



*Exxon Valdez Oil Spill
Trustee Council*

2007 Annual Report

Notice

The *Exxon Valdez* Oil Spill Trustee Council administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility please write:

- ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK 99811-5526.
- The department's ADA Coordinator can be reached via phone at the following numbers: (VOICE) 907-465-6077, (Statewide Telecommunication Device for the Deaf) 1-800-478-3648, (Juneau TDD) 907-465-3646, or (FAX) 907-465-6078.
- U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington, VA 22203
- Office of Equal Opportunity, U.S. Department of the Interior, Washington DC 20240.





Mission Statement

The mission of the *Exxon Valdez* Oil Spill Trustee Council 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 has been and will be accomplished through the 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

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Dear Reader:

In 2007, the Council recognized that a tremendous amount of work had been accomplished over 13 years of research, monitoring and specific activities directed at addressing the restoration and rehabilitation goals of the 1994 Restoration Plan. Several resources in the Sound continue to be affected by the spill and have been monitored closely by the Council. While the 1994 Restoration Plan establishes a plan for the restoration of all injured resources and services, the Trustees identified the need for a plan to specifically address the critical status of Pacific herring in the Sound.

Herring are an important component of the Sound ecosystem, both ecologically and commercially. Herring were initially impacted by the oil spill, and the Council has continued to classify them as a non-recovering injured resource. Pacific herring are an essential part of the marine food web in the Sound and provide food for birds, marine mammals and invertebrates. Therefore, the Council committed in FY07 to developing a long-term Herring Recovery Plan with the ultimate goal of assisting herring recovery in the Sound. A restoration planning effort began in late 2006 and a final draft document will be available to the public in December 2008. This collaborative planning process includes subsistence-resource users, government agency representatives, non-governmental organizations, commercial fishermen, scientists and other stakeholders.

Also, the Trustee Council's commitment to community involvement in the restoration process remains strong. Projects that involve local communities in ongoing restoration and monitoring activities and projects that proposed to enhance subsistence resources injured by the spill were funded. An Environmental Education/Committee Outreach Committee was formed to develop an inclusive educational outreach plan that will help bring together the *Exxon Valdez* Oil Spill Trustee Council (EVOSTC) scientists and the effected communities in the oil spill region. The Committee consists of EVOSTC Public Advisory Committee (PAC) members, community outreach specialists, teachers, and administrators.

Eighteen years ago, we had little understanding of the potential long-term effects that would result from the *Exxon Valdez* Oil Spill. With the information provided by our researchers, resource managers, and the public the Council is continually evolving to seek better ways to achieve our mission. The Trustee Council has continued the work of its predecessors by turning abstract restoration goals into concrete achievements. We look forward to the next year of work and invite your involvement.

Michael Baffrey
Executive Director





Denby Lloyd
Commissioner
Alaska Department of Fish
& Game



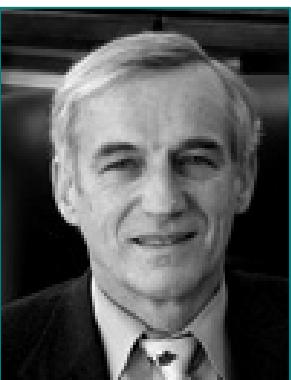
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Council Priorities for FY07

- Form a Herring Steering Committee to form a Recovery Plan for the restoration of Pacific herring in Prince William Sound.
- Convene an Education/Outreach Committee to discuss opportunities for the Trustee Council to connect to impacted communities.
- Update and add to our existing peer review experts database for proposal and final report review.
- Continue to build a scientific library that is publicly accessible through ARLIS.
- Create a Restoration Panel of established experts in ecosystem restoration to assist the Trustee Council in moving toward more active restoration projects.

2007 Trustee Council

The *Exxon Valdez* Oil Spill Trustee Council was formed to jointly use the \$900 million civil settlement to restore, replace, enhance or acquire the equivalent of natural resources injured as a result of the oil spill and the reduced or lost services provided by such resources. The Council consists of three State of Alaska trustees and three Federal trustee members.



Restoration Reserve

This savings account was established in recognition that full recovery from the oil spill would not occur for decades. In October 2000, the funds were transferred to the Alaska Department of Revenue, which manages and invests them on behalf of the Trustee Council.

Public Information, Science Management, and Administration

This component includes management of the annual work plan and habitat programs, scientific oversight of projects, agency coordination and overall administrative costs. It also includes funds for public meetings, public notice and other means of disseminating information to the public.

How the Settlement Has Been Used

The following table accounts for how settlement funds have been used (in millions) as of August 31, 2007:

<u>Total Revenue</u>	\$1,020.2
Exxon Payments	\$900.8
Interest/Earnings (Minus Fees Plus Recoveries)	\$119.4
<u>Reimbursements for Damage Assessments & Response</u>	\$216.4
Governments (includes Litigation & Clean-up)	\$176.5
Exxon (Clean-up during 1991 and 1992)	\$39.9
<u>Research, Monitoring & General Restoration (FY 92 – FY 07)</u>	\$178.0
FY92–FY02 Work Plans –Restoration Program Projects	\$128.6
FY03–FY07 Work Plans –Restoration Program Projects	\$12.8
Infrastructure Improvements – Alaska SeaLife Center.....	\$6.2
Archaeological Repository/Exhibits	\$1.8
Reduction of Marine Oil Pollution.....	\$5.7
Port Graham Hatchery.....	.8
Kenai River Restoration & Recreation Enhancement	\$2.1
<u>Habitat Protection</u>	\$374.8
Due Diligence Activities	\$4.4
Large Parcel Acquisition	\$347.9
Small Parcel Acquisition	\$22.5
<u>Annual Program Development & Implementation (FY92–FY07)</u>	\$42.3
FY92–FY02 Annual Program Development & Implementation	\$29.7
FY03–FY05 Annual Program Development & Implementation	\$8.4
FY06–FY07 Annual Program Development & Implementation	\$4.2
<u>Investment Trust Fund Balance as of 8/31/07</u>	\$208.7
Research Investment Sub-Account	\$120.9
Habitat Investment Sub-Account	\$39.8
Koniag Investment Sub-Account	\$48.0



Summary of Council Funded Projects Completed in FY07

Brown - Evaluation of Airborne Remote Sensing Tools

The airborne remote sensing project focused on two main goals: 1) to contribute to a suite of studies designed to determine why western Steller sea lion populations have declined so drastically, and 2) to evaluate the effectiveness of airborne remote sensing. The results of this project are that airborne methods can appropriately measure large zooplankton abundance, distribution, and relationship to environmental characteristics. In contrast to a vessel, airborne techniques can be used to cover large spatial areas and perform high resolution temporal sampling appropriately matching the patchiness and variation observed in GOA plankton.

Kline - Nutrient-Based Resource Management

In order to implement a successful monitoring program for salmon in Prince William Sound (PWS), it is essential that nutrient cycling among and within watersheds, estuaries, and nearshore areas be understood. This project accomplished

several important goals including: 1) how to measure marine- and watershed-derived nutrients in watersheds and estuaries, 2) determining the variability of nutrient measures, and 3) relating nutrient measures to production, as a result of salmon and other marine-derived inputs to coastal watersheds. *The results of this project were published in American Fisheries Society Symposium, Volume 54.*

Bickford - Using Otolith Chemical Analysis to Determine Larval Drift of PWS Pacific herring

This project investigated the possibility of identifying the nursery bays of Pacific herring through the use of otolith chemistry. Regional differences in isotopic signatures were found in all juvenile herring sampled in PWS, which validated the hypothesis of this project. There were significant differences in the edge signatures of juvenile Pacific herring otoliths among capture bays, among capture years, by year class, between regional groups, and among management areas when all of the data was pooled.

Goldman - Monitoring Ecosystem Parameters in the Northern Gulf of Alaska

This project allowed the continuation of long-term monitoring of forage species populations in Kachemak Bay in lower Cook Inlet, an area representative of ecosystem conditions and changes in the northern Gulf of Alaska. Finfish and shellfish were sampled annually in the springtime with a small-mesh, bottom trawl to determine species composition, abundance and biomass, and whether responses to the environment are causing changes in the species assemblages and whether those factors may be favoring the abundance of one species over another. While this survey has documented changes in the species composition and relative abundance of fishes and crustaceans in Kachemak Bay over the past 35 years, no major changes were seen in the species assemblages over the three years of this project.



Council Funded Projects Completed in FY07 - *continued*

Honnold - Marine-Terrestrial Linkages in Northern Gulf of Alaska Watersheds

Physical parameters, nutrient composition, chlorophyll and zooplankton were monitored in two lakes (anadromous Karluk and control Spiridon) and in headwaters of salmon producing tributaries, and applied to the understanding of fluctuations in smolt outmigration and subsequent adult returns. Seasonal cycles of water chemistry, nutrients, and zooplankton were described and the relationships of these parameters to both salmon returns and salmon production were assessed. Both of these relationships supported the findings of the isotope analysis, which indicated a high component of marine-derived nutrients in particulate organic matter, zooplankton and smolt tissue.

Thorne - Impacts of Seafood Waste Discharge in Orca Inlet, PWS

This three-year study examined the impacts of seafood waste discharge into Orca Inlet, including evaluation of alternative discharge and disposal methods. The study included model development and control-treatment experiments.

A dispersal model was developed that incorporated both physical and biological transport mechanisms and demonstrated improvements over current practices. Methodologies included underwater cameras, traps, acoustic tags attached to salmon heads, and visual surveys of birds and marine mammals. The results show that the heads and carcasses disperse rapidly and are efficiently incorporated into the food chain with no negative consequences, a very favorable contrast to the current EPA-mandated practice.

Okkonen - A Monitoring Program for Near-Surface Temperature, Salinity, and Fluorescence Fields

Near-surface measurements acquired by thermosalinograph reveal prominent fronts at the shelf break, at Hinchinbrook Entrance, and in northern Prince William Sound. The strength of these fronts follows the seasonal cycle of freshwater in the northern Gulf of Alaska. The shelf break front is maintained by Alaska Coastal Current waters originating east of Kayak Island. The Hinchinbrook Entrance front is maintained by discharge from the Copper River and the northern sound front is maintained by freshwater discharges from Port Valdez and Columbia Glacier. Thermosalinograph data was also used in conjunction with satellite, drifter, and other hydrographic data to investigate circulation and shelf-slope exchange associated with anticyclonic eddies in the northern Gulf of Alaska.

Walker - Presence and Effects of Marine Derived Nutrients (MDN) in Stream, Riparian and Nearshore Ecosystems

MDN delivered by salmon and other anadromous fishes are considered important drivers in riverine ecosystems, providing nutrients and food to these land-based food webs. However, little is known about the relative value of MDN compared to other nutrient and carbon sources (e.g., watershed-derived) in the Gulf of Alaska region. This study developed a water chemistry proxy for monitoring salmon returns to track and measure MDN effects in stream, riparian, and nearshore environments on the southern Kenai Peninsula. Water nutrient profiles suggest rapid nitrogen (N) uptake in Homer streams, which have underlying phosphorous (P) rich geology. Stable isotopes were most effective when the salmon-free end member was relatively depleted. Marine-derived nitrogen (N^{15}) was highly variable, likely due to spatial variation in N sources and cycling, and may not be a reliable predictor of MDN inputs at the watershed scale.



Council Funded Projects for FY07

- Baird** – Connecting with Coastwalk
Ballachey - Sea Otter Recovery and Nearshore Synthesis
Batten - Acquisition of Continuous Plankton Recorder Data
Bickford – Identifying Herring Natal & Nursery Habitats
Bishop - Seabird Predation on Juvenile Herring in PWS
Boufadel - Factors Limiting the Degradation Rate of EVOS Oil
Bodkin - Long-Term Monitoring of Nearshore Resources
Cokelet – AK Marine Highway System Ferries
Esler - Evaluating Harlequin Duck Population Recovery
Gay - Oceanographic Factors Affecting Productivity of Pacific Herring
Hershberger - PWS Herring Disease Program
Hoover-Miller – Harbor Seal Monitoring
Irons - PWS Marine Bird Surveys, Synthesis and Restoration
Irons - Pigeon Guillemot Restoration in PWS
Kiefer - An Ecosystem Model of PWS Herring
Kline - PWS Herring Forage Contingency
Lindeberg - ShoreZone Mapping for PWS
Linley - Development of Culture Technology of Herring in PWS
Matkin - Monitoring, Tagging, Feeding Studies, and Restoration of Killer Whales
Meuret-Woody - Habitat for Pacific Herring in Sitka Sound
Michel - Assessment of the Areal Distribution and Amount of Lingering Oil
Moffitt - Herring Data & Information Portal
Nelson - The Exxon Valdez Trustee Hydrocarbon Database
Otis - Using Otolith Chemistry to Discriminate Pacific Herring Stocks in AK
Otis – Temporal Stability of Fatty Acids in Pacific Herring
Rice - Whale Predation on Natural Mortality Rate of Pacific Herring in PWS
Rosenberg - Harlequin Duck Population Dynamics in Prince William Sound
Salasky - Youth Area Watch - PWS
Schneider - Kodiak Archipelago Youth Area Watch
Shigenaka - Bioavailability and Effects of Lingering Oil to Littleneck Clams
Thorne - Trends in Adult & Juvenile Herring Distribution & Abundance
Vollenweider - Are Herring Energetics in PWS a Limiting Factor?
Weingartner - Oceanographic Monitoring of the Alaska Coastal Current



Data Management

The data management team has made significant progress this year in expanding and improving the information available in the Trustee Council's data system and website. Our website currently ranks in the top three results on major web search engines for information about the spill, and we average over 3000 unique visitors each month. Over 450 annual project reports and nearly 350 final reports have been digitized and made available via our website.

A new application called ProjectView has been deployed which provides a unique set of tools to enhance collaboration and sharing of datasets between EVOS scientists, and ensures the future availability of these important datasets to the scientific community. Upon completion of a project, final versions of all datasets will be permanently archived and made available to the public via the website. ProjectView also takes advantage of features provided by Google Maps and Google Earth, allowing scientists to create and upload customized maps depicting project and data collection locations and other features of interest.

Working in collaboration with the North Pacific Research Board (NPRB) and the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK-SSI), we have further enhanced our peer review system and provided a mechanism for peer reviewing final reports in addition to project proposals.

EVOSTC Staff Activities in 2007

Annual Marine Science Symposium

January 21-24, 2007



EVOSTC researchers presented their work in both speaker and poster sessions. Office staff was responsible for computer assistance, presentation timing, and attendee check-in. Michael Baffrey was the invited keynote speaker for the Gulf of Alaska day. Presentations were made by Matkin, Kline, Thorne, Norcross, and Finney and posters were presented by Heintz, Nelson, Otis, Willette, Cokelet, Batten, and Lindeberg.



Herring Steering Committee

In November 2006, the Herring Steering Committee was formed and tasked with developing a focused Restoration Plan that identifies strategies to address recovery and restoration of herring; they recognized that activities in the program must span an ecologically relevant time frame that accounts for herring population dynamics and life history attributes. The Committee includes natural resource managers, commercial fishers, research scientists, members of the Public Advisory Committee (PAC) and Native residents of spill area communities.

Education/Outreach Committee

The goal of the committee is to craft an educational outreach program that complements the science curriculum of schools in the oil spill region and allows students of all ages to participate in ongoing research being conducted by EVOSTC researchers or to engage in their own projects relevant to the injured resources and services of the EVOS restoration program. Allowing students to participate in the research projects will strengthen their sense of stewardship, increase scientific and ecological knowledge of their communities, and give them the opportunity to see first hand how their daily decisions make an impact on their environment.



Public and Community Involvement

Since its inception, the Trustee Council has been committed to public participation and local community involvement in all aspects of its programs. The Council recognizes the tremendous loss of livelihood and cultural heritage caused by the spill and has devoted a major portion of the restoration funds to the restoration of fish, birds, marine mammals, and archeological resources that are important economically and culturally.

The Trustee Council is committed to having community members actively involved in:

- Planning and developing the program
- Guiding the goals and topics of research projects
- Collecting data and participating in long term monitoring efforts
- Providing traditional ecological knowledge
- Interpreting results in a local context
- Educating other community members about ongoing research



PWS Youth Area Watch

Highlights

- Youth Area Watch groups in Kodiak and Prince William Sound continue to work with local researchers to enhance science education in the local communities. Over 100 students participate annually in the Youth Area Watch programs.
- Our Public Advisory Committee (PAC) continued their work advising the Trustee Council on matters of public interest. PAC Committee members included:
 - Torie Baker | Marine Transportation
 - Jason Brune | Public at Large
 - Kurt Eilo | Sport Hunting and Fishing
 - Larry Evanoff | Native Landowners
 - Gary Fandrei | Aquaculture
 - Mark King | Tribal Government
 - Robert J. (RJ) Kopchak | Commercial Fishing
 - Patrick Lavin | Conservation and Environmental
 - Steve Lewis | Regional Monitoring
 - Vern McCorkle | Public at Large
 - Ron Peck | Commercial Tourism
 - Martin Robards | Science/Technical
 - Stacy Studebaker | Recreation Users
 - Martha Vlasoff | Subsistence
 - Ed Zeine | Local Government



Alaska Resources Library & Information Services (ARLIS)

ARLIS is the mother lode of Alaska natural resources information and the home of the *Exxon Valdez* Oil Spill Trustee Council's comprehensive collection of EVOS materials, including final and annual project reports, annual work plans, publications, maps, video footage, photographs, and the Council's public record.

Supported by the Trustee Council and seven other state and federal founding agencies, ARLIS was established in Anchorage in 1997 and relocated to the University of Alaska Anchorage campus in 2004.

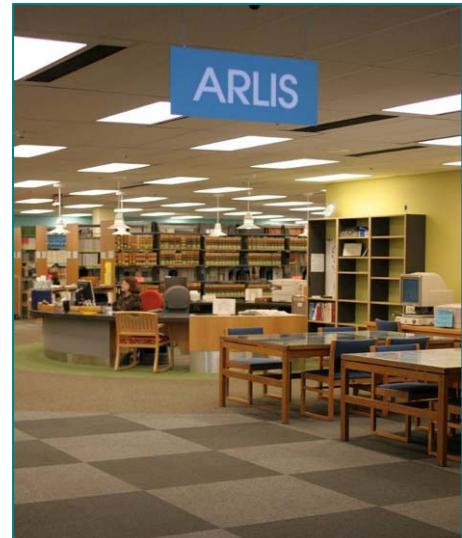
Visitors to ARLIS will find a unique collection of 250,000 books, 700 journals, 200 electronic journals and databases, countless maps, environmental education materials, and a circulating collection of animal furs and skulls and mounted birds.

EVOS information is readily available to researchers and the public through the ARLIS catalog, www.arlis.org, which provides full-text access to Trustee Council publications. Print materials and media are loaned worldwide through a cooperative interlibrary loan system.

Librarians provide reference assistance Monday through Friday, 8:00 a.m. to 5:00 p.m., and much of the collection is available for use evenings and weekends. ARLIS visitors may park free of charge in the UAA parking garage or in the surface lot next to the library building.

Highlights in FY07:

- Since its move to the UAA campus the number of visitors to ARLIS has more than doubled. This year ARLIS welcomed 55,000 visitors.
- Librarians answered 27,000 requests for information and materials from people in Alaska, across the nation, and around the world.
- 10% of ARLIS materials loaned to other libraries were EVOS related.
- 25% of ARLIS materials loaned to other Alaska libraries were EVOS related.
- Librarians cataloged 16,000 new items and added 1,200 full-text digital reports to the ARLIS website, including the Outer Continental Shelf Environmental Assessment Program (OCSEAP) reports.
- Use of the ARLIS website has doubled since 2004, with 600,000 visits this year.
- ARLIS continues to seek new members for its innovative partnership. This year PWS Regional Citizens' Advisory Council joined the PWS Science Center, the Oil Spill Recovery Institute, and the founding agencies in this unique and cost effective collaboration.



ARLIS

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