil Spill Maps
Title Alaska Topographic Series (1:63,360)
Author USGS
Publication Map
Publication Date 19--
Source USGS
OSPIC
130 selected colored maps of areas impacted by the Exxon Valdez Oil Spill. Scale 1:63,360

Document Type Oil Spill Maps
Title Shoreline impact survey maps
Author ADEC
Publication Map
Publication Date 1989
Source ADEC
4 maps (color)

Document Type Oil Spill Maps
Title Technical Services Study #3
Author Damage Assessment Geoprocessing Group
Publication Date 1990
Source ADNR/Div. of Management/Land Record Information Section

A series of maps that include:

1. Two regional maps of Prince William Sound that describe land status, beach segments, anadromous fish streams, fall oiling, ADEC sample sites, and cumulative oiling from summer, 1989 assessments.
 2. The Prince William Sound Map Atlas. Twenty six multithematic maps that describe land ownership, coastal morphology, beach segment numbers, anadromous fish streams, hydrography, cultural names, ADEC monitoring sites, and oil location based on the 1989 ADEC September shoreline assessments.
 3. The Cook Inlet and Kenai Peninsula Atlas. A series of twenty two, inch per mile maps, that mirror the layers in the PWS atlas.
 4. Prince William Sound Bathymetry. A three dimensional representation of the sea bottom of western PWS.
 5. Regional Maps of Spring Oiling for All Areas. Four regional maps of the affected area that show the results of the spring, 1990 SSAT survey.
-

Document Type Oil Spill Report
Title Impact Maps and Summary Reports of Shoreline Surveys of the Exxon Valdez Spill Site - Homer Area - 24 August - 20 November 1989
Author ADEC Oil Spill Response Center
Publication Maps and Reports
Publication Date 1990
Source ADEC
OSPIC
1 volume

Document Type Oil Spill Report
Title Impact Maps and Summary Reports of Shoreline Surveys of the Exxon Valdez Spill Site - Prince William Sound - 11 September - 19 October 1989
Author ADEC Oil Spill Response Center
Publication Maps and Reports
Publication Date 1989
Source ADEC
OSPIC
2 volumes

Document Type Oil Spill Report
Title Impact Maps and Summary Reports of Shoreline Surveys of the Exxon Valdez Spill Site - Seward Area - 3 September - 19 October 1989
Author ADEC Oil Spill Response Center
Publication Maps and Reports
Publication Date 1989
Source ADEC
OSPIC
1 volume

Document Type Oil Spill Report
Title Prince William Sound Environmental Reader.
1989 -- T/V Exxon Valdez Oil Spill
Author Prince William Sound Conservation Alliance
Publication Report
Publication Date 1989
Source AEIDC
Alaska State Library
Alaska Resources Library

Document Type Oil Spill Report
Title Sensitivity of Coastal Environments and Wildlife to
Spilled Oil, Prince William Sound, Alaska: An Atlas of
Coastal Resources
Author Research Planning Institute, Inc.
Publication Report
Publication Date 1983
Source Alaska Resources Library
Alaska State Library

Document Type Restoration
Title Ecological Restoration of Prince William Sound and the
Gulf of Alaska: An Annotated Bibliography of Relevant
Literature
Author EPA Office of Research and Development
Publication Report
Publication Date 1990
Source OSPIC
Preliminary Draft compiled for the Restoration Planning
Work Group

Document Type Restoration
Title Federal Register, Part VII, Environmental Protection Agency,
Prince William Sound and Gulf of Alaska; Draft 1991
Author EPA, Alaska Dept. of Law
Publication Report
Publication Date 1991
Source RPWG
OSPIC

The Environmental Protection Agency, acting to coordinate restoration on behalf of the Federal Trustees and with the Alaska State Trustees are publishing (1) a discussion of the overall process the State and Federal governments intend to follow to enhance and expedite the recovery of Prince William Sound, lower Cook Inlet, and the Gulf of Alaska from the Exxon Valdez oil spill and (2) a draft 1991 Restoration Work Plan comprised of restoration planning and implementation activities being considered by the Trustees.

Document Type Restoration
Title Restoration Following the Exxon Valdez Oil Spill:
Proceedings of the Public Symposium Held in Anchorage,
Alaska, March 26-27, 1990.
Author Restoration Planning Work Group
Publication Report
Publication Date 1990
Source OSPIC

This report summarizes the two day symposium. the purpose of this public symposium was to provide a forum for scientists, Alaskan Natives and other residents of the affected areas, environmentalists, government officials, representatives of the fishing and tourism industries, and other interested people to exchange views on the restoration of resources damaged by the EVOS. The symposium included panel discussions on restoration of coastal habitats, fisheries, mammals, birds, recreational and cultural resources followed by question and answer sessions to encourage public comment. This document records the presentations given and comments aired at the symposium. The symposium agenda and handouts are included as appendices.

Document Type Restoration
Title Restoration Planning Following the Exxon Valdez Oil Spill:
August 1990 Progress Report
Author Restoration Planning Work Group
Publication Report
Publication Date 1990
Source RPWG
OSPIC

This progress report summarizes the Restoration Planning Work Group activities to date. Public participation programs, the technical workshop, a scientific literature review and the feasibility studies are described. A preliminary list of potential restoration options are presented as a series of matrices. Future restoration planning activities, including the evaluation and selection of restoration options and development of a final restoration plan, are discussed.

Document Type Restoration
Title Restoration Feasibility Study Number 1
Re-establishment of *Fucus* in Rocky Intertidal Ecosystems
Author EPA
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

Intertidal populations of rockweed (*Fucus spp.*) suffered extensive damage by both spilled oil and cleanup efforts. If the natural recovery of this alga could be significantly accelerated or enhanced, it would benefit the recovery of associated flora and fauna on intertidal rocky shores. The specific objectives of this study, that was carried out in 1990 were to:

- A. Identify the causes of variation in rockweed recovery at and near Herring Bay, Knight Island in PWS.
- B. Document the effects of alternative cleaning methods on rockweed.
- C. Test the feasibility of enhancing the reestablishment of rockweed.

Preliminary results indicate that rockweed recovers most slowly at intensively cleaned sites and almost no recovery occurs where tar cover persists.

Document Type Restoration
Title Restoration Feasibility Study Number 2
Re-establishment of Critical Fauna in Rocky Intertidal
Ecosystems
Author USFS
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This study was designed to compare the rates of faunal recovery in rocky intertidal communities, and to demonstrate the feasibility of restoration of these communities by enhancing recolonization rates for such key species as limpets and starfish.

Preliminary results indicate that heavy predation of several species of transplanted invertebrates was probably due to the lack of cover usually provided by rockweed.

Document Type Restoration
Title Restoration Technical Services Study #2
Author ADNR/DLW - Oil Spill Project Office
Publication Report
Publication Date 1991
Source ADNR/DLW

The Restoration Inventory Database described herein as "Resinv" is the product of the Alaska Department of Natural Resources Oil Spill Project Office (ADNR) for Restoration Technical Support Project #2. The "Resinv" database is intended to assist in the selection of candidates for restoration. The database may also be useful in prioritizing segments for cleanup. The database includes data acquired from ADNR, Alaska Department of Environmental Conservation Oil Spill Response Center (ADEC), and National Park Service (NPS). ADEC data includes information from the fall 1989 survey through fall of 1991. ADEC data also includes information about local response groups and place descriptions. NPS data includes outer coast usage information. ADNR data includes information from the PWS Area Plan, PWS Conservation Alliance, and ADNR Status Plats. The database and its driving application are assembled in Rbase for DOS by Microrim. They require Rbase to be present in order to operate.

Document Type Restoration
Title Restoration Feasibility Study Number 3
Identification of Potential Sites for Stabilization and
Restoration with Beach Wildrye
Author ADNR
Publication 1990 State/Federal NRDA Plan
Publication Date 1990
Source OSPIC

This study was designed to identify sites with injury to beach wildrye grass and to recommend restoration measures.

Results from survey work conducted in 1990 in PWS indicate injury to several beach wildrye communities.

Document Type Restoration

Title Restoration Feasibility Study Number 4
Identification of Upland Habitats Used by Wildlife
Affected by the EVOS

Author USFWS

Publication 1990 State/Federal NRDA Plan

Publication Date 1990

Source OSPIC

A number of bird species adversely affected by the EVOS are dependent upon aquatic or intertidal habitats as well as upland habitats. This study was an attempt to identify the upland areas in PWS utilized by marbled murrelets and harlequin ducks.

Based on surveys of 140 streams, preliminary results of the harlequin duck study indicate that this species nests along larger-than-average anadromous fish streams, with moderate gradients and clear waters. Preliminary results on murrelets suggest that murrelets use north-facing slopes, and inland areas at the heads of bays. Open bog meadows, especially at the heads of bays, appear to be used as flight corridors to upper wooded areas.

Document Type Spill Prevention

Title Assessment of Tanker Transportation Systems in Cook Inlet and Prince William Sound. Final Report.

Author Engineering Computer Optecnomics, Inc.

Publication Report

Publication Date 1989

Source AEIDC

Report for Alaska Oil Spill Commission.

Document Type Spill Prevention
Title Environmental Studies of Port Valdez
Author Hood, D. W.: Editor, et al
Publication Report
Publication Date 1973
Source Alaska Resources Library
Alaska State Library
Anchorage Municipal Library

This project was designed to obtain critical environmental data on Port Valdez Narrows and the approaches to this system in Prince William Sound. Emphasis was on acquisition of baseline data against which future monitoring could be based and assessment of the oceanographic features of this system essential in predicting the impact of future additions of contaminants, particularly as related to a crude oil tanker loading and ballast treatment facility.

Document Type Spill Prevention
Title Prince William Sound Tanker Spill Prevention and Response Plan.
Author Alyeska Pipeline Service Company
Publication Report
Publication Date 1989
Source Alyeska Pipeline Service Company
3 vols.

Reference

Reference

Document Type Bibliography
Title Alaska Oil Spill Commission Collection
Author
Publication Report
Publication Date 1990
Source AEIDC

The Alaska State Legislature created the Alaska Oil Spill Commission (AOSC) to investigate the Exxon Valdez oil spill and report of response measures to and prevention of oil spills, as well as on tanker safety and design. AOSC designated the Arctic Environmental Information and Data Center (AEIDC) of the University of Alaska Anchorage as its repository and reading room. The AOSC collection reflects items released to AEIDC which AOSC either collected in support of its deliberations or produced from the time it was established in 1989 until it completed its final report and was discharged in May 1990. Materials listed on the bibliography are available for in-house use at AEIDC or may be purchased on microfiche.

Document Type Bibliography
Title Annotated Bibliography for Sensitivity of Kodiak Coastal Areas to Oil Spills
Author Jon Isaacs and Associates, et al
Publication Report
Publication Date 1984
Source

Document Type Bibliography
Title Kenai Resource Inventory, an Annotated Bibliography
Author Maggard, Roger
Publication Report
Publication Date 1977
Source Alaska State Library
Alaska Resources Library
Anchorage Municipal Library

Document Type Bibliography
Title Oil Spill Bibliography Kenai Peninsula - Cook Inlet
Author Alaska Resources Library
Publication Report
Publication Date 1989
Source Alaska Resources Library
This is a bibliography of books in Western Library Network libraries.

Document Type Bibliography
Title Oil Spill in Prince William Sound: A Bibliography
Author Alaska Resources Library
Publication Report
Publication Date 1989
Source Alaska Resources Library
This is a bibliography of books in Western Library Network libraries.

Document Type Bibliography
Title Prince William Sound; Annotated Bibliography and Index
Author AEIDC
Publication Report
Publication Date 1979
Source AEIDC
Report for Marine Ecosystems Analysis Program.

Document Type Climatic Atlas
Title Climatic Atlas of the Outer Continental Shelf Waters and Coastal Regions of Alaska, Vol. One: Gulf of Alaska
Author Brower, Jr., W. A. et al
Publication Report
Publication Date 1988
Source AEIDC
NOAA

Document Type Database Directory
Title Southcentral Regional Database
Author Wibbenmeyer, Merlin, J.
Publication Geographic Information System
Publication Date 1987
Source ADNR/Division of Geological and
Geophysical Surveys
Resource Analysis Section

Compiled in 1982 as part of the Alaska Land and Resource
Mapping Program. This program involved the systematic
preparation, mapping and automation of natural resources
data in a standardized approach for data classification and
resolution.

Data topics applicable to oil spill restoration include:

1. Fish and game
 2. Historic and archeological sites
 3. Hydrology
 4. Infrastructure
 5. Land status
 6. Political and administrative units
 7. Recreation use
 8. Subsistence
 9. Roads
 10. Trails
 11. Vegetation
-

Document Type General Reference
Title Alaska Regional Profiles, Vol. 1 Southcentral Region
Author Selkregg, L. L., ed.
Publication Report
Publication Date 1974
Source AEIDC
Alaska Resources Library

Document Type General Reference
Title Biophysical Boundaries for Alaska's Coastal Zone
Author Alaska Coastal Management Program
Publication Maps
Publication Date 1985
Source Alaska State Library

Document Type General Reference
Title Coastal Zone Boundaries of Alaska
Author ADF&G/Habitat Div
Publication Maps
Publication Date 1988
Source ADF&G Library
Alaska Resources Library
Alaska State Library

Document Type General Reference
Title Community/Borough Map 1991
Author ADCRA
Publication Map
Publication Date 1991
Source ADCRA
Map scale 1 inch = 70 miles (approx.)
Map shows Regional Corporations under ANCSA, Regional Education Attendance Areas, boroughs, municipalities, and unincorporated communities. Incorporation dates and population data from the State Revenue Sharing Program is also listed. Copies may also be obtained from ADCRA offices in Juneau, Fairbanks, Nome, Dillingham, Bethel, Kotzebue, and Kodiak.

Document Type General Reference
Title Prince William Sound
Author Van Hyning, Jack M.
Publication Book
Publication Date 1975
Source Alaska Resources Library
Alaska State Library
Anchorage Municipal Library
Alaska Geographic Society
Alaska Geographic Vol. 2, No. 3

Document Type General Reference
Title The Gulf of Alaska: Physical Environment and Biological Resources
Author Wilson, J. G., and J. E. Overland
Publication Report
Publication Date 1987
Source NOAA

Document Type General Reference
Title United States Coast Pilot #9, Pacific and Arctic Coasts
Alaska: Cape Spencer to Beaufort Sea
Author
Publication Report
Publication Date 1989
Source NOAA
Supplements navigational information on nautical charts.

Document Type OSPIC Collection
Title
Author
Publication
Publication Date
Source

OSPIC

The Oil Spill Public Information Center collection will include planning documents, scientific and economic data, technical reports, photographs, audio and video tapes, slides, newspaper clippings, and databases contributed by agencies of the federal government, and other interested parties, both public and private. The Information Center will also provide a basic reference and research collection for users in the following subject areas: science (biology, botany, wildlife, ecology) and technology (oil spill clean-up, tanker transportation); business (petroleum industry); law; social sciences (Alaska native populations, rural and subsistence communities, archeological sites); and general reference (atlases, maps, directories). Information Center staff are also collecting special television and radio programming prepared for the Exxon Valdez oil spill in both VHS video and audio cassette format, as well as special articles and monographs published describing the spill and its effects.

KPWG
L

RESTORATION FEASIBILITY STUDY NUMBER 5

Study Title: Land Status, Uses, and Management Plans in Relation to Natural Resources and Services

Lead Agency: DNR

Cooperating Agencies: USFS, NPS, ADF&G

INTRODUCTION

Through the restoration scoping process members of the public have suggested a wide variety of projects to acquire equivalent resources. Examples are the acquisition of timber or development rights, conservation easements, recreational and cultural sites, inholdings within state and federal protected areas, and buffer strips along streams and coasts. In addition, scientists participating in the technical workshop found that in some cases habitat protection projects would be the best means of providing for the long-term restoration of injured wildlife resources. In order to begin to identify and evaluate potential restoration projects of this type, it is necessary to summarize existing information about the land status, uses, and management plans for both privately and publicly owned lands. This initial effort will focus on the oil-spill area and adjacent lands and will also serve to identify potential sites for other types of restoration projects.

OBJECTIVES

- A. Summarize and map the land status and ownership, land-use designations, and existing and proposed uses of tidelands and related uplands.
- B. Summarize and map the extent and degree of oiling and coastal morphology as necessary for restoration planning purposes.
- C. Summarize and map natural resources and services, including vegetation, fish and wildlife populations, habitats, and sensitive areas, recreation, and commercial forestry.

Relationships with Other Studies:

These data are fundamental to the entire Restoration Planning Project and especially to those feasibility studies and potential restoration projects that concern the acquisition of equivalent resources.

METHODS

The DNR, through the NRDA Study TS 1, has compiled much of the necessary data on their computerized G.I.S. Additional resource

and land use information is available in state and federal management plans and resource inventories and from the Alaska Coastal Management Program. The RPWG and technical advisors will be consulted to define the specific area and information needs, which will then be obtained from the various existing data bases. After determining the most feasible means and best resolution to portray the information, it will be summarized, produced, and distributed, primarily in map form.

BUDGET: DNR

Salaries	\$	34.0
Travel		1.0
Contracts		5.0
Supplies		10.0
Equipment		<u>0.0</u>
Total	\$	50.0

RPWG
L

RESTORATION FEASIBILITY STUDY NUMBER FIVE
STATUS REPORT

Study Title:

Identification and Recordation of Information Sources on
Land and Resource Status on Lands Affected by the Exxon
Valdez Oil Spill.

Lead Agency:

Department of Natural Resources

The following is a listing of available documents, maps and management plans thus far identified as relevant to the restoration planning process.

Southcentral Regional Database

Compiled in 1982 as part of the Alaska Land and Resource Mapping Program. This program involved the systematic preparation, mapping and automation of natural resources data in a standardized approach for data classification and resolution. Data topics that are applicable to oil spill restoration include:

- A) Fish and Game
Eleven data types
- B) Historic and Archeological Sites
- C) Hydrology
Six data types
- D) Infrastructure
- E) Land Status
Three data types
- F) Land Use
Two data types
- G) Political and Administrative Units
Twelve data types
- H) Recreation Use
- I) Subsistence
- J) Roads
- K) Trails
- L) Vegetation

Post-It™ brand fax transmittal memo 7671		# of pages
To	Kirsten Balcard	From Rick Thompson
Co.		Co. 0:1 Sp:11
Dept.		Phone # 762-2515
Fax #	271-2467	Fax # 762-2290

RESTORATION FEASIBILITY STUDY NUMBER FIVE STATUS REPORT

Prince William Sound Area Plan

The Prince William Sound Area Plan was completed in 1988 by an interdisciplinary planning team representing state agencies with land management responsibility in the Sound and representing the U.S. Forest Service. The plan describes how the Department of Natural Resources will manage state-owned uplands and tide and submerged lands in Prince William Sound. The plan also provides general guidance for managing units of the Alaska Marine Park system that are located in the planning area. The plan determines land-use classifications, land disposal locations, administrative designations, land selections and relinquishments, and guidelines for leases and permits on state land. The plan does not make decisions for federal, Native, private, or municipal land.

Products of Technical Services Study Number 3¹

Several products generated by this study will provide useful background information for the restoration program; they include:

- ☐ Two regional maps of western Prince William Sound--describe land status, beach segments, anadromous fish streams, fall oiling, ADEC sample sites, and cumulative oiling from summer, 1989 assessments.
- ☐ The Prince William Sound Map Atlas--twenty six multi-thematic maps which describe land ownership, coastal morphology, beach segment numbers, anadromous fish streams, hydrography, cultural names, ADEC monitoring sites, and oil location based on the 1989 ADEC September shoreline assessments.
- ☐ The Cook Inlet and Kenai Peninsula Atlas--a series of twenty two inch per mile maps that mirror the layers in the PWS atlas.
- ☐ Prince William Sound Bathymetry--a three dimensional representation of the sea bottom of western Prince William Sound.
- ☐ Regional Maps of Spring Oiling for All Areas--four regional maps of the affected area that show the results of the spring, 1990 SSAT survey.

Information in the Southcentral Regional Database is already digitized and can be converted to a map format using ADNR's geographic information system [GIS]. The listed products of Technical Services Study Number 3 are GIS-generated maps.

¹ Produced by the Damage Assessment Geoprocessing Group [ADNR].

RESTORATION FEASIBILITY STUDY NUMBER FIVE STATUS REPORT

RPWG
L

Study Title:

Restoration Feasibility Study Number 5

Identification and Recordation of Information Sources on
Land and Resource Status on Lands Affected by the Exxon
Valdez Oil Spill.

Lead Agency:

Alaska Department of Natural Resources

The objective of this study is to locate, categorize, evaluate and determine the availability of maps, management plans and other resource documents relevant to the restoration process. These documents will provide background information for direct restoration of affected tidelands, protection of fish and wildlife habitat and acquisition of equivalent resources. They will furnish data on ownership, land use, critical wildlife habitat, cultural resources, timber resources, proposed uses, etc.

Documents already available as part of the public record and those that are being generated from NRDA studies are being reviewed for data sets that would be useful to PI's and land managers contemplating restoration projects. Each data set is broken down into availability, form [text, digital or map], geographic region, scale, resolution and whether or not it is litigation sensitive. These dissected data sets are being listed on two matrices, a public domain matrix and a NRDA matrix. The former embodies general background data whereas the latter contains restoration-relevant results of selected damage assessment studies.

The following is a preliminary listing of available documents, maps and management plans thus far identified as relevant to the restoration planning process. Additional materials obtained from resource agencies, boroughs and municipalities within the affected area are currently under review and will be incorporated into the matrices.

Post-It™ brand fax transmittal memo 7671		# of pages » 3
To STAN SCHUER	From ART WEINER	
Co. RPWG	Co. ADNR	
Dept.	Phone # 762-2295	
Fax # 271-2467	Fax # 762-2290	

RESTORATION FEASIBILITY STUDY NUMBER FIVE STATUS REPORT

Southcentral Regional Database

Compiled in 1982 as part of the Alaska Land and Resource Mapping Program. This program involved the systematic preparation, mapping and automation of natural resources data in a standardized approach for data classification and resolution. Data topics that are applicable to oil spill restoration include:

- A) Fish and Game
Eleven data types
- B) Historic and Archeological Sites
- C) Hydrology
Six data types
- D) Infrastructure
- E) Land Status
Three data types
- F) Land Use
Two data types
- G) Political and Administrative Units
Twelve data types
- H) Recreation Use
- I) Subsistence
- J) Roads
- K) Trails
- L) Vegetation

Prince William Sound Area Plan

The Prince William Sound Area Plan was completed in 1988 by an interdisciplinary planning team representing state agencies with land management responsibility in the Sound and representing the U.S. Forest Service. The plan describes how the Department of Natural Resources will manage state-owned uplands and tide and submerged lands in Prince William Sound. The plan also provides general guidance for managing units of the Alaska Marine Park system that are located in the planning area. The plan determines land-use classifications, land disposal locations, administrative designations, land selections and relinquishments, and guidelines for leases and permits on state land. The plan does not make decisions for federal, Native, private, or municipal land.

RESTORATION FEASIBILITY STUDY NUMBER FIVE STATUS REPORT

Products of Technical Services Study Number 3¹

Several products generated by this study will provide useful background information for the restoration program; they include:

- ☐ Two regional maps of western Prince William Sound--describe land status, beach segments, anadromous fish streams, fall oiling, ADEC sample sites, and cumulative oiling from summer, 1989 assessments.
- ☐ The Prince William Sound Map Atlas--twenty six multi-thematic maps which describe land ownership, coastal morphology, beach segment numbers, anadromous fish streams, hydrography, cultural names, ADEC monitoring sites, and oil location based on the 1989 ADEC September shoreline assessments.
- ☐ The Cook Inlet and Kenai Peninsula Atlas--a series of twenty two inch per mile maps that mirror the layers in the PWS atlas.
- ☐ Prince William Sound Bathymetry--a three dimensional representation of the sea bottom of western Prince William Sound.
- ☐ Regional Maps of Spring Oiling for All Areas--four regional maps of the affected area that show the results of the spring, 1990 SSAT survey.

Information in the Southcentral Regional Database is already digitized and can be converted to a map format using ADNR's geographic information system [GIS]. The listed products of Technical Services Study Number 3 are GIS-generated maps.

¹ Produced by the Damage Assessment Geoprocessing Group [ADNR].