Exxon Valdez Oil Spill Trustee Council

Restoration Update

November 1995 Vol 2 No. 4

Veterinarian Paul Snyder monitors a sedated sea otter while taking a blood sample. This 98 pound male sea otter was one of the largest ever captured by the National Biological Service team. The animal was measured and its overall health assessed before being revived and released back into Prince William Sound.
Photo by Jennifer DeGroot.

Why so slow to bounce back?

Nearshore Predator Project studies otters, harlequin ducks and pigeon guillemots to answer questions about recovery.

Recent information suggests that harlequin ducks, sea otters and pigeon guillemots are not recovering from injuries caused by the oil spill as quickly as biologists think they should. Since information was incomplete and uncertain, surveyors in the first year of field work on the Nearshore Vertebrate Predator project assessed indicators of the health, population and reproduction success of sea otters and harlequin ducks, as well as several of the invertebrate and fish species they rely on for food.

"We're looking at nutrition, health indicators and population factors which affect these predators and their prey species," project leader Leslie Holland-Bartels said. "The project is intended to find out what is hindering their recovery, and at the same time assess the status of recovery for the overall nearshore ecosystem in western Prince William Sound."

Shorelines throughout the spill area soaked up much of the oil spilled by the *Exxon Valdez*, Bartels said. The Nearshore Vertebrate Predator project uses the invertebrate-feeding sea otter and harlequin duck, and the fish-eating pigeon guillemot and river otter as indicators of environmental stress in an integrated approach to assess factors which may be constraining recovery of the overall nearshore ecosystem.

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Inside...

Calendar

November 15

Signing of Koniag purchase agreement in Washington, D.C. Contact: Rebecca Williams 907/278-8012.

November 20*

Trustee Council meeting in Juneau. Tentative action on small parcel package and Shuyak. Contact: Rebecca Williams 907/278-8012.

December 6 - 7

Public Advisory Group meeting in Anchorage.Contact: Cherri Womac 907/278-8012.

December 11

Trustee Council meeting in Anchorage on final projects for FY96 Work Plan and tentative action on Chenega and Tatitlek large parcels. Contact: Rebecca Williams 907/278-8012.

January 16-18

Annual Restoration Workshop in Anchorage. Contact: L.J. Evans 907/278-8012.

*Tentative dates

The **Restoration Update** is published approximately six times a year by the *Exxon Valdez* Oil Spill Trustee Council. Its purpose is to update interested members of the public about actions, policies and plans of the Trustee Council to restore resources and services injured by the *Exxon Valdez* oil spill.

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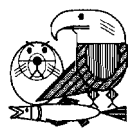


New In Print

These documents are available at the Oil Spill Public Information Center, 645 G St., Anchorage, AK 99501-3451, or by calling 907/278-8008, toll free at 1-800-478-7745 (within Alaska) or 1-800-283-7745 (outside Alaska).

Early marine salmon injury assessment in Prince William Sound, Willette, T.M. et al.

Biomarkers of damage to sea otters in Prince William Sound, Alaska, following potential exposure to oil spilled from the Exxon Valdez, Ballachey, B.

An intersection model for estimating sea otter mortality from the Exxon Valdez *oil spill along the Kenai Peninsula*, Bodkin, J.L. and M.S. Udevitz.

Surveys of sea otters in the Gulf of Alaska in response to the Exxon Valdez *oil spill*, DeGange, A.R. et al.

Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the Exxon Valdez *oil spill*, Dorof, A.M. and A. R. DeGange.

Movements of weanling and adult female sea otters in Prince William Sound, Alaska, after the T/V Exxon Valdez *oil spill*, Monnett, C. and L.M. Rotterman.

Mortality and reproduction of female sea otters in Prince William Sound, Alaska, Monnett, C. and L.M. Rotterman.

Mortality and reproduction of sea otters oiled and treated as a result of the Exxon Valdez *oil spill*, Monnett, C. and L.M. Rotterman.

Mortality of sea otter weanlings in eastern and western Prince William Sound, Alaska, during the winter of 1990-91, Rotterman, L.M. and C. Monnett.

Detection of sea otters in boat-based surveys of Prince William Sound, Alaska, Udevitz, M.S. et al.

Stream habitat assessment project: Afognak Island, Kuwada, M.N. and K. Sundet.

Herring Bay experimental and monitoring studies, Highsmith, R.C. et al.

Injury to deep benthos, Feder, H.M.

Stream habitat assessment project: Prince William Sound and Lower Kenai Peninsula, Final Report Restoration Project 93051, Sundet, K. et al.

Survey of pigeon guillemot colonies in Prince William Sound, Final Report Restoration Project 93034, Sanger, G.A. and M.B. Cody.

Marine bird and sea otter population abundance of Prince William Sound: trends following the Exxon Valdez *oil spill, 1989-93, Final Report Restoration Project 93045*, Agler, B.A. et al.

The effects of the Exxon Valdez *oil spill on shallow subtidal communities in Prince William Sound, Final Report Restoration Project 93047*, Jewett, S.C. et al.

Information needs for habitat protection: marbled murrelet habitat identification, Final Report Restoration Project 93051B, Kuletz, K.J. et al.

Marine bird and sea otter abundance of Prince William Sound, Final Report Restoration Project 94159, Agler, B.A. et al.

Recovery monitoring of pigeon guillemot populations in Prince William Sound, Final Report Restoration Project 94173, Hayes, D.L.

The Alutiiq Dancers from Kodiak entertained participants at a Saturday night reception during the Community Conference on Subsistence in the Oil Spill.
Photo by Karen Shemet.

Conference Participants Discuss Subsistence Issues

Nearly 80 elders, youth, and other subsistence users from villages throughout the oil spill region participated in a Community Conference on Subsistence and the Oil Spill in Anchorage September 22–23 sponsored by the Trustee Council.

Improving communication between researchers and communities, and among communities in the spill region, was a major theme. Conference participants stressed the importance of involving young people in the restoration process and urged appointment of a Native trustee or advisor to the *Exxon Valdez* Oil Spill Trustee Council.

Working groups at the conference developed ideas for using local knowledge to help resources recover and for reinvigorating subsistence. Ideas included arranging for elders to educate western scientists about their local area, establishing internships to train local people in western research methods, and maintaining local journals of observations about the ecosystem.

Another major theme that emerged from the conference was the importance of self–reliance and the need to pursue some aspects of subsistence restoration, particularly spiritual healing, independent of Trustee Council support. Toward this end, conference participants recruited a steering committee to follow through on recommendations generated by the overall group. Pete Kompkoff, Monica Reidel, Walter Meganack, Jr., Lillian Elvsaas, Hank Eaton, Robert Ketelnikoff, Priscilla Skonberg, and Virginia Aleck will continue conference discussions. Conference participants also appointed a committee to plan a healing conference.

Conference attendees included residents from Akhiok, Chenega Bay, Chignik Bay, Chignik Lagoon, Chignik Lake, Cordova, Ivanof Bay, Karluk, Kodiak, Larsen Bay, Nanwalek, Old Harbor, Ouzinkie, Perryville, Port Lions, Port Graham, Seward, Seldovia, and Valdez. Tatitlek participants were unable to attend due to weather.

A conference summary will be mailed to all participants and available this winter at the Oil Spill Public Information Center. A video of the conference will also be provided to each community in the spill region. Contact Bill Simeon, Division of Subsistence, Alaska Department of Fish and Game at 907/267–2309 for more information.

Nearshore

Continued from page 1

For sea otters, the first question is: what is the present population in the areas hardest hit by the spill, and how does that compare to pre-spill estimates?

The primary questions the project is addressing are: • Is the recovery of nearshore resources injured by the spill limited by slow population growth? • Are effects of oiling on intertidal or underwater habitats or underwater prey, such as sea urchins or forage fish, having a limiting effect on the recovery of species which use them for food?, and • Are changes in populations of prey species affecting the recovery of their predators?

Following is a brief summary of 1995 Nearshore Vertebrate Predator field work and findings that attempt to answer some of these questions.

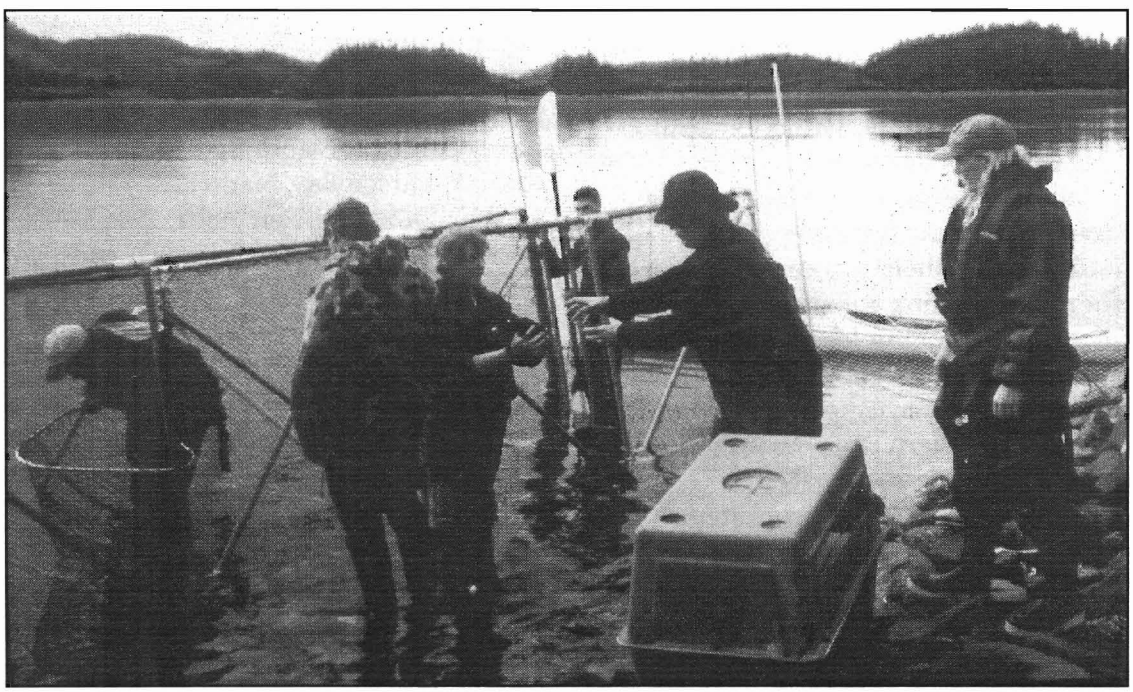
Sea Otters

For sea otters, the first question is: what is the present population in the areas hardest hit by the spill, and how does that compare to pre-spill estimates? Earlier studies indicated that sea otters were increasing at a natural rate from the low numbers resulting from 3,500 to 5,500 otter deaths following the 1989 oil spill. The 1995 aerial survey, however, provides some contrary data, and may indicate that numbers are not increasing or may even have decreased since the last survey in 1992.

"We want to be very cautious about interpreting these results," said Jim Bodkin. "There was variability in the 1992 survey that might lead to errors. That's why we're looking at so many different ways to answer questions about how sea otters and other injured resources are doing."

As part of this project, biologists in April walked approximately 40 miles of shorelines in southwestern Prince William Sound to count and assess the sex, age and condition of winter-killed sea otters. Biologists from the Alaska Science Center of the National Biological Service have conducted similar surveys in the same area every year since the spill. This year they identified twelve otter carcasses, compared to more than 20 last year.

Prior to the oil spill researchers would expect to find that 85 percent of the carcasses were either very young or very old animals, Bodkin said. In surveys from 1990 through 1992, results showed a much greater percentage of prime age adults than usual died over the winter. In 1994 surveyors found that the age distribution appeared to be returning to normal. Bodkin said that the proportion of prime age animals was again higher this year, perhaps indicating that young, usually healthy animals were still under some stress last winter that caused them to die early. Bodkin pointed out that unfortunately the sample was too small to identify a definite trend.



The harlequin ducks were captured during molting, when they are unable to fly. Several team members in kayaks herded groups of harlequins into a chute-and-trap system in shallow water. This was the first time this method has been used in Alaska. "Working with harlequins is a real challenge," said Dan Esler of the National Biological Service. "If you try to herd them onto shore they'll just dive under you and go somewhere else. Using kayaks allowed us to work in very shallow water where we couldn't have taken a skiff."
Photo by Paul Snyder.

A team of biologists captured six adult otters near Cordova for immune function analysis. In 1996 the tests will be conducted again on blood samples from animals in the oiled areas. Analysis will reveal anything the animals are being exposed to that might be affecting their ability to fight off disease.

Surveyors also counted sea otter pups in oiled and unoiled areas to estimate reproductive success. The ratio of pups to adults was not significantly different between the two areas, indicating that sea otters in the oiled area seem to be reproducing at about the same rate as in the unoiled areas.

Harlequin Ducks

Scientists captured more than 400 harlequin ducks during August and September to take blood samples, measure body size, weight, and determine muscle to fat ratio. Eighty-nine adult females were marked with radio transmitters in order to track their movements and survival. So far biologists report that most birds have stayed close to their molting sites.

Body condition of the birds was assessed by using a machine to measure total body electrical conductivity. A duck is gently restrained with a Velcro strap and placed on its back inside the cylindrical TOBEC machine, which is about 2 feet by 1 foot in size. Without harming the ducks, the machine measures the water content of the harlequin, which provides information on the proportions of body fat and muscle.

Blood samples were also taken from all adult females. Laboratory analyses will provide information about a broad array of indicators of the health of the ducks.

Intertidal/Subtidal Organisms

A third crew of scientists surveyed subtidal and intertidal areas for invertebrate and fish species which are food sources for all four of the predators under study.

"Our particular emphasis this year was on sea urchins because they are a primary food item for sea otters," said Tom Dean of Coastal Resources Associates, a contractor on the project. The group surveyed both subtidal and intertidal areas at Montague Island, Herring Bay and the Bay of Isles. Dean said the team also looked for nearshore fishes important in the diets of pigeon guillemots. They used side-scan sonar equipment to map underwater habitat for several important prey species.

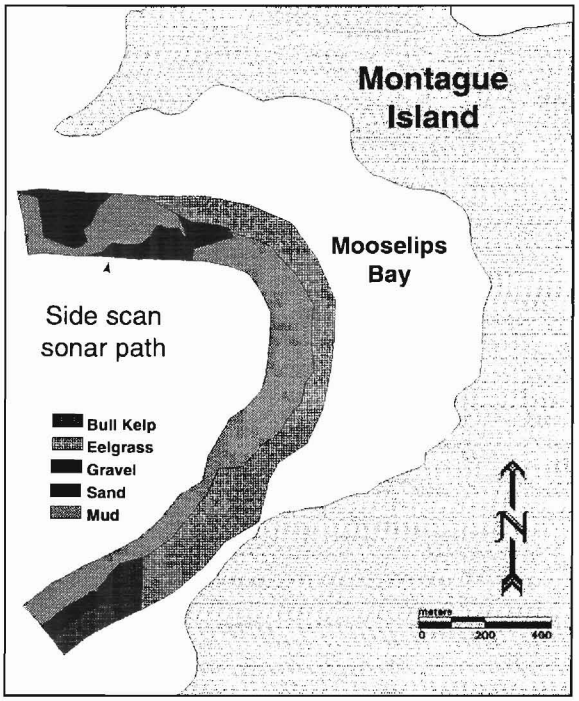
"We saw more sea urchins this year than we ever have before, and in fairly interesting areas," Dean said. The group found one large aggregation of small urchins in an eelgrass bed, unusual habitat for urchins, which are more commonly associated with kelp. Identifying preferred sea urchin habitat is a key objective of his study, Dean said.

"Once we found sea urchins in a particular underwater habitat, we were able to go to comparable areas and in almost every case we found large numbers of urchins." Dean pointed out that the urchins they found were relatively small — less than an inch in diameter — and the areas where they were located were "few and far between."

"Historically there haven't been many sea urchins in the sound," Dean said. "The increasing sea otter population may already have taken a toll on urchins prior to the spill." Dean speculated that otter deaths due to the oil spill have reduced the population enough in western Prince William Sound to encourage a resurgence in sea urchins.

Future Analysis

Bartels said all data are preliminary at this time and no conclusions can be drawn until analysis is complete. Reports from the 1995 field season should be ready next spring. Data collection on river otters is expected to get underway next summer, Bartels said. For more information, contact Leslie Holland-Bartels at 907/786-3312.



This map of part of a bay on Montague Island was made by side-scan sonar. The dark path shown represents a swath about 1.2 miles long and 650 feet wide and about 30 feet deep. Mapping with sonar makes it possible for scientists to know what features are on the ocean floor much less expensively than if the same information was obtained in a scuba dive survey. Map provided by Coastal Resources Associates.

"Once we found sea urchins in a particular underwater habitat, we were able to go to comparable areas and in almost every case we found large numbers of urchins."

Community Facilitator On Board

The Trustee Council has contracted with Chugach Regional Resources Commission to hire Martha Vlasoff as Community Involvement Coordinator in order to maintain and enhance communications with the communities affected by the oil spill.

Her responsibilities will include increasing the level of active involvement by community members in the restoration process, particularly in ongoing scientific studies; serving as a liaison between communities and the existing network of scientists, government agencies, Restoration Office personnel and the Trustee Council; and working with the Alaska Department of Fish and Game to integrate local traditional knowledge into the research and restoration process.

Martha Vlasoff will work with local facilitators who have been hired in Port Graham (Walter Meganack Jr.), Tatitlek (Gary Kompkoff) and Chenega (Mike Elashansky), along with additional facilitators to be hired in Cordova, Nanwalek, Seward and Valdez. Facilitators will also be hired to represent concerns from Kodiak and the Bristol Bay area. For more information contact Martha Vlasoff at 907/278-8012.

Radio Waves In Prince William Sound

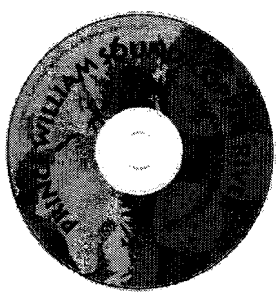
Listeners to stations KCHU and KLAM can now tune in several times weekly to short radio programs about research and restoration in Prince William Sound.

The three to four minute programs, called *Sound Waves*, are produced by Jody Seitz of the Prince William Sound Science Center. Her goal is to make research on restoration and the ecology of the sound more accessible to the public, Seitz said.

Topics covered so far include marine ecosystems, how weather patterns in the Gulf of Alaska affect the sound, plankton, and the life cycle of Pacific herring. Future programs will focus on harbor seals, octopus, and the effects of oil on pink salmon.

The program airs on KCHU, the Valdez public radio station which also broadcasts in Cordova, Chenega, Glenallen and Whittier, on Monday at 12:15 PM, Tuesday at 8:25 AM, Thursday at 5:45 PM, and Saturday at 9:30 PM. KLAM in Cordova broadcasts the program at 4:00 PM on Tuesday, Thursday and Saturday. For more information contact Jody Seitz at 907/424-5800.

PWS Now On Compact Disc



A new compact disc with geographic and natural resource information about Prince William Sound is now available free from the National Biological Service. The CD contains information compiled from state and federal resource agencies as well as the software needed to view it on an IBM compatible computer.

The Prince William Sound/Copper River Integrated Ecosystem disc includes information about anchorages, camping beaches, elevation, land ownership/ status, shoreline oiling from the *Exxon Valdez* oil spill, the Trans-Alaska Pipeline System, roads, streams, section and township boundaries, and vegetation. The information is from 35 geographic information system databases. A user guide, documentation for each layer, and software for DOS PC's is included to allow examination of the contents.

For more information or to request a copy of the disk, contact Karen Oakley at 907/786-3579 or via internet at karen_oakley@nbs.gov.

FY 96 Work Plan Approved in August

Decision expected in December on additional funding

Highlights of the Trustee Council's 1996 restoration program include three multi-project ecosystem studies based in Prince William Sound. This emphasis on ecosystem investigations has been key to the Trustee's approach to restoration for the last two years.

It reflects the Trustee Council's understanding that restoration issues are complex and require a long-term approach to the physical and biological interactions that may be constraining recovery of the injured resources and services. Results of these efforts could have important implications for restoration, for how fish and wildlife resources are managed, and for the communities and individuals who depend upon the injured resources.

The three ecosystem studies include:

- The *Sound Ecosystem Assessment*, a program to investigate ecosystem processes that may be constraining recovery of herring and pink salmon.
- The *Seabird/Forage Fish* –or APEX– project, which examines the hypotheses that a change in the species or abundance of small fish which are the main food source for many larger species has prevented recovery of seabirds and marine mammals. This project was given interim funding in August. Last summer's results will be reviewed during November, and funding for next year is on the Trustee Council agenda for December.
- The *Nearshore Vertebrate Predator* project, which focuses on ecosystem relationships that may be constraining recovery of sea otters, river otters, harlequin ducks, and pigeon guillemots (see page 1 for a related story). The package is designed to determine whether or not populations are recovering, isolate processes constraining recovery, and identify potential activities to assist or accelerate recovery.

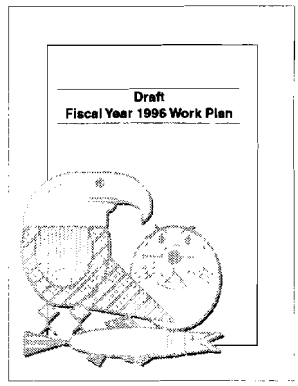
The Trustee Council annually approves restoration projects involving research, monitoring, and general restoration. In August, the Trustees approved two-thirds of an expected $18 million program for fiscal year 1996, which runs from October 1, 1995 – September 30, 1996.

The remaining funding will come before the Council on December 11, following additional technical review. Other projects approved in August address the recovery of salmon, herring, marine mammals, seabirds, archaeological resources and subsistence.

In addition to these projects, the Trustee Council approved $560,600 for Kenai River habitat improvements and recreation enhancements. This will complement several million dollars in other funds from various state and federal criminal sources.

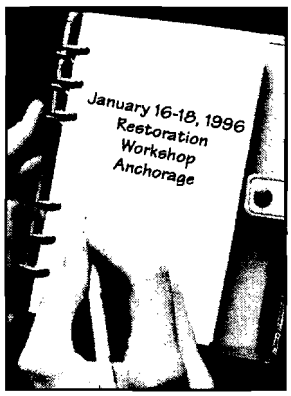
In other actions, the Trustee Council set aside an additional $12 million towards the Restoration Reserve. This is the third of nine projected payments into the Reserve that is expected to total $108 million (plus interest) and fund research and restoration activities after 2002.

Finally, the Trustee Council approved a budget of $3.4 million for public information, science management, and administration. This funding provides the management and administration necessary to efficiently implement the restoration program, and includes preparation of annual work plans, independent scientific review, public participation, and communicating the progress of restoration efforts to the public. This portion of the annual budget has deceased 29.2% from FY 94 funding.



Audit Underway

The Trustee Council has selected the firm of Elgee, Rehfeld and Funk of Juneau to conduct an external audit of the financial activities of the Council. The accounting firm will provide the Trustee Council with an independent assessment of all the funds held in trust and an analysis of expenditures against the trust to ensure that funds are properly reconciled. The audit of 1995 activities will be complete by March 1. For more information, contact Traci Cramer in the Juneau office at 907/586-7238.



Put these workshop dates on your calendar!

The 1996 Restortion Workshop is slated for January 16 – 18 at the Captain Cook Hotel in Anchorage. Scientists and members of the public attending this annual public workshop will review results from 1995 restoration work and help shape the future restoration program.

Scientists involved in restoration of the resources and services injured by the *Exxon Valdez* oil spill are expected to make presentations at the workshop. Abstracts of the results from all projects undertaken in 1995 will be compiled and available at the meetings. A final agenda is scheduled to be complete by early December. For more information about the Restoration Workshop call L.J. Evans or Stan Senner at 907/278-8012

Restoration information on the Internet

Staff at the Oil Spill Public Information Center set up an electronic home page on the World Wide Web last summer. Internet users can access summaries of the status of recovery, restoration activities, background information on the *Exxon Valdez* oil spill, and can request copies of material from the library. Users with graphic capability can download twenty photographs related to the spill and restortion activities.

The web page can be reached at:

http://www.alaska.net/~ospic.

The email address for the OSPIC is:

ospic@muskox.alaska.edu.

OSPIC staff can be reached via regular telephone at 907/278-8008, toll free within Alaska at 1-800-478-7745, outside Alaska at 1-800-283-7745.

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