Exxon Valdez Oil Spill Trustee Council

2001 Status Report

Mission Statement

of the Exxon Valdez Oil Spill Trustee Council

The mission of the Trustee Council and all participants in Council efforts is to efficiently restore the environment injured by the Exxon Valdez oil spill to a healthy, productive, world-renowned ecosystem, while taking into account the importance of quality of life and the need for viable opportunities to establish and sustain a reasonable standard of living.

The Restoration will be accomplished through the development and implementation of a comprehensive interdisciplinary recovery and rehabilitation program that includes:

- *Natural Recovery*
- *Monitoring and Research*
- *Resource and Service Restoration*
- *Habitat Acquisition and Protection*
- *Resource and Service Enhancement*
- *Replacement*
- *Meaningful Public Participation*
- *Project Evaluation*
- *Fiscal Accountability*
- *Efficient Administration*

The Settlement

The settlement among the State of Alaska, the United States government and Exxon was approved by the U.S. District Court on October 9, 1991. It resolved various criminal charges against Exxon as well as civil claims brought by the federal and state governments for recovery of natural resource damages resulting from the oil spill. The settlement had three distinct parts:

Criminal Plea Agreement. Exxon was fined $150 million, the largest fine ever imposed for an environmental crime. The court forgave $125 million of that fine in recognition of Exxon's cooperation in cleaning up the spill and paying certain private claims. Of the remaining $25 million, $12 million went to the North American Wetlands Conservation Fund and $13 million went to the national Victims of Crime Fund.

Criminal Restitution. As restitution for the injuries caused to the fish, wildlife, and lands of the spill region, Exxon agreed to pay $100 million. This money was divided evenly between the federal and state governments.

Civil Settlement. Exxon agreed to pay $900 million with annual payments stretched over a 10-year period. The settlement has a provision allowing the governments to make a claim for up to an additional $100 million to restore resources that suffered a substantial loss, the nature of which could not have been anticipated from data available at the time of the settlement.

Contents

FROM THE EXECUTIVE DIRECTOR 2

TRUSTEE COUNCIL AND PUBLIC ADVISORY GROUP 3

PLANNING FOR THE FUTURE 4
GEM 5
FUTURE HABITAT 9

ONGOING PROGRAMS 10
STATUS OF RESOURCES 10
HABITAT PROTECTED 15

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Molly McCammon
Executive Director

Letter from the Executive Director

On October 8 of this year, the Trustee Council will mark 10 years since the federal and state governments jointly settled civil and criminal proceedings with Exxon and the restoration of the spill region began. During that time, the Trustee Council simultaneously conducted what is thought to be the largest habitat protection effort and the largest marine science programs in the United States. Today, each of those programs has left us with a legacy of which everyone involved can be proud, one that will continue to benefit the spill-impacted region of the north Gulf of Alaska for decades to come.

This September, the Trustee Council will receive the last of ten years of payments from Exxon. But, that does not mean the end of restoration. During this next year, the Trustee Council will continue documenting the long-term, low-level effects of the spill, while planning for two long-term programs that could continue for the next century or more.

This annual status report looks to the future of restoration in the spill region. Research, monitoring and restoration will continue through a $120 million inflation-proofed fund, generating about $6 million a year. A long-term habitat protection fund, expected to generate about $1.25 million a year, is being set up for future acquisitions of mostly small parcels. To make these programs possible over the long term, the Trustee Council, with congressional approval, was able to move restoration funds from low-interest federal accounts to more flexible investments through the Alaska Department of Revenue.

Thanks to this foresight, long-term restoration benefits will continue for the spill region for many years to come.

Molly McCammon

Exxon Valdez Oil Spill Trustee Council

The *Exxon Valdez* Oil Spill Trustee Council was formed to oversee restoration of the injured ecosystem through the use of the $900 million civil settlement. The Council consists of three state and three federal trustees (or their designees):

Commissioner, Alaska Department of Fish and Game; Commissioner, Alaska Department of Environmental Conservation; Attorney General, Alaska Department of Law; Secretary, U.S. Department of the Interior; Director, National Oceanic & Atmospheric Administration; Secretary, U.S. Department of Agriculture.

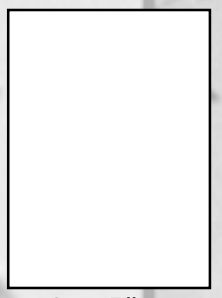
David Allen
Director, Alaska Region
U.S. Fish and Wildlife Service

Jim Balsiger
Director, Alaska Region
National Marine
Fisheries Service

Michele Brown
Commissioner
Alaska Dept. of
Environmental Conservation

Dave Gibbons
Supervisor, Chugach
National Forest
U.S. Forest Service

Frank Rue
Commissioner
Alaska Dept. of
Fish and Game



Craig Tillery
Assistant Attorney General,
Alaska Dept. of Law

Public Advisory Group

Before decisions are made on major issues, the Trustee Council receives recommendations from its 17-member Public Advisory Group (PAG). This broad-based group brings representatives of different interests together, providing a link between the Trustee Council and user groups in the spill area. The PAG provides input on key decisions related to planning, funding and carrying out restoration projects.

Torie Baker	Cordova	Commercial Fishing
Chris Beck	Anchorage	Public at Large
Chris Blackburn	Kodiak	Public at Large
Dave Cobb	Valdez	Public at Large
Gary Fandrei	Kenai	Public at Large
Brett Huber	Soldotna	Sport Hunting/Fishing
Dan Hull	Anchorage	Public at Large
James King	Juneau	Conservation
Charles Meacham (chair)	Juneau	Science/Academic
Pat Norman	Port Graham	Native Landowner
Bud Perrine	Cordova	Aquaculture
Gerald Sanger	Whittier	Commercial Tourism
Stan Senner	Anchorage	Environmental
Stacy Studebaker	Kodiak	Recreational Users
Charles Totemoff	Anchorage	Forest Products
Martha Vlasoff	Anchorage	Subsistence
Ed Zeine	Cordova	Local Government

Ex-Officio Members: Sen. Loren Leman, Rep. John Harris

> "The investment objective for monies deposited in the Investment Fund is to provide adequate liquidity for ongoing restoration purposes and preserve the inflation-adjusted value of the principal, while realizing competitive, total rates of return."
>
> EVOS Investment Policies
> adopted February 29, 2000

Planning for the future

Ecosystem, habitat programs to continue indefinitely

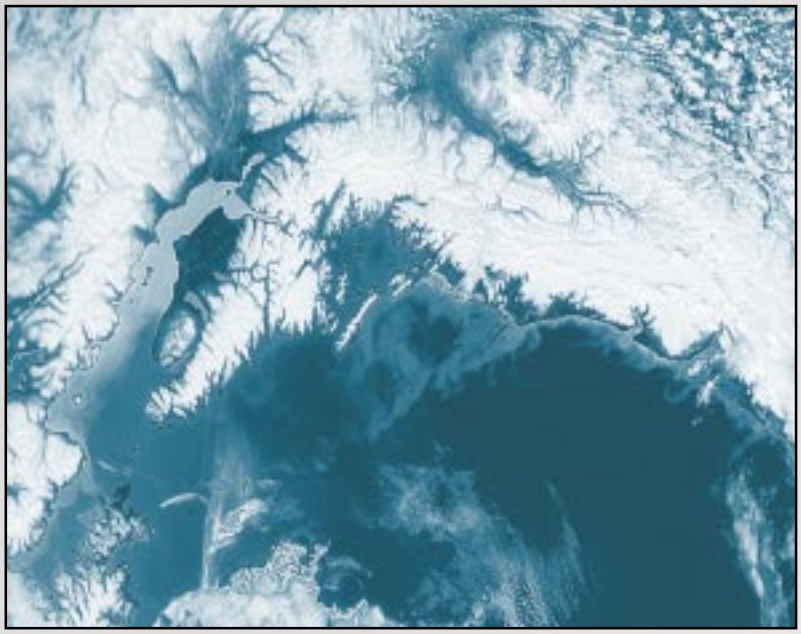
Each year since 1994, the Trustee Council has set aside in the Restoration Reserve $12 million of each annual Exxon payment, to ensure that funds are available for restoration activities after the final payment in September 2001. Funds in the reserve, along with interest earned and other unallocated funds, will be used to continue the Council's efforts combining marine science with habitat protection as the best long-term approach for restoration of the spill-damaged ecosystem, beginning in October 2002.

Of $186 million in available funds, $55 million will fund additional habitat protection. The balance, roughly $131 million, will be used to support long-term research and monitoring in the spill area and adjacent northern Gulf of Alaska under what has come to be called GEM, or the Gulf Ecosystem Monitoring and Research Program.

In 1999, Congress approved legislation allowing the Council to invest its funds in accounts outside of the U.S. Treasury in order to gain a higher rate of return at lower cost. Investment and management of the funds is now being handled by the Alaska Department of Revenue, Division of Treasury, under contract to the Council. After inflation proofing, investment earnings would initially provide about $6 million annually to fund GEM and about $1.25 million annually to fund ongoing habitat acquisition. Administrative costs of these activities will also be paid from the annual earnings.

To prepare for their new responsibilities as investment overseers, Trustees during the past year established rigorous investment policies, received investment and fiduciary training, and established an Investment Advisory Group to provide guidance to the Executive Director.

The Council has not yet decided some key issues in regard to the future program. For example, the Trustees must decide whether to continue supporting a large public involvement process with its associated expenses or to have a reduced effort. They must also decide how to incorporate scientific advice and peer review. While the Council will continue as manager of the programs in the near term, they may consider whether at some point in the future a different oversight entity should be established.



GEM

Gulf Ecosystem Monitoring and Research

The catastrophe of the oil spill changed the environment of the northern Gulf of Alaska overnight. Many of those changes were immediate and obvious; others have been more subtle and difficult to distinguish from environmental changes that occur naturally over long periods of time. Separating the long-term effects of human-caused impacts from changes inherent in natural cycles is the challenge that led the Trustee Council to establishing a long-term endowment for monitoring and research in the northern gulf. That program – slated to begin in October 2002 – is called the Gulf Ecosystem Monitoring program, or "GEM."

The GEM Program is to be funded from the earnings of $120 million set aside by the Trustee Council in March 1999. That fund, after inflation-proofing, is expected to provide about $6 million annually for GEM, beginning October 1, 2002. GEM will be funded at the $6 million level for the first few years, with that amount slated to grow as the fund grows.The goal is to develop a program that will serve as a sentinel over the gulf, providing an early warning system of change that will help resource managers, policy makers and the public minimize the impacts and better prepare for the inevitable increase in human use.

Building on the Trustee Council's tradition of community outreach and consultation, Council staff met with public groups, scientists, policy makers and others throughout the EVOS region to discuss what a long-term program might look like. From these meetings developed the April 2000 NRC review draft document: "Gulf Ecosystem Monitoring: A sentinel monitoring program for the conservation of the natural resources of the northern Gulf of Alaska."

This document details the framework – mission, goals, principles and policies and approach – for a long-term program. It is now under review by a panel of scientists from the National Research Council as the start of a formal review process for GEM that will continue throughout 2001. The NRC panel is composed of distinguished scientists from all over the United States who have interests in Alaska science or experience with environmental monitoring.

> "In the end, GEM must be justified on what it can teach policy makers, resource managers and the public about options for directing human behavior toward achieving sustainable resource management goals."

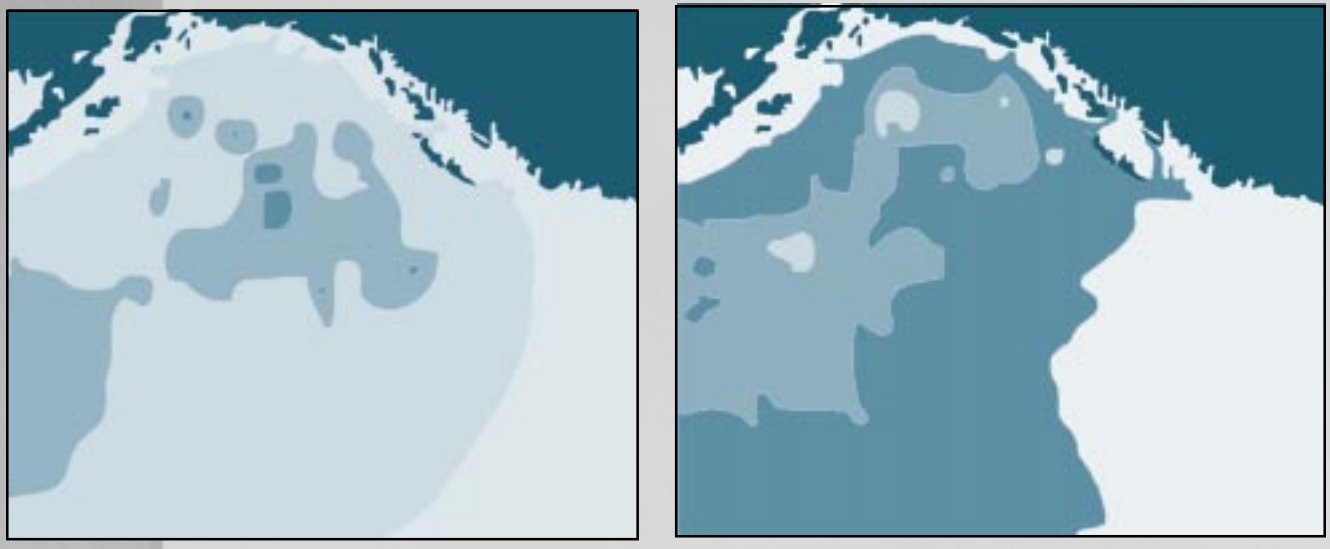
From the Draft GEM document prepared for NRC review.

The next task is to design the GEM monitoring plan by focusing on key species in the system and the most important physical and biological processes responsible for their production. The first step in meeting this challenge was to convene three focus groups in the summer of 2000 to consider monitoring and research in the Kodiak, Cook Inlet and Prince William Sound areas. The ideas generated by these groups were the focal point of a workshop in October 2000 attended by more than 200 scientists and others interested in marine monitoring from all over Alaska and the western United States, as well as from places as far away as Maine, Maryland, Louisiana and Texas. At the end of the year 2000, The Council's consultative process had produced a record of the needs of users and the advice of stakeholders and experts about the type of marine monitoring relevant to the northern Gulf of Alaska.

> "When the resident population is combined with over one million tourists each year, it becomes clear that the natural resources of the spill area cannot be immune to the pressures associated with human uses and activities."

From the Draft GEM document prepared for NRC review.

The goal of GEM is to build on the ecosystem knowledge gained through 10 years of post-spill research in the northern Gulf of Alaska, as well as the research and monitoring efforts of a multitude of state and federal agencies, universities, and private entities, in order to learn more about the physical and biological forces that impact the region, as well as the human activities that could threaten the area's resources now and in the future. The goal is to watch over the entire northern gulf from its river watersheds to estuaries, to nearshore areas to open ocean.



This map illustrates the change in plankton productivity in the Gulf of Alaska during decade-long shifts in the weather patterns. At left, plankton production during a long cooling period is minimal compared to the production during a warming period. Cyclic warming and cooling can result in drastic changes in species composition in the northern gulf.

GEM Implementation Schedule

May 2001
Trustee Council approves draft GEM monitoring and research plan

June – November 2001
National Research Council reviews draft plan

October 2001
Begin FY 2002 transition projects

December 2002
Receive final NRC review

January 2002
Trustee Council finalizes GEM Program and plan in response to public comments and NRC recommendations

February 2002
Issue GEM invitation for proposals (FY 2003)

October 2002
Begin GEM monitoring and research program

GEM at a Glance:

The Problem

Although decades of salmon and herring harvest data are available, other significant ecosystem information is lacking. Much of the life cycle of salmon and herring remains a mystery and little is known about many species in the gulf. Solid data on the physical condition of the sea (temperature, salinity, current, etc.) and how this impacts species from plankton to sea lions is not available. Therefore, the historical context necessary to understand why harvests fluctuate greatly or why several fish, birds and mammals are in decline is lacking. Without this information, it is impossible to assess whether these are natural changes or the result of human activities, leaving resource managers stymied over how to manage the resources under their care.

The Solution

Collect data over time that will fill in the gaps and identify the physical and biological changes to the north Gulf of Alaska ecosystem. Distinguish between natural trends and human caused changes in the environment. Use the information to model potential future changes. Conduct research to better understand the ecosystem functioning and develop practical tools for managers of fish, wildlife and land. Involve communities and stakeholders in all aspects of the program to ensure that the concerns of the residents of the north Gulf are listened to.

The Mission

"sustain a healthy and biologically diverse marine ecosystem in the northern Gulf of Alaska (GOA) and the human use of the marine resources in that ecosystem through greater understanding of how its productivity is influenced by natural changes and human activities."

Programmatic Goals

DETECT: Serve as a sentinel (early warning) system by detecting annual and long-term changes in the marine ecosystem, from coastal watersheds to the central gulf;

UNDERSTAND: Identify causes of change in the marine ecosystem, including natural variation, human influences, and their interaction;

PREDICT: Develop the capacity to predict the status and trends of natural resources for use by resource managers and consumers;

INFORM: Provide integrated and synthesized information to the public, resource managers, industry and policy makers in order for them to respond to changing conditions; and

SOLVE: Develop tools, technologies, and information that can help resource managers and regulators improve management of marine resources and address problems that may arise from human activities.

Habitat Protection

The long-term protection of threatened habitat, considered essential for the well-being of species injured by the oil spill, was one of the earliest goals of the Trustee Council. Restoration efforts in the Pacific Northwest have taught us that habitat protection is essential to the health of salmon species. Researchers have concluded that depleted salmon populations cannot rebuild if habitat that is critical during any of their life stages is seriously compromised.

Approximately $25.1 million has been set aside for a long-term habitat fund.

This lesson extends as well to the other fish, birds, and mammals that nest, feed, molt, winter, and seek shelter in the spill area. Habitat protection also supports the restoration of commercial fishing, subsistence, recreation, and tourism, all of which are dependent upon healthy productive ecosystems.

Because complete recovery from the oil spill may not occur for decades, and because healthy habitats are essential to the permanent recovery of the spill region, the Council has taken steps to extend its comprehensive restoration program beyond September 2001, when Exxon makes its final settlement payment. By unanimous resolution in March 1999, the Council set aside $55 million of Restoration Reserve funds to continue its effort to protect key habitats. The $55 million will be split between $29.9 million for lands along the Karluk and Sturgeon rivers on Kodiak Island (a 10-year conservation easement and an escrow fund for potential future acquisition) and $25.1 million to be managed as a long-term funding source for an ongoing acquisition program.

Investment earnings should initially provide about $1.25 million per year for the ongoing acquisition program, and possibly more in the future. It will focus primarily on small tracts of valuable habitat. The Trustees could, however, choose to spend the principal or some of the earnings on larger protection packages, although none are currently identified.

Details on how the habitat program will be administered have not yet been worked out.

Ongoing Programs

The Trustee Council adopted a Restoration Plan in 1994 after an extensive public process that included meetings in 22 spill-area communities as well as in Anchorage, Fairbanks and Juneau. More than 2,000 people participated in the meetings or sent in written comments. The existing programs were adopted in response to that public input.

Reimbursements. As part of the settlement agreement, $173.2 million went to reimburse the federal and state governments for costs incurred conducting spill response, damage assessment, and litigation. Another $39.9 million went to reimburse Exxon for cleanup work that took place after the civil settlement was reached.

The remaining funds were dedicated to implementation of the Restoration Plan, which consists of:

Research, Monitoring, and General Restoration. Monitoring of fish and wildlife in the spill region provides basic information to determine population trends, productivity, and health. Research increases our knowledge about the biological needs of individual species and how each contributes to the Gulf of Alaska ecosystem. Research also provides new information and better tools for effective management of fish and wildlife populations. General restoration includes projects to protect archaeological resources, improve subsistence resources, enhance salmon streams, reduce marine pollution, and restore damaged habitats.

Habitat Protection. Protection of habitat helps prevent additional injury to species due to loss of habitat. The Trustee Council accomplishes this by providing funds to government agencies to acquire title or conservation easements on land important for its restoration value.

Restoration Reserve. This savings account was established in recognition that full recovery from the oil spill would not occur for decades. The reserve fund will support long-term research and monitoring and additional habitat protection after the final payment is received from Exxon in September 2001. The reserve, including unallocated funds and interest, is expected to be worth approximately $186 million. The Council's decision on how to spend the reserve followed 22 meetings throughout the spill region and review of 2,432 comments received.

Public Information, Science Management & Administration. This component includes management of the annual work plan and habitat programs, scientific oversight of research, monitoring and restoration projects, agency coordination, and overall administrative costs. It also includes the cost of public meetings, newsletters and other means of disseminating information to the public.

Uses of Civil Settlement
(in millions)

Reimbursements	**213.1**
for Damage Assessment and Response	
Governments (includes litigation and cleanup)[a]	173.2
Exxon (for cleanup after 1/1/91)	39.9
Research, Monitoring	**166.0**
and General Restoration	
FY 1992 - FY 2001 Work Plans	123.8
FY 2002 Work Plan (estimate)	5.0
Alutiiq Museum (Kodiak)	1.5
Archaeological Repository/Exhibits (PWS & Kenai Pen)	3.0
Alaska SeaLife Center	26.2
Port Graham Hatchery	.8
Reduction of Marine Pollution/Waste Oil	5.7
Habitat Protection	**376.3**
Large Parcel and Small Parcel habitat protection programs (past expenditures, outstanding offers, estimated future commitments and parcel evaluation costs)	
Restoration Reserve	**186.1**
(Principal, projected interest, unobligated funds)	
Koniag Special Account	29.9
Future Acquisitions	25.1
Gulf Ecosystem Monitoring (GEM)	131.1
Science Management,	**29.7**
Public Information & Administration	
FY 1992 - FY 2001	28.2
FY 2002 (estimate)	1.5
Total	**971.2**
Exxon Payments	900.0
Accrued interest (minus fees)	51.3
Projected interest (through 9/30/02)	19.9

(a) Reimbursement to governments reduced by $2.7 million included in the FY 1992 Work Plan.

As of February 15, 2001

Status of Injured Resources and Services

The Trustees have dedicated about 40 percent of available funds or $285 million to funding one of the largest marine science efforts in the world. Hundreds of studies have been undertaken to improve understanding of the dynamics of the spill-area ecosystem as a whole and the individual roles played by fish and wildlife species.

Twelve years after the spill, it is clear that many species injured by the spill have not fully recovered. It is less clear, however, what role oil plays in the inability of some populations to bounce back. An ecosystem is ever changing and continues its natural cycles and fluctuations at the same time that it struggles with the impacts of spilled oil. As time passes, separating natural change from oil-spill impacts becomes more difficult.

Not Recovering

There are eight species that continue to be listed as not recovering: common loons, cormorants (pelagic, double-crested and red-faced), harbor seals, harlequin ducks, killer whales (AB pod), and pigeon guillemots. The factors affecting their recovery status vary or are unknown.

Common loon

Loons are long-lived, slow-reproducing, and have small populations. Common loons in the spill area may number only a few thousand, including only hundreds in Prince William Sound, yet carcasses of 395 loons were recovered following the spill, including at least 216 common loons. Boat surveys in the sound show no recovery through 2000.

Cormorant

Cormorants are large fish-eating birds that spend much of their time on the water or perched on nearby rocks. Three species typically are found within the oil-spill area: pelagic, double-crested, and red-faced. Post-spill counts showed significant declines in the estimated numbers of cormorants (all three species combined) in Prince William Sound when compared to pre-spill populations. Boat surveys in the sound show no recovery through 2000.

Harbor seal

A harbor seal is tagged for study and released.

Harbor seal populations in Prince William Sound and the Gulf of Alaska have declined by 80 percent in the last 20 years. The declines may be related to environmental changes occurring since the late 1970s, but this is unclear. The oil spill killed an estimated 300 seals, resulting in a one-year drop of 43 percent in oiled areas of the sound. The decline has continued at an average rate of about 3.3 percent from 1990-1999.

Harlequin duck

Harlequin ducks feed in intertidal and shallow subtidal habitats where most of the spilled oil was initially stranded. Three years of data on overwintering adult female harlequins indicate significantly lower survival rates in oiled versus unoiled parts of the sound. Researchers still believe that continued hydrocarbon exposure is a potential contributing factor to their lack of recovery.

Killer whale

Researchers identify killer whales by their dorsal fins.

The AB pod of killer whales, which lost 13 of 36 members in the two years following the oil spill, has yet to regain its former size, even though the overall size of the Gulf of Alaska population has increased since the spill. The pod lost several adult females and juveniles and it is expected to take many years for natural reproduction to make up for those losses. The pod has increased by two members since 1996.

Pigeon guillemot

The pigeon guillemot population in Prince William Sound had declined before the spill and it is estimated that 10-15 percent of the spill-area population may have died following the spill. Surveys in the sound show no evidence of a post-spill population increase through 1998.

Recovered

At the other end of the recovery scale are bald eagles and river otters. These species have been declared "recovered" because their populations now appear healthy.

Bald eagle

An estimated 6,000 bald eagles live year-round or seasonally in Prince William Sound. Although an estimated 250 eagles died during the spill, the population rebounded quickly and the bald eagle was formally designated as recovered in 1996.

River otter

River otters feed in intertidal areas making them vulnerable to spilled oil. Studies from 1989-91 identified differences in the biochemistry and behavior of river otters in oiled and unoiled areas,. River otters were listed as recovered in February 1999 after two years in which differences were no longer measurable.

Resources and Services Injured by the Spill

Not Recovering

Species are showing little or no clear improvement since spill injuries occurred.

- Common loon
- Cormorants (3 spp.)
- Harbor seal
- Harlequin duck
- Killer whale (AB pod)
- Pigeon guillemot

Recovering

Substantive progress is being made toward recovery objective. The amount of progress and time needed to achieve recovery vary depending on the resource.

- Archaeological resources
- Black oystercatcher
- Clams
- Common murres
- Intertidal communities
- Marbled murrelets
- Mussels
- Pacific herring
- Pink salmon
- Sea otter
- Sediments
- Sockeye salmon
- Subtidal communities

Recovered

Recovery objectives have been met.

- Bald eagle
- River otter

Recovery Unknown

Limited data on life history or extent of injury; current research inconclusive or not complete.

- Cutthroat trout
- Designated Wilderness Areas
- Dolly Varden
- Kittlitz's murrelet
- Rockfish

Human Services

Human services that depend on natural resources were also injured by the oil spill. These services are each considered to be recovering until the resources on which they depend are fully recovered.

- Recreation & tourism
- Commercial fishing
- Passive uses
- Subsistence

Recovering

Several resources appear to be making progress toward recovery, but have not met specific recovery objectives. These include black oystercatchers, common murres, marbled murrelets, mussels, Pacific herring, pink salmon, sea otters, sockeye salmon, clams, and intertidal and subtidal communities.

Black oystercatcher

A black oystercatcher chick is banded.

It's estimated that there are only about 15,000 black oystercatchers worldwide, about 10 percent of which summer in Prince William Sound. They spend their entire lives in the intertidal area and are highly vulnerable to spilled oil. Oystercatchers appear to be reoccupying and nesting at once-oiled sites, and there are no oil-related impacts on productivity and chick survival.

Common murre

About three-quarters of all the bird carcasses found after the spill were murres, resulting in declines of as much as 40 percent in local common murre populations. By 1997, common murre colonies had bounced back to near pre-spill population levels. Though the 1997 El Niño brought a temporary setback for the murres, the murre populations appear to be recovered now at the Barren Islands. Surveys at the Chiswell Islands will take place in 2001.

Marbled murrelet

The marbled murrelet is listed as a threatened species throughout the Pacific Northwest, but is relatively abundant in Alaska. It is estimated that as much as 7 percent of the marbled murrelet population in the spill area was killed by the spill. Marbled murrelets declined before the spill, losing 67 percent of their population in Prince William Sound since 1972. Murrelet numbers in winter increased after the spill and productivity appears to be within normal bounds.

Mussel beds

To protect mussel beds and the many species they harbor from additional injury, the beds were not cleaned after the spill. Twelve years later, oil persists in some mussel beds in Prince William Sound, providing potential pathways of oil contamination for sea otters, river otters, black oystercatchers and harlequin ducks.

Pacific herring

Some Pacific herring spawning areas were contaminated by oil, resulting in increased egg mortalities and larval deformities. Although the significance of these initial injuries to long-term population levels has not been established, sharp declines in herring numbers after the spill and little recovery since are cause for concern. Pacific herring in Prince William Sound suffered a dramatic collapse in 1993. The commercial herring fishery in the sound was closed for four successive years, opening again in 1997 and 1998. In 1999 the herring population suffered another setback and the commercial season was again closed in 1999 and 2000. Although it is highly unlikely that Pacific herring continue to be affected by any residual oil in the spill area, full recovery to pre-spill population levels awaits recruitment of a major new year-class of fish.

Pink salmon

Pink salmon fry

Overall, pink salmon are recovering well from the effects of the oil spill. There had been recent concerns about the sensitivity of early life stages of pink salmon to very low localized concentrations of crude oil, and on this basis the Council listed the pink salmon as recovering from the effects of the oil spill in 1999, the last time the injured species list was fully evaluated.

Sea otter

An estimated 13,000 sea otters currently populate Prince William Sound. It is clear that recovery is underway for sea otters, with the exception of local populations in the most heavily oiled bays on Knight Island. The lack of recovery at Knight Island may reflect the extended time required for population growth for a long-lived mammal with a low reproductive rate and slow dispersal rate, but it also could reflect the effects of continuing exposure to hydrocarbons or a combination of both factors.

Sockeye salmon

Nearly all commercial salmon fishing was closed throughout the spill region in 1989, allowing many more sockeye spawners than desirable to enter some watersheds. This produced an unusually high abundance of juvenile sockeye that depleted the food resources of the nursery lakes. The result was an overall decline in growth of juveniles and reduced rates of adult returns to some areas. Although the rates of adult returns appear to be returning to normal, accounting for returns from some of the affected brood years has yet to be completed.

Intertidal & subtidal communities

Intertidal and subtidal communities are well on their way to recovery, but recovery has generally been lagging in the upper intertidal zone. Subtidal communities include such species as eelgrass, starfish and helmet crabs that remain nearshore but underwater at all times. Intertidal communities include the flora and fauna that live between the low- and high-tide lines, such as clams, *Fucus*, barnacles, and chitons.

Monitoring the recovery of intertidal organisms.

Recovery Unknown

For some species, not enough is known about their original injury, current populations, reproductive success, and overall health to make a judgment on their recovery. Species for which recovery is unknown are cutthroat trout, Dolly Varden, Kittlitz's murrelets, and rockfish.

Cutthroat trout

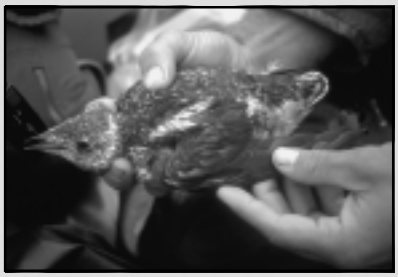
Prince William Sound cutthroat trout populations are small and geographically isolated. Cutthroat trout, therefore, are highly vulnerable to exploitation, habitat alteration, and pollution. In 1989 and 1990, following the oil spill, cutthroat trout in a number of oiled streams grew more slowly than in unoiled streams. However, studies have since found inherent differences in growth between the eastern and western sound, and a fairly high degree of overall variability in growth. Current information is not sufficient to quantify the possible injury to cutthroat trout and their recovery status is unknown.

Dolly Varden

Dolly Varden had some of the highest hydrocarbon concentrations of any fish studied in 1989. There is evidence that Dolly Varden in a number of oiled streams grew more slowly than in unoiled streams in 1989 and 1990. The degree of exposure makes it likely that Dolly Varden were injured by the spill, but the lack of historical data prevents quantifying those injuries and their recovery status is unknown.

Kittlitz's murrelet

Kittlitz's murrelets are found only in Alaska and portions of the Russian Far East. It's estimated that more than 1,000 individuals died from the oil spill, which would represent a substantial fraction of the world population. Very little is known about this species. Small population, low reproductive success, and affinity to tidewater glaciers (some of which are receding rapidly) are reasons for concern about the long-term conservation of Kittlitz's murrelet.



Kittlitz's murrelet

Rockfish

Relatively little is known about the complex of rockfish populations in the northern Gulf of Alaska. Some dead adult rockfish were recovered following the oil spill and autopsies indicated oil ingestion as the cause of death. In addition, closures of salmon fisheries apparently increased fishing pressure on rockfish. However, the original injury from the spill is uncertain, as are any long-term effects.

Rockfish

Human Services

The lives of the people who live, work, and play in the areas affected by the spill were completely disrupted in the spring and summer of 1989. Commercial fishing families did not fish. Those people who traditionally subsist on the fish, wildlife and plants of the region could no longer trust what they were eating and turned instead to high-priced groceries. Recreational opportunities were mostly shut down and the world-wide image of an attractive and pristine Prince William Sound was tarnished with oil.

Salmon drying on a rack in Old Harbor

Twelve years later, a sense of normalcy is returning to the spill region, but residents, fishers, and the tourism/recreation industry have not fully recovered.

The Trustee Council determined that the "human services" of commercial fishing, subsistence, recreation/tourism and passive use will have recovered when the injured resources on which they depend are once again healthy and productive. Since that level of recovery has not been achieved, each of these services is considered to be recovering.

Habitat Protected

The Trustee Council's habitat protection effort is comprised of a Large Parcel Program (generally parcels over 1,000 acres) and a Small Parcel Program (generally parcels of 1,000 acres or less). Through these two programs, the Trustees have dedicated nearly 60 percent of available settlement funds or $431 million for habitat protection in the spill region.

The goal of the Large Parcel Program is to protect key habitats for injured species throughout the spill region. To date, 635,770 acres have been protected through a creative series of conservation easements, timber easements, and fee simple acquisitions.

The Council's Large Parcel Program is essentially complete. The only unfinished business is the extension of the conservation easement on 55,402 acres along the Karluk and Sturgeon rivers on Kodiak Island. The Council's January 2001 offer to extend the existing non-development easement through 2011,

Large Parcel Program

Parcel Description	Acreage	Coastal Miles[3]	Salmon Rivers[4]	Total Price	Trustee Council's Share
Acquisitions Complete					
Afognak Joint Venture	41,750	99	18	$74,023,342	$74,023,342
Akhiok-Kaguyak	115,973	202	39	$46,000,000	$36,000,000
Chenega	59,520	190	45	$34,000,000	$24,000,000
English Bay	32,537	123	31	$15,371,420	$14,128,074
Eyak	75,425	189	80	$45,129.854	$45,129,854
Kachemak Bay State Park inholdings	23,800	37	3	$22,000,000	$7,500,000
Koniag (fee title)	59,674	41	11	$26,500,000	$19,500,000
Koniag (limited easement)	55,402			$2,000,000	$2,000,000
Old Harbor [1]	31,609	183	13	$14,500,000	$11,250,000
Orca Narrows (timber rights)	2,052		2	$3,450,000	$3,450,000
Seal Bay/Tonki Cape	41,549	112	5	$39,549,333	$39,549,333
Shuyak Island	26,665	31	8	$42,000,000	$42,000,000
Tatitlek	69,814	212	50	$34,719.461	$24,719,461
TOTAL:	**635,770**	**1,419**	**305**	**$399,243,410**	**$343,250,045**
Offers Made					
Koniag (extend easement)[2]	(above)			$30,100,000	$29,950,000

1. As part of the protection package, the Old Harbor Native Corporation agreed to protect an additional 65,000 acres on Sitkalidak Island as a private refuge.
2. The Council's offer would extend the conservation easement, due to expire in December 2001, for an additional ten years.
3. Approximate miles of coastline protected.
4. Approximate number of anadromous rivers, streams and spawning areas protected.

and establish an escrow fund for potential acquisition if desired by Koniag in the future, was approved by the Koniag Board of Directors in March 2001.

The Small Parcel Program deals with smaller, more strategically located habitats. These are usually located on coves, along important stretches of river, at the mouths of rivers, or adjacent to valuable tidelands. They are often close to spill area communities or within already protected areas, such as refuges and parks. These lands are acquired for their habitat qualities as well as their importance for subsistence and recreational use. To date, 86 parcels totaling 7,815 acres have been acquired and protected. The Council has set aside funds for another 1,663 acres under consideration for protection.

The Small Parcel Program will continue in 2001 and 2002 through a Trustee Council grant of $1 million to The Nature Conservancy and The Conservation Fund. The advantages these two non-profit organizations bring to the program are an ability to respond more quickly than government to opportunities for acquisition of priority lands, to leverage resources by attracting matching funds, and to broaden the protection impact of dollars spent by achieving below-appraised-value purchases through the use of tax incentives and estate planning strategies.

Roughly $25 million in Restoration Reserve funds have been earmarked for continuing the program beyond 2002, as described earlier.

Habitat programs have resulted in the protection of nearly 650,000 acres in the spill region.

Acquisitions: Small Parcel Program

Region	Acreage	Price
Prince William Sound	450	$1,907,300
Kenai Peninsula	5,725	$15,896,100
Kodiak/Alaska Pen.	1,640	$2,593,300

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