Sandra 11.10.04

PUBLIC COMMENT

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

PUBLIC COMMENT ON THE RESTORATION RESERVE FUND FINAL REPORT

February 22, 1999

Over the past year, the Trustee Council has asked for public comment on the future use of the Restoration Reserve. In March 1998, the *Exxon Valdez* Oil Spill Trustee Council issued a special edition of its newsletter. The special edition was devoted to the Restoration Reserve ("Reserve") and included a questionnaire. At many of its meetings throughout the past year, the Trustee Council has received public testimony on the Reserve. The most recent public hearing on this issue was held on January 21-22, 1999. The deadline for receipt of comments on the Reserve was February 12, 1999. This is the final report on the public comments on the Reserve.

In March and April 1998, the Restoration Office held public meetings in 22 communities, including most of the communities in the spill area as well as Juneau, Fairbanks and Anchorage. Meetings in Chignik Lake, Perryville and Old Harbor were canceled because bad weather prevented travel to these locations. Two hundred forty-nine (249) people attended the meetings.

The Restoration Office has received comments from 2,432 people. Opinions were relayed through e-mail messages, letters, form letters, completed questionnaires, petitions, telephone messages, and testimony delivered at public meetings, including Trustee Council meetings.

Table 1 shows the origins of the people who responded. Origin was determined by return address or meeting location. Nearly three-quarters of the people who submitted comments on the Reserve gave addresses within Alaska.

Table 1. Origin of Response

Location	Responses (#)	Percentage
Alaska - Spill Area	1076	44%
Alaska - Outside Spill Area	690	28%
Outside Alaska	569	23%
Location Unknown	97	4%
Total:	2,432	100%

The Trustee Council asked for advice on four issues related to the Reserve: use, governance, public advice and term. Everyone who submitted comments expressed ideas about use of the fund. Two-thirds of those who submitted comments offered thoughts about the term of the Reserve. Very few people addressed the issues of governance or public advice.

Most of the comments received on the Reserve resulted from outreach efforts organized by advocacy groups or other interests. The outreach efforts produced two petitions and hundreds of identical or similar postcards, e-mail messages and form letters. The Restoration Office has received about 200 additional letters, e-mail messages, completed questionnaires and public testimony. Copies of all comments received have been supplied to the Trustee Council and are available at the Restoration Office.

People who submitted comments on the Reserve expressed the following ideas:

- More than half the people who submitted comments advocated use of all, or at least 75%, of the Reserve for habitat protection;
- One-fifth of the people who submitted comments urged the Trustee Council to support community-based projects through a $20 million endowment;
- Nearly one-fifth of the people who submitted comments encouraged the Trustee Council to use the Reserve for research; and
- About 100 people submitted other ideas for use of the Reserve, such as continuing the existing program or funding spill prevention programs.

For each of these topics – habitat protection, community fund, research and other ideas – this report will summarize the preferences expressed, describe the results of outreach efforts, and present new issues and ideas raised in public comments.

HABITAT PROTECTION

More than half the people who submitted comments advocated use of all, or at least 75%, of the Reserve for habitat protection. Almost all responses from outside Alaska expressed this view, as did a third of the responses from the spill area and half the responses from elsewhere in Alaska.

Half of the messages that supported use of the Reserve primarily for habitat protection also advised the Trustee Council to invest the funds flexibly so the Reserve's principal could be tapped, if necessary, to purchase land.

Six major outreach efforts generated most of the support for use of the Reserve primarily for habitat protection. These six outreach efforts accounted for half of all comments received.

Postcards with the following message were received from 241 people, most of whom gave addresses within Alaska, but outside the spill area:

I support the Exxon Valdez Trustee Council's habitat protection program. Since the 1989 Exxon Valdez Oil Spill, activists within this outstanding conservation program have listened to local citizens' concerns and used settlement monies wisely to protect lands all across Alaska's spill zone. Lands in Kachemak Bay State Park, Kenai Fjords National Park and Chugach National Forest are just a few of the places permanently protected from logging and other damaging land uses.

I support allocating 75 percent of the "Restoration Reserve" to protect fish and wildlife habitat through acquisition of both small and large parcels of land.

Postcards with a similar message were received from 396 people, most of whom had addresses within the spill area. The message on this postcard was:

As a resident of the Exxon Valdez Oil Spill zone, I support the EVOS Trustee Council's habitat protection program. Since the 1989 spill, the Trustee Council has wisely used settlement funds to permanently protect fragile habitat within the spill zone. Areas the Trustees have protected from clearcutting and other damaging activities include Kachemak Bay State Park, Kenai Fjords National Park, Afognak Island, Shuyak Island, and many sites in Prince William Sound.

I urge the Trustee Council to continue these efforts by allocating 75% of the restoration reserve to protect habitat. The habitat money should be invested flexibly, so the Council may buy title or conservation easements on both small and large parcels of land.

Protecting habitat is the single best way to ensure the long-term health of the fish and wildlife resources which spill area communities depend upon for our economy, subsistence needs, recreation and cultural heritage.

In response to an outreach effort by the Sierra Club, 259 people submitted form letters, e-mail messages or individual letters with the following message:

I strongly support continuing the Trustee Council's habitat protection efforts. In planning uses of the Restoration Reserve, I urge you to:

** Use at least 75% of the reserve for habitat protection, for both large parcel and small parcel programs.*

** Expand the definition of the spill impact zone to include the Copper River Delta and Bering River uplands. This area now faces timber and coal development that jeopardizes the Delta, an internationally significant refuge for migratory birds and a critical part of the ecosystem affected by the spill.*

** Reserve funds for habitat should not be treated as a permanent endowment. Instead, the money should be managed for maximum flexibility, so the Trustees can make an especially large habitat acquisition if the opportunity arises.*

Letters and e-mail messages from 167 people stated:

> *1) We should use at least 75% of the Restoration Reserve for habitat protection, specifically large and small parcels. This is the only way to guarantee natural, long-term recovery of the spill area and its ecosystems.*
>
> *2) I also feel that the area of consideration should be extended to include the Copper River Delta for its critical habitat value that is unlike any other in the world, and that these monies be used for conservation easements on Chugach Alaska Corporation's land, currently slated for clearcutting.*

In response to an alert issued by the Alaska Center for the Environment, 113 people sent letters, e-mail message and postcards with the following comments:

> *1) Please see that at least 75% of the Restoration Reserve be used for habitat protection, specifically large and small parcels. This is the only way to guarantee natural, long-term recovery of the spill area and its ecosystems.*
>
> *2) Thanks to you, the Trustee Council, for your excellent work acquiring important habitat lands throughout the oil spill region, such as areas like Kachemak Bay State Park or Kenai Fjords National Park.*
>
> *3) Please continue your tradition of welcoming and responding to public comment through meetings, newsletters, and other effective means of involving the public. Decisions on uses of the Restoration Reserve must be accountable to the public.*

A relatively small group of 33 people addressed all four issues raised by the Trustee Council through the following e-mail message:

> *1) USE: We should use at least 75% of the Restoration Reserve for habitat protection, specifically large and small parcels. This is the only way to guarantee natural, long-term recovery of the spill area and its ecosystems. I strongly recommend that the area of consideration be extended to include the Copper River Delta and Bering River Area for its critical habitat value.*
>
> *2) GOVERNANCE: Continue with current arrangement.*
>
> *3) PUBLIC NOTICE: Public comment is vital to the decision making process. Continue with current arrangement.*
>
> *4) TERM: Habitat reserve funds should not have a fixed or permanent term. They should be managed with maximum flexibility, so that the principal in the reserve fund can be used to complete especially large habitat protection deals.*

The Conservation Fund proposed a Small Parcel Permanent Fund. Its letter read, in part:

> *The Conservation Fund proposes the creation of a Small Parcel Permanent Fund to maintain a program of habitat protection in the oil spill zone of the Tanker Exxon Valdez. The Conservation Fund proposes that $20 million from the Exxon Valdez Restoration Reserve be invested and managed as a long-term funding source for small parcel acquisitions...*
>
> *The Conservation Fund proposes to manage the Small Parcel Permanent Fund in partnership with Key Bank...Careful investment and management of $20 million from the Restoration Reserve could provide a perpetual source of funding for habitat protection in the spill zone...The Small Parcel Permanent Fund can be managed as a perpetual endowment or it can be set to expire over time.*

In addition to the preceding comments, about 100 people sent letters, e-mail messages and completed questionnaires urging the Trustee Council to allocate all or part of the Reserve to habitat protection. Some of the messages asked the Trustee Council to acquire specific parcels, notably the Karluk and Sturgeon Rivers and Termination Point.

COMMUNITY FUND

One-fifth of the people who submitted comments urged the Trustee Council to support community-based projects through a $20 million endowment. Nearly all the support for the $20 million community endowment came from petitions signed by residents of the spill area. The petition referred to this endowment as the "Community Fund." Most of the messages in support of a $20 million Community Fund did not advise the Trustee Council on use of the rest of the Reserve.

The concept of a Community Fund was developed by the Chugach Regional Resources Commission and described in a position paper adopted by the commission's Board of Directors at their meeting on April 27-28, 1998. The position paper states, in part:

> *In order to determine the state of the resources, they must be monitored on a continuous long term basis. This should be one of the key components of the use of the Restoration Reserve. In conjunction with research and monitoring, a long-term management plan must be developed as a guide for taking care of the resources injured by the oil spill. Tribes in the oil spill affected region must play a key role in these activities for these programs to be effective....Community based restoration projects and some level of technical training and assistance at the local community level through a specific set-aside for tribes would enhance this effort as well. The existence of a set-aside for tribes would alleviate the difficulty of tribes competing for funds with highly educated staffs from universities, state and federal management agencies, etc., as well as to encourage increased participation from the local Native communities. Such a set-aside could be modeled after the DCRA Criminal Settlement Fund, where the review process is simple, and the application process is unencumbered. We believe that this set-aside*

should be at least $20 million, placed in an interest bearing account and be disbursed over a set amount of time. Projects to ensure continued communications between tribes and scientists such as what is being provided by the Community Involvement / Traditional Ecological Knowledge Program currently funded by the Trustee Council should be continued. Projects also eligible for funding under this $20 million set-aside should be cultural preservation projects such as spirit camps and subsistence conferences, beach clean-up, as well as projects addressing the human damage from the oil spill.... In reviewing the list of properties acquired under both the large and small parcel land acquisition programs, we do not believe that continuing this program would be a wise use of the funds.

A petition signed by 437 people supports the establishment of a $20 million Community Fund. Nearly all the people who signed this petition were from the spill area. The petition states:

We, the undersigned members of the Native communities affected by the Exxon Valdez Oil Spill in 1989, desiring meaningful involvement in the restoration of the natural resources upon which we depend, feel that a $20 Million Community Fund should be established as part of the plans for the Restoration Reserve. This Community Fund, set up as an endowment, would provide into perpetuity the opportunity for oil spill affected communities to protect and preserve our natural resources, working directly with state and federal agencies, through a spill area wide tribal natural resource management program. This endowment would also provide the opportunity to protect our cultural and traditional diversity through the funding of culturally and tribally based scientific programs that are ineligible for funding under the current EVOS funding guidelines. Further, we the undersigned, understand that we are entitled to develop our capabilities and capacity to manage our resources and conduct culturally based projects based upon the damage that was done to our traditional use areas and traditional lifestyles. Therefore, we petition the Exxon Valdez Oil Spill Trustee Council to set aside a $20 Million Community Fund as an Endowment in the Restoration Reserve Plan.

In addition, 54 people signed form letters stating:

We urge you to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for community projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustee Council.

The Restoration Office also received resolutions from the Tatitlek IRA Council, the Ouzinkie Tribal Council, the Chignik Lake Village Council and the Ivanof Bay Village Council supporting the establishment of the Community Fund. The resolutions from Chignik Lake and Ivanof Bay state that the village council in each community:

[H]ereby requests the Exxon Valdez Oil Spill Trustee Council to set aside a $20 million Community Fund as an endowment in the Restoration Reserve plan. We believe that this

$20 million endowment needs to be established to provide into perpetuity the opportunity to establish long-term natural resource programs to protect and preserve our natural resources, to provide opportunities for community members to pursue meaningful careers and employment opportunities in natural resources and to protect our cultural and traditional diversity. Be it further resolved that this endowment be administered by a new nonprofit foundation made up of tribal, state and federal representation throughout the oil spill region.

RESEARCH

Nearly one-fifth of the people who submitted comments encouraged the Trustee Council to use the Reserve for research. Some people recommended that the Reserve be dedicated solely to research, but most argued that research should be one of several restoration activities funded by the Reserve.

A large proportion of those who supported use of the Reserve for research encouraged the Trustee Council to establish research chairs and research centers at the University of Alaska. Nearly all the support for endowed research chairs came from Alaska outside of the spill area.

Grant Baker, Assistant Professor, University of Alaska Anchorage, organized an outreach effort to support use of the Reserve to establish endowed research chairs. Public comment supporting endowed chairs did not specify the amount of money that would be needed for that purpose. However, in a letter to the Trustee Council, Mr. Baker stated, "It is my recommendation that the endowment be in the $75 million to $100 million range..."

The following e-mail message was sent to the Trustee Council by 78 people from outside the spill area:

I support EVOS funding for establishing research endowments and research chairs at the University of Alaska.

In addition, 127 members of the Union of Students at the University of Alaska Anchorage Assembly signed a resolution that said:

...WHEREAS, one idea that promises many benefits for Alaskans is to use these funds to establish endowed research centers and chairs within the University of Alaska, especially since these funds represent the last chance to create a university endowment with the oil spill settlement money; and

WHEREAS, such endowments would allow research for restoring and protecting spill affected areas, and for developing and marketing education courses and patent for oil spill cleanup technology; and

WHEREAS, use of the EVOS Reserve Fund would go a long way in creating a self-perpetuating environment of teaching and learning.

NOW, THEREFORE, the Union of Students at the University of Alaska Anchorage Assembly resolves:

Section 1: That the Assembly urges the EVOS Trustee Council to work with the University of Alaska to create a general endowment to the University from the Exxon Valdez Oil Spill Restoration Fund....

The Anchorage Municipal Assembly and the Greater Fairbanks Chamber of Commerce submitted resolutions urging the Trustee Council to work with the University of Alaska to create a general endowment to the University.

About 100 people urged the Trustee Council to fund research programs, but did not focus their comments on the establishment of research endowments within the University of Alaska. Half the people who expressed this view argued for an inflation-proofed endowment that would fund a long-term ecosystem research program. Representative of this viewpoint is a letter from Ted Cooney, which states, in part:

I firmly believe that the fund should be inflation-proofed, and that future activities supported by the interest, not the principal of the corpus. Properly achieved, this would provide an endowed research program for the northern portion of the coastal Gulf of Alaska as long as the corpus remains intact. This would allow the kind of long-term studies needed to understand questions of interannual, decadal and multi-decadal variability in ocean climate and the resources that it supports. To do this, the Trustees must adopt an attitude of resolve and conviction for the long haul. Understanding how ecosystems function will require dedication to difficult and routine work, attended to year in and year out.

Some comments representative of the support for emphasis on marine research are provided below. The Alaska Marine Conservation Council, a non-profit, community-based organization of fishermen, subsistence harvesters, biologists and others commented as follows:

AMCC offers its support for earnings from the reserve to be spent on marine research. We believe a well designed research plan will increase over understanding of how the marine system functions and that greater understanding will serve ecosystem-based management of our marine resources ... [W]e recommend that the earnings available for research not fall below $5 million per year. We believe that amount is needed to maintain a high level research plan.

The Alaska Groundfish Databank, a Kodiak-based organization involved with commercial fishing, urged creation of a perpetual endowment with a priority given to coastal oceanography research. The Cook Inlet Regional Citizens' Advisory Council also called for a permanent endowment:

To ensure that monies would be available for data collection over the long-term, making it possible to assess temporal changes over decades. This slower spending of money would require keen evaluation of studies to select the most applicable and necessary studies.

OTHER IDEAS

About 100 people submitted other ideas for use of the Reserve. Many people suggested a combination of restoration activities, such as habitat protection and research or public education and stewardship. These comments did not specify a dominant use or a specific allocation to certain uses. An example of these types of comments is a letter from John Schoen, Alaska State Office, National Audubon Society, which stated, in part:

Design funds under two parallel tracks: acquisition of key fish and wildlife habitats and ecological research and monitoring. These two tracks are complementary.

Other ideas included the following:

- Do not place limits on reserve funds at this time because restoration is an ongoing process that may have changing needs in the future.
- Support environmental education as part of the school curriculum.
- Establish a scholarship fund for undergraduate students of chemistry, biology and engineering specializing in environmental sciences.
- Purchase limited entry commercial fishing permits in Prince William Sound beginning with sable fish and black cod permits. This will help the orcas.
- Buy the hatcheries and shut them down.
- Encourage proper disposal of pollutants and permit prompt discovery, notification, remediation and discouragement of "minor spills".

PUBLIC ADVISORY GROUP

The Trustee Council's Public Advisory Group (PAG) is a 17-member group representing a wide variety of interests and charged with providing advice to the Council. The PAG considered the Restoration Reserve at several meetings. At its June 1-2, 1998 meeting, the PAG developed a draft "Summary of Areas of Agreement re: Restoration Reserve." The PAG members identified a variety of uses for the reserve funds emphasizing the twin goals of stewardship and restoration, including:

- Science/research – Develop an integrated research and monitoring program that provides ecological information to help solve current and long-term resource management issues. This would include both basic and applied research.

- Education/information – Improve public understanding of the research process, the findings and significance.

- Community projects – Do a better job of making local residents and communities partners in the mission and activities of the restoration process by giving residents a more active role in research, monitoring, education, interpretation and stewardship.

- Land acquisition – Use a portion of the reserve funds for future acquisition of land and interests in land (conservation easements).

PAG views on funding levels for the various elements were mixed. The "large majority of PAG members recommend devoting less than a third of the reserve" for additional land acquisitions. The PAG summary noted that a criterion for reaching this view was the effort to identify a level of spending for land purchases "that does not jeopardize the three objectives listed above (science, information, community projects)."

Eric Myers
From: Jeff [jeff_lawrence@oilspill.state.ak.us]
Sent: Saturday, February 20, 1999 4:47 PM
To: Eric Myers
Subject: FW: Restore habitat!

-----Original Message-----

From: **Sandie Mangrum [mailto:sparkle@ridgecrest.ca.us]**
Sent: Saturday, February 20, 1999 5:52 AM
To: restoration@oilspill.state.ak.us
Subject: Restore habitat!

To Whom It May Concern:
As a biology student and former resident of Alaska, I realize the importance of research due to the oil spill in Valdez. I feel the habitat, however, should be protected above all else. If we do not protect the wildlife and habitat, further research may not become a reality. I ask that you please set aside 50-75% of the reserve money for habitat restoration in both large and small parcel programs. Also, as we begin to realize the widespread impact of oil spills on the environment, I feel that it is important to include surrounding areas which may have been affected by the spill in 1989. Please broaden the area covered by such monies to include the Copper River Delta and Bering River Uplands. It is extremely important that we act now while the area is still somewhat stable. These areas are of critical development to the wildlife affected by the spill. Preventing further harm to habitat is the single most important and lasting way of promoting recovery in the areas affected by the spill. Although I spent only a short while in Alaska, I still hold it in my mind as being the most beautiful place I have ever seen. We must keep 'the last frontier' in it's unique state of being free from such pollutants and destruction. Future generations may not be able to see the bald eagles soar if we do not lend the money necessary for protection today. Reserve funds should be managed with maximum flexibilty for the large areas which may arise with needs for such monies in the future. This affects not just Alaska and surrounding areas, but the ecosystem of the entire world. Please help to protect these fragile rainforests while there is still time left. Thank you.

Amber Mangrum
604 Burbank St.
Ridgecrest, CA 93555
sparkle@ridgecrest.ca.us

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Institute of Marine Science

UNIVERSITY OF ALASKA FAIRBANKS

P.O. Box 757220 • Fairbanks, Alaska 99775-7220

8 February, 1999

Exxon Valdez Oil Spill Trustee Council
Molly McCammon, Executive Director
645 G Street, Room 401
Anchorage, Alaska 99501-3451

Dear Council members and Executive Director McCammon,

My name is Ted Cooney. I presently serve as the Lead Scientist for your Sound Ecosystem Assessment (SEA) program in Prince William Sound. Professionally, I hold a tenured faculty position in the University of Alaska Fairbanks, Institute of Marine Science. My formal training is biological oceanography and fisheries ecology. Later this year I am retiring after 29 years of studying Alaska's coastal and shelf/ocean plankton and juvenile fish communities. My appeal today for extending Trustee Council sponsored research stems from this long association with the Alaska marine ecosystem.

Of the many significant decisions made about the use of settlement funds by the Council, establishing a reserve for the possible continuation of restoration research into the future may ultimately prove to have been the most farsighted. At a time when human-influenced change of global climate is accepted by most, and while many local and ocean-wide fish and shellfish assemblages are being harvested at or beyond sustainable levels, the managers of these same resources are under increasing pressure to both utilize and at the same time protect commercial, sport, and subsistence stocks for future generations. Most practitioners of applied marine science agree that until the functional attributes of marine ecosystems supporting apex production are more fully understood, resource managers will continue to make important decisions in almost total ignorance of factors influencing production and population sustainablity. Federal, state and private funds are being channeled forward to accomplish this task. However, many programs fail, or greatly under-produce principally because the science is constrained in time; few studies are supported for more than 3-5 years.

Why is the length of a program so important to its success? The answer resides primarily in the inherent characteristics of ocean climate and its response to atmospheric cycling as the primary agent affecting ocean biology. Natural communities of marine organisms in highly seasonal environments like the northern Gulf of Alaska are subject to strong year-to-year, decadal, and multi-decadal variability which, as we are now learning, reflects different levels of primary and secondary production, promotes profound shifts in dominant species and causes substantial

changes in food-webs. When the time scales of phenomena being studied are consistently longer than the periods of observation (very often the case), the results of the work may only provide a fragmentary understanding, or worse, inaccurate information. One result of this failing is that the process of science inevitably becomes open to criticism. The assertion by some that we can never know enough about the ocean to assist with the wise stewardship of our critical marine resources becomes a self-fulfilling prophecy when grounded in program structures of only a few years duration.

How to break this flawed pattern? Obviously, special circumstances are required to leverage funding commitments over the very long term (VLT). Fishery production histories reflecting dynamic equilibria in the ocean are apparently established for varying lengths of time and for different climate reasons. In our part of the world, an 18.6 year lunar nodal tidal cycle in temperature, 3-5 year El Nino-Southern Oscillation events, a newly described 2-year Arctic Oscillation, and other recurring meteorological phenomena beat together to produce the kinds of biophysical regimes and their production changes observed over the years. In this regard, "Mother Nature" must be considered a moving target. To describe her vagaries for practical purposes, she must be carefully monitored and studied for sufficient periods - tens and tens of years.

Your own Chief Scientist, Dr. Robert Spies, has advocated such an approach in a prospectus titled: Legacy of the Exxon Valdez Oil Spill: Science and the Restoration Reserve. His vision forms a powerful paradigm for taking advantage of the "special circumstance" afforded by your extraordinary foresight to hold back some of the settlement funds for future uses. I strongly endorse the draft plan prepared by Dr. Spies. In my view, his ideas and suggestions should be used as the starting point for the creation of a VLT endeavor. Properly managed, such a program could interface effectively with other studies in the region (NOAA, NSF, Alaska, industry, other). However, a VLT program's paramount value - indeed its most valuable asset - would reside in its commitment to longevity.

In his proposal, Dr. Spies lists several important guiding principles for long-term research and monitoring. Among these, restricting studies geographically to the Gulf of Alaska is important in my view, but does not go far enough to prevent a serious dilution of effort. I would advocate a further restriction to just the breadth of the spill impacted region. It is here in the northern Gulf that the Council enjoys the strongest grass-root support for continuing studies. Indeed, many of the results of your own sponsored research are painting a picture of the critical importance of this nearshore/coastal environment as a nursery for birds, fishes and marine mammals.

Pushing basic research toward management applications should be a centerpiece of any future program - indeed its justification. One way to make this happen is by seeking mechanisms of cause and effect, rather than relying on statistical models of correspondence. The mechanistic approach will be difficult, but only after biological and physical linkages are fully understood, can efficient monitoring programs be undertaken and biophysical models of processes created for management and experimental purposes. I also agree that program accountability and the creative dissemination of information to the public and the stakeholders of the resources must be a high priority. Infrastructure like the SeaLife Center and other coastal laboratories in Kodiak,

near Homer, and in Cordova provide a logical locus for some of these important activities. Continuing advances in multimedia information transfer now offer astonishing new ways to bring "science to life" for a broad diversity of the public. The use of these new technologies should be fully exploited.

Some will complain that a VLT program will quickly become a science-welfare initiative. It might, but that seems more like a program management issue. Others will advocate the conservative approach - habitat protection - as the only effective way to sustain the injured resources. In a sense they are correct, but because so many coastal populations and the largest ecosystems impacted by the spill were entirely marine, or derive their energy from the ocean, just setting aside adjacent land will have limited long-term benefits. Instead, I firmly believe the stakeholders in the region, the general public, and the science and management communities will be best served by adopting a long-term commitment for aggressively seeking answers to questions about how shifting ocean climate affects coastal marine resources. As a sage once noted, "the longest journey always begins with the first step". In this case, much of the heavy lifting has already been accomplished and a future direction proposed. Properly supported and carefully managed, there is no reason why such a program could not also become a model for other major fishery regions in the world ocean. Someone has to take the lead. You have a unique opportunity to make it happen. I urge you to do so.

Sincerely,

Ted Cooney, Professor of Marine Science
Institute of Marine Science
University of Alaska Fairbanks
Fairbanks, Alaska 99775

NORTH PACIFIC MARINE SCIENCE FOUNDATION

300 Elliott Avenue W., Ste 360
Seattle, WA 98119
Phone (206) 281-1667
Fax (206) 283-2387

4/12 ✓

February 12, 1999

Ms. Molly McCammon, Executive Director
Exxon Valdez Oil Spill Trustee Council
645 G Street, Suite 401
Anchorage, AK 99501 3451

Molly

Sent Via Fax (907) 276 7178

Dear Ms. ~~McCammon~~:

The North Pacific Marine Science Foundation appreciates the opportunity to comment on the Trustee Council's plan to place up to $12 million into a reserve account to finance a long-term restoration program that extends beyond the last payment from Exxon.

The North Pacific Marine Science Foundation was formed to fund marine research in the North Pacific. The research is conducted by the North Pacific Universities Marine Mammal Research Consortium which includes a multi-disciplinary team of scientists from four participating universities (University of Alaska, University of British Columbia, University of Washington and Oregon State University). Over the past several years it has become clear to the Foundation Board of Directors, that the need for scientific research in the North Pacific is great. We strongly support the use of these funds to further understanding of the marine environment through surveys and other monitoring of fish and marine mammals to provide basic information to determine population trends, productivity and health of these vital resources.

We further agree that a program of ecosystem-scale work throughout the spill area and, possibly, the adjacent northern Gulf of Alaska could be funded over a longer period of time. This program could be the "pulse" of the ecosystem, identifying changes in the environment and how such changes affect species and resources of ecological and commercial importance and complement work carried out in existing research programs for the benefit of those with an interest and stake in the use and conservation of the ecosystem.

We commend the Trustee Council for identifying research and monitoring as a main component of the Restoration Plan and urge you to move forward with establishment of the reserve account.

Sincerely,

John

John F. Roos
President

4413

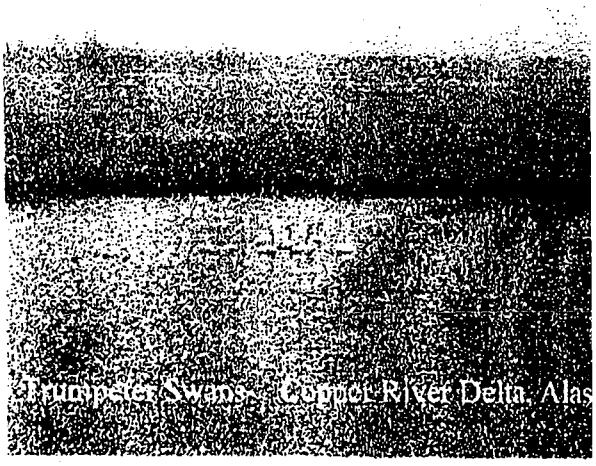
-TODAY IS OUR LAST DAY FOR WRITTEN TESTIMONY-

ON THE $140 MILLION DOLLAR RESTORATION RESERVE FUND

IT'S EASY... 1:READ IT 2: ADDRESS & SIGN IT 3: FAX IT TO: 907.276.7178

ASK TRUSTEES TO BE VISIONARIES:

The Exxon Valdez Oil Spill Trustee Council is taking final public written comment before deciding how to spend the "Restoration Reserve Fund. The Billion Dollar Restoration Fund was established for "immediate restoration" needed in the 1989, Exxon Valdez Oil Spill Zone.


Trumpeter Swans - Copper River Delta, Alas

TRUSTEE'S LAST CHANCE TO ACT:

Your immediate written support could mean the difference between having a road across the east Copper River Delta, or not. Future restoration science can be implemented with a $100,000,000 reopener in 2002. Please check one or all the boxes below, or, write your own* preference on the use of these moneys in your comment box.

( ) 1) Extend the "restoration boundary" *(either ignore it or move it ...east)* and include the entire Bering River region to protect entire eastern Copper River Delta. Protect Bering River Coal Fields and Chugach's 73,000 acre rainforest. Last chance to prove preservation has more value than restoration in spillzone.

( ) 2) The Restoration Reserve bank account is either illegal or unnecessary- if the money sits in a bank then it pulls money away from immediate restoration, and its unnecessary- there's no better Restoration Reserve, than a living intact coastal wild habitat. Spend 75% of the Restoration Reserve Fund on "habitat protection- not habitat acquisition" (no more fee title purchases.

(✓) 3) If the Restoration Reserve is used to further preservation, protection and restoration of wild salmon habitat- then help implement oil spill contingency clean up plans for coastal wild salmon habitats between California & Alaska.

your comments: perserve before restoration. Restoration comes after there is an accident. Please lets minnimize the chances of an accident.

print name: Max Cragun

signed: Max Cragun date Feb 12 1999

address: Cordova, AK ph

preservation is the key to conservation or restoration of any kind

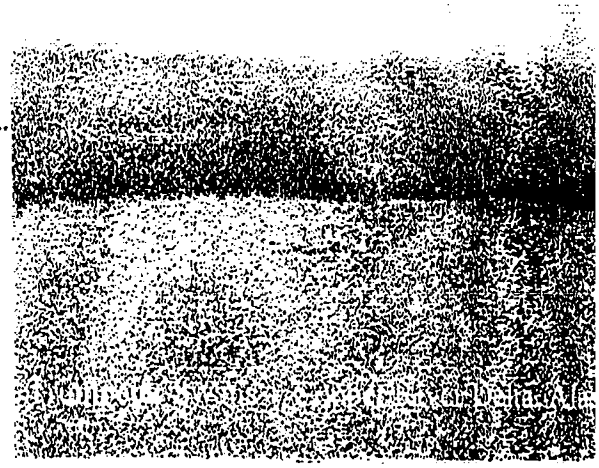
4416

[illegible] YOUR LAST DAY FOR WRITTEN [illegible]
[illegible] THE [illegible] MILLION DOLLAR RESTORATION RESERVE [illegible]

[illegible]

ASK TRUSTEES TO BE VISIONARIES:

The Exxon Valdez Oil Spill Trustee Council is taking final public written comment before deciding how to spend the "Restoration Reserve" Fund. The Billion Dollar Restoration Fund was established for "immediate restoration" needed in the 1989 Exxon Valdez Oil Spill Zone.



TRUSTEE'S LAST CHANCE TO ACT:

Your immediate written support could mean the difference between having a road across the east Copper River Delta, or not. Future restoration science can be implemented with a $100,000,000 reopener in 2002. Please check one or all the boxes below, or write your own preference on the use of these moneys in your comment box.

✓ 1. Extend the "restoration boundary" [illegible] and include the entire Bering River region to protect entire eastern Copper River Delta. Protect Bering River Coal Fields and Chugach [illegible] acre rainforest. Last chance to prove preservation has more value than restoration in spillzone.

✓ 2. The Restoration Reserve bank account is either illegal or unnecessary- if the money sits in a bank then it pulls money away from immediate restoration, and its unnecessary - there's no better Restoration Reserve, than a [illegible] intact coastal wild habitat. Spend 75% of the Restoration Reserve Fund on [illegible] habitat protection - not habitat acquisition" (no more fee title purchases).

✓ 3. If the Restoration Reserve is used to further preservation, protection and restoration of wild salmon habitat- then help implement oil spill contingency clean up plans for coastal wild salmon habitats between California & Alaska.

comments: please be visionary for the future, learn from the mistakes of the past, and don't repeat them. These mistakes can be seen on our end of the coastal temperate forest (Headwaters).

print name: JULIA BUTTERFLY HILL
signature: [signature] date: [illegible]
address: PO BOX 1065 Arcata, CA 95518

[illegible]

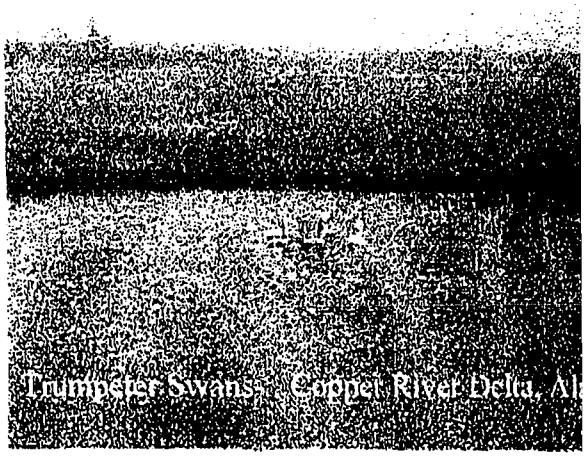
-TODAY IS OUR LAST DAY FOR WRITTEN TESTIMONY-

ON THE $140 MILLION DOLLAR RESTORATION RESERVE FUND

IT'S EASY... 1 READ IT 2. ADDRESS & SIGN IT 3. FAX IT TO: 907.276.7178

ASK TRUSTEES TO BE VISIONARIES:

The Exxon Valdez Oil Spill Trustee Council is taking final public written comment before deciding how to spend the "Restoration Reserve Fund. The Billion Dollar Restoration Fund was established for "immediate restoration" needed in the 1989, Exxon Valdez Oil Spill Zone.


Trumpeter Swans - Copper River Delta, Al

TRUSTEE'S LAST CHANCE TO ACT:

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☒ 1) Extend the "restoration boundary" *(either ignore it or move it ...east)* and include the entire Bering River region to protect entire eastern Copper River Delta. Protect Bering River Coal Fields and Chugach's 73,000 acre rainforest. Last chance to prove preservation has more value than restoration in spillzone.

☒ 2) The Restoration Reserve bank account is either illegal or unnecessary- if the money sits in a bank then it pulls money away from immediate restoration, and its unnecessary- there's no better Restoration Reserve, than a living intact coastal wild habitat. Spend 75% of the Restoration Reserve Fund on "habitat protection - not habitat acquisition" (no more fee title purchases).

☒ 3) If the Restoration Reserve is used to further preservation, protection and restoration of wild salmon habitat- then help implement oil spill contingency clean up plans for coastal wild salmon habitats between California & Alaska.

*your comments: PLEASE PROTECT OUR EAST COPPER RIVER DELTA!

print name: Lance Kompkoff

signed: Lance Kompkoff date: Feb. 12 1999

address: Cordova Ak.

*preservation is the key to conservation or restoration of [illegible]

4419 ✓

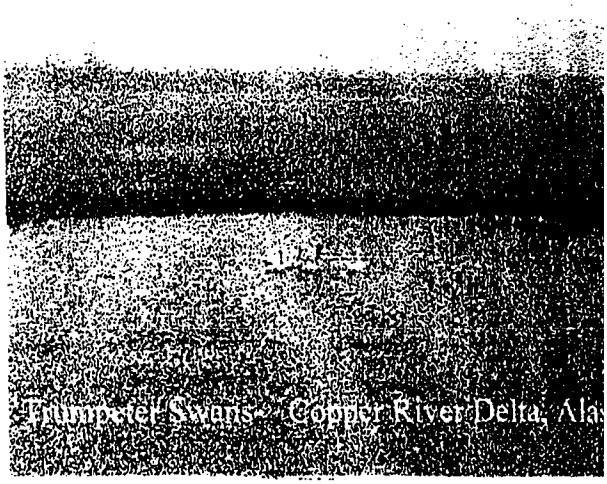
-TODAY IS OUR LAST DAY FOR WRITTEN TESTIMONY-

ON THE $1BILLION DOLLAR RESTORATION RESERVE FUND:

IT'S EASY... 1 READ IT 2 ADDRESS & SIGN IT 3 FAX IT TO: 907.276.7178

ASK TRUSTEES TO BE VISIONARIES:

The Exxon Valdez Oil Spill Trustee Council is taking final public written comment before deciding how to spend the "Restoration Reserve" Fund. The Billion Dollar Restoration Fund was established for "immediate restoration" needed in the 1989, Exxon Valdez Oil Spill Zone.



Trumpeter Swans- Copper River Delta, Ala

TRUSTEE'S LAST CHANCE TO ACT:

Your immediate written support could mean the difference between having a road across the east Copper River Delta, or not. Future restoration science can be implemented with a $100,000,000 reopener in 2002. Please check one or all the boxes below, or, write your own " preference on the use of these moneys in your comment box.

X 1) Extend the "restoration boundary" *(either ignore it or move it ...east* and include the entire Bering River region to protect entire eastern Copper River Delta. Protect Bering River Coal Fields and Chugach 's 73,000 acre rainforest. Last chance to prove preservation has more value than restoration in spillzone.

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X 3) If the Restoration Reserve is used to further preservation, protection and restoration of wild salmon habitat- then help implement oil spill contingency clean up plans for coastal wild salmon habitats between California & Alaska.

comments: "SACRED IS THE COPPER RIVER DELTA" AND BERING RIVER REGION

print name: DUNE LANKARD, EYAK PRESERVATION COUNCIL

signed: Dune Lankard date Feb. 12 1999

address: P.O. BOX 460 CORDOVA, ALASKA 99574 907 424 5990

preservation is the key to conservation or restoration of any kind

4418

• • •
Trio
148 Oaksprings Drive
San Anselmo CA 94960

415.454.2436
415.455.0748 / fax
hooves@earthlink.net

Fax

Date: 12 February 1999

To: Exxon Valdez Trustee Council

From: Carol Hoover

Pages, cover plus:

Message:

Dear Trustees:

I am of firm belief that Alaska must be a beacon for us, for the world, that we can save the natural resources in Alaska - and prove that conservation and restoration is the way to secure the future for our children.

As a citizen, and as a landowner in Cordova, I want the Trustee Council to allocate the Restoration Reserve as follows:

1) MOVE THE BOUNDARY TO INCLUDE MORE OF THE FISHERIES THAT HAVE BEEN EFFECTED BY THE SPILL. Specifically - move the eastern boundary to include the incredible Copper River Delta.

2) SPEND MONIES ON HABITAT PROTECTION - NOT HABITAT ACQUISITION. I am completely opposed to the practice of purchasing land from the ANCSA corporations. Conservation easement deals can be made with ANCSA corporations - not fee-title buys. I find that shameful.

3) IMPLEMENT OIL SPILL CONTINGENCY PLANS FOR SALMON HABITATS.

4) STATE YOUR OPINION - SHOW GOOD SCIENCE OPINION - AND FORCE OIL COMPANIES TO ONLY USE DOUBLE-HULLED VESSELS TO TRANSPORT OIL. To not vehemently oppose single-hulled oil transport vessels is cowardly.

Respectfully hoping,

Carol Hoover

4417

Alaska State Legislature

SENATOR
MIKE MILLER
Mailing Address:
119 N. Cushman, Suite 101
Fairbanks, Alaska 99701
Ph. (907) 488-0862
Fax: (907) 488-4271

Senate

While in Juneau
State Capitol
Juneau, Alaska
99801-1182
Ph: (907) 465-4976
Fax: (907) 465-3883

Senate District Q

February 10, 1999

Exxon Valdez Oil Spill Trustee Council
645 "G" Street
Anchorage, Alaska 99501

Via fax: 276-7178

Dear EVOS Trustees:

I am writing to request you add my name to the growing list of supporters for an endowment for the University of Alaska from the Exxon Valdez Oil Spill Restoration Reserve funds.

As you know from your surveys done in 1994 and 1998, there is continuing support for establishing an endowment. With over 39,000 miles of coastline, more than the rest of the United States combined, Alaska should take the lead in promoting the advancement of long-term scientific knowledge and technology related to our coastlines. With the charge of the Council to restore, rehabilitate and replace and enhance resources and services in the oil spill region, the accumulation of scientific knowledge to manage any future oil spills must be placed in high priority within the Councils program. An endowment to the University would ensure this.

With over 85% of the EVOS Restoration Reserve spent, I strongly urge you to consider an endowment to the University with the final dollars available. Please call me if you need further comments on the issue.

Cordially,

Mike Miller

Senator Mike Miller

418;

RECEIVED
JAN 25 1999
EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL

Friday
1/22/99

Dear Trustees,

I'm more than a little frustrated with trying to provide you testimony. Last night I tried numerous times, over the span of 1½ hrs to access your meeting via telephone and all circuits were busy. This morning I was toed & I was given an incorrect number. I called again, accessed the bridge and had a connection. I waited and listened for 30 min. and was disconnected. I did not say a word. I called the 1D and was told the meeting was ended and that there was no way I could provide a statement.

So for the record I'm sending my shortened statement in writing. I hope you will consider it. My statement comes from my relationships with PWSound in 3 areas: a homestead owner, a recreational user and as a past research asst. w/ marine biology research in PWS.

Since 1989 I've kayaked over 3,500 miles in PWS. I've traveled from N → S, from E → W, and know much of the Sound intimately. I've spent over 35 weeks in a sea kayak in PWS. As well I've been a research asst. w/ a group of marine biologists studying killer/humpback whales in PWS since 1994. Some of the funds for these studies have in part come from EVOS funds. I have respected the quality of this research

and commitment to the research and to the Sound. I feel scientific research is important and should continue. Thirdly, I have built a cabin on homestead land in PWS during the past 8 summers and have come to know parts of PWS from this ongoing project.

All things considered, my strong belief is that your #1 priority for spending remaining $140 million in EVOS funds should be to preserve critical habitat, particularly in the spill area. I feel scientific research should be secondary, and not consume more than 20-30% of remaining monies, even though I recognize that good research has been done and should continue. By putting 60-80% of the remaining monies toward buyback of lands, the Sound will be benefitted more than any scientific studies could possibly do. This also includes Copper River & Bering River areas which should be included in these critical lands.

I hope you will lean toward habitat protection (both large & small parcels) and set a target of 60-80% of remaining monies spent on buyback.

Sincerely,

John D. Lyle Box 83715
Fairbanks Alaska 99708

TO: TRUSTEES
RE: RESTORATION RESERVE & HABITAT PROTECTION

3895

Thank you for holding this special evening meeting for those of us who work during the day and aren't able to attend your regularly scheduled meetings.

I am here tonight to request that the Restoration Reserve be dedicated to the HABITAT of the species and communities devastated by the 1989 spill.

Habitat protection-- over research-- ensures the long-term health of these communities.

This is obvious when you consider the consequences of freshwater salmon streams drastically altered or destroyed as a result of industrial logging roads and clearcutting. Streams that connect to local economies based on their ability to fish a healthy, renewable stock of salmon.

I urge you to reconsider the boundary of the spill zone to include the Bering River Uplands in the Copper River Delta. Because you have already established good communication with Eyak Corporation, this is the ideal time--considering the 10 year anniversary-- to prevent another potential catastrophe facing the local fishing economy of Cordova by protecting this region of the Delta that is threatened by major road development and resource extraction. The Native shareholders will benefit in the short-run while their land and cultural heritage are preserved for the long-run. (I do also advocate for "conservation easements" regarding this negotiation.)

For future generations, PLEASE make a lasting decision by dedicating the Reserve fund towards habitat protection and including the Copper River Delta in your program.

Thank you.

written

- Henry Nordhoff (Anchorage, Alaska) Testimony on January 21, 1999.

115

PETITION TO THE *EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL

SUPPORT FOR THE ESTABLISHMENT OF A $20 MILLION COMMUNITY FUND

We, the undersigned members of the Native communities affected by the *Exxon Valdez* Oil Spill of 1989, desiring meaningful involvement in the restoration of the natural resources upon which we depend, feel that a $20 Million Community Fund should be established as part of the plans for the Restoration Reserve. This Community Fund, set up as an endowment, would provide into perpetuity the opportunity for oil spill affected communities to protect and preserve our natural resources, working directly with state and federal agencies, through a spill area wide tribal natural resource management program. This endowment would also provide the opportunity to protect our cultural and traditional diversity through the funding of culturally- and tribally-based scientific programs that are ineligible for funding under the current EVOS funding guidelines. Further, we the undersigned, understand that we are entitled to develop our capabilities and capacity to manage our resources and conduct culturally based projects based upon the damage that was done to our traditional use areas and traditional lifestyles. Therefore, we petition the Exxon Valdez Oil Spill Trustee Council to set aside a $20 Million Community Fund as an Endowment in the Restoration Reserve Plan.

		Name	Tribe/Community - Address/Phone
4299 ✓	1.	John Johnson	Chugach Anchorage
4300 ✓	2.	Eleanor Johnson	248-1385
4301 ✓	3.	Iris Johnson	"
4302 ✓	4.	Shaymen Johnson	"
4303 ✓	5.	Lauren Johnson	"
4304 ✓	6.	Thomas Kompkoff	NONDALTON AK
4305 ✓	7.	Michael [illegible]	Cordova (907)424-7254
4306 ✓	8.	Agnetta Weil	Cordova AK 907-424-3643
4307 ✓	9.	Mark Weil	Cordova AK " "
4308 ✓		Mark [illegible]	Nome, AK 443-7842

		NAME	Tribe/Address/Phone
4309 ✓	10.	Mark Steen	Box 1310 CDV 424-5487
4310 ✓	11.	[illegible] Kompkoff	Tatitlek, AK 99677
4311 ✓	12.	[illegible] Saiiro	P.O. Box 84 Cordova AK
4312 ✓	13.	[illegible]	PO Box 1213 Cordova AK. 99574
4313 ✓	14.	Wade Schock	P.O. Box 1385, Cordova, AK 99574
4314 ✓	15.	Susan Weltz	Cordova AK
	16.	[illegible]	Cordova AK
4315 ✓	17.	mary Babic	Cordova, AK.
4316 ✓	18.	Nenora M. Nummer	Bx 773 Cdv
4317 ✓	19.	Sally J Stolberg	Bx 496 Cordova, AK
4318 ✓	20.	Wendie A. Smith	P.O. Box 2194 (Cordova)
4319 ✓	21.	Darlene Allison	Box 1163 Cordova AK 99574
4320 ✓	22.	Dawn Barnes	P.O. Box 175
4321 ✓	23.	[illegible]	Whittier Native Community Box 27, Akiak, AK 99552
4322 ✓	24.	Virgil Titus	minto alaska 99758
4323 ✓	25.	Lorene L. Gager	Cordova, Alaska
4324 ✓	26.	Alice Reilly	Chugach Box 1125, Cordova 424-7210
4325 ✓	27.	William E. [illegible]	PO Box 10.25 Fairbanks AK 99710
4326 ✓	28.	Newell K. [illegible]	Bx 1078 Cordova, AK
4327 ✓	29.	Darlene Anderson	BX 1694 Cordova. 7304
4328 ✓	30.	Helen Makarka	Box 452 Cordova
4329 ✓	31.	Stanley Makarka	Box 452 Cordova, AK
4330 ✓	32.	Jim McDaniel	Box 1002 Cordova AK 99574
4331 ✓	33.	Gilbert Olsen	Box 465 Cordova, Alaska
4283 ✓	34.	Dana [illegible]	Box 2022 Cordova, AK
4332 ✓	35.	Jeff Thelen	Box 645, Cordova, AK 99574
4333 ✓			

	NAME	Tribe/Address/phone
4334 ~ 36.	Kristine Jensen	PO Box 2085 Cordova
4335 ~ 37.	Mary Barrow	PO Box 1183 Cdv 3492
4336 ~ 38.	[illegible]	DX 479 CDV AK 99574
4337 ~ 39.	[illegible]	Box 1691 Cdv. AK 99574
4338 ~ 40.	Jessica Miner	Box 1869 Cdv. AK 995 74
4339 ~ 41.	Joann Thomas	P.O. Box 284 Cordova, AK 99574-62
4340 ~ 42.	John Thomas	Box 254 Cordova AK 99574
4341 ~ 43.	Helen Lord	Box 52 Yakutat AK
4342 ~ 44.	Cathy Wassillie	P.O. Box 317 Yakutat AK 99689
4343 ~ 45.	Ida Vallez	P.O. Box 272, Yakutat AK 99689
4344 ~ 46.	Annette K Janka	PO Box 1231 Cordova, AK 99571
4345 ~ 47.	Molly Rice	PO Box 1029 Cordova, AK 99574
4346 ~ 48.	Sue Aspelund	P.O. Box 1715, Cordova, AK 99574
4347 ~ 49.	Theresa Webb	P.O. Box 1278 CDV AK 99574
4348 ~ 50.	Ann Hodnett	PO Box 125 Cordova, AK 99574
4292 ~ 51.	Mary Ann Kompkoff	P O Box 8002 Chenega AK 99574
4349 ~ 52.	Laura Wheeler	P.O. Box 143 Cordova 99574
4350 ~ 53.	Debra Jensen	P.O Box 576 Cordova AK 99574
4351 ~ 54.	Sylvia Allen	P.O Box 358 Cordova AK 99574
4352 ~ 55.	George Allen	U/PO
4353 ~ 56.	George Sievers	P.O. Box 2703 Valdez AK. 9968
4354 ~ 57.	Barbara Leyva	P.O. Box 2703, Valdez, AK. 99686
4355 ~ 58.	Tamara Ball	POBox 2085 Cordova
4356 ~ 59.	[illegible]	P O Box 2085 Cordova AK
4357 ~ 60.	[illegible]	P.O. Box 1226 " "
4358 ~ 61.	[illegible]	P.O Box 1823 CDV, AK. 99574

		NAME	TRIBE/Address/Phone
4359	62.	Renate Riffe	PO Box 2383 CORDOVA
4360	63.	Patience Andersen Faulkner	Box 2574 Cdv AK
4361	64.	[illegible]	10804 Cape [illegible] Lp Anc AK
4362	65.	Bea Wittanen	Box 21483 Chenega Bay AK 9982
4363	66.	Fran Andersen	Box 1038 Cordova, Alaska 99574
4364	67.	John C. Nichols	Box 1752 CDV. " "
4365	68.	Marie a Nichols	Box 1752 CDV AK
4366	69.	Flarissa A. Espejo	Box 134 Cordova, AK 99574
4367	70.	Nicole PALLAS	Box 1522 CORDOVA 99574
4368	71.	Thomas Nothstine	Box 1114 CORDOVA 99574
4369	72.	Jon Bradshaw	Bx 2351 CORDOVA AK
4370	73.	Daniel T. Olsen	Box 2094 Cordova AK
4371	74.	[illegible]	Box 665 Cordova
4372	75.	Norma J. Selanoff	Box 8014, Chenega Bay, AK 99574
4373	76.	B D CAIN	BOX 303 GLENNALLEN AK 99588
4374	77.	Shelagh Cain	Box 303 Glennallen 99588
4375	78.	Pam Smith	Box 251 Cordova AK 99574
4376	79.	Gloria Hummingbird	P.O Box 1457 Cordova
4377	80.	[illegible]	Box 1125 Cordova AK 99574
4378	81.	[illegible]	3561 Amber Bay Lp Anch 99515
4379	82.	P Sanford	PO Box [illegible] Cordova AK 9957
4380	83.	Mike Kompkoff	Box 435 Cordova AK 99574
4381	84.	Rebecca F. Hailand Andersen	P.O. Box 993 Cordova, AK. 995
4382	85.	Todd Nothstine	Box 2041 Cordova
4383	86.	Jeanne Lind	Box 1872 Cordova
4384	87.	Andy Allen	BOX 1836 CDV. AK. 99574

	NAME	Tribe/Address/Phone
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PETITION TO THE
EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

SUPPORT FOR THE ESTABLISHMENT OF A $20 MILLION COMMUNITY FUND

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	Name	Tribe/Community - Address/Phone
2178	1. Robert J. Henrichs	NVE 424-3804
4385	2. Dawn C. Wilson	NVE 424-7473 Box 932 Cordova, AK 99574
4386	3. John Mark Hoover	NVE 424-3143 Box 2344 Cordova, Ak. 99574
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Kathryn Anderson | KATHRYN ANDERSEN

4387 ✓ Signature | Printed Name

Box 62 | 424-7352

Address | Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Cheryl M. Lettich ✓ | Cheryl M. Lettich

4388 Signature | Printed Name

Box 1024 | 424-5700

Address | Phone/Email

Cordova Alaska

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Sandie Maxwell | Sandie Maxwell

4389 ✓ Signature | Printed Name

P.O. Box 1574 | 424-5477

Address | Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

John L Anderson	JOHN C. ANDERSON
Signature	Printed Name
P.O. Box 303	424-7359
Address	Phone/Email

4390

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" In the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

Ron Anderson	RON ANDERSON
Signature	Printed Name
Box 1694	424-7304
Address	Phone/Email

4391

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" In the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Darlene Anderson	DARLENE ANDERSON
Signature	Printed Name
Bx 1694	424-7304
Address	Phone/Email

4328

dup

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4392 [signature] — Angelica M Andersen

Signature — Printed Name

Box 491 Cordova — 424-7383

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4393 [signature] — Per B Nolan

Signature — Printed Name

P.O. Box 924 — 424-3489

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4394 Barbara Beedle — BARBARA Beedle

Signature — Printed Name

Bx 819 — 3527

Address — Phone/Email

Beedle2@ Ptialaska.Net

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

4395 Mary Newirth — MARY NEWIRTH
Signature — Printed Name

Box 1102 Cordova. AK — 907 424-7670
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

4396 Donald E. Burch — DONALD E. BURCH
Signature — Printed Name

BOX 132 CORDOVA — 424-3422
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4397 John P Wiese — John P Wiese
Signature — Printed Name

Box 1031 — 424-7754
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

#396 ✓

Signature	Printed Name
Jason Barnes	Jason Barnes
Address	Phone/Email
PO Box 255	(907) 424-7449

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

#397 ✓

Signature	Printed Name
Donald Kurz	Donald Kurz
Address	Phone/Email
Box 2623	907-424-3679 / dkurz226@hotmail.com

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

#400 ✓

Signature	Printed Name
Judith C Cunningham	Judith C Cunningham
Address	Phone/Email
P.O. Box 303 Cordova, AK	907-424-7359

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4401 Bolen Cook — Bolen Cook

Signature — Printed Name

PO 215 Cordova Ak 99574 — 907 424-3507

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4316 c/up Mary Babic — Mary Babic

Signature — Printed Name

PO Box 1833 Cordova — 907 4245102

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Robert A. Maxwell — ROBERT A. MAXWELL

Signature — Printed Name

4402 Box 1785 Cordova, Alaska 99574 — 907-424-3361

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

#403

Signature	Printed Name
Wm R Reid	William R Reid
Address	**Phone/Email**
Bx 1234 Cordova	424 7448

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

#305 dup

Signature	Printed Name
Michele Holom	Michele Holom
Address	**Phone/Email**
PO. Box 1984	424-7254- Holom@Cordovanet.com

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

#304 dup

Signature	Printed Name
Teresa Weil	TERESA Weil
Address	**Phone/Email**
POBOX 476	424-3643-

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4404

Fran B. Anderson — FRAN B. ANDERSON

Signature — Printed Name

P.O. 1038 CORDOVA, AK 99574 — 424-7478

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from.this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4327 dup.

Newell K Anderson — NEWELL K. ANDERSON

Signature — Printed Name

PO BOX 1038 CORDOVA AK 99574 — 424-7478

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4405

Cynthia Maxwell — CYNTHIA MAXWELL

Signature — Printed Name

BX 344 Cordova — (907) 424-7237

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Signature	Printed Name
Robert J. Henrichs	Robert J. Henrichs
Address	Phone/Email
Box 1009 Cordova	424-3604

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Signature	Printed Name
Joe Cook	JOE COOK
Address	Phone/Email
Box 215 Cordova	424-3507

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Signature	Printed Name
Glenn C. Ujioka	Glenn C. Ujioka
Address	Phone/Email
P.O. Box 932 Cordova, AK	424-7423 glennu@ptialaska.net

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

4317 Glenora M. Zimmer — Glenora M. Zimmer
Signature — Printed Name

dup Box 773 Cordova — 9074243592 glenora@rocketmail.com,
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

4315 Pamela Smith — Pamela Smith
Signature — Printed Name

dup Box 251 — 9074243520 klpking@wcbtu.
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4281 Marlena Fonzi — MARLENA FONZI
Signature — Printed Name

dup Box 195 Cordova, AK — 424-7738 MFONZI@TRIBALNET.
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

John Mark Hoover	JOHN MARK HOOVER
Signature	Printed Name
P.O. Box 2344	907-424-3143
Address	Phone/Email

#386 ✓

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.
Sincerely yours,

Eric Dahlstrom	Eric Skulstad
Signature	Printed Name
P.O. Box 802 Cordova	907-424-3869
Address	Phone/Email

#407 ✓

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Rik Ott	RIK OTT
Signature	Printed Name
Bx 1430 Cordova	9074243915
Address	Phone/Email

#408 ✓

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4409 ✓

Anna Mae J Peschang — Anna Mae J Peschang
Signature — Printed Name

P.O. Box 793 Cordova AK 99574 — 424-3520 peschang@ptialaska.net
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4410 ✓

Sylvia Lange — Sylvia Lange
Signature — Printed Name

Box 135 — 424-7119 / CANROW@NETSCAPE.C
Address — Phone/Email

Cordova Alaska 99574

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4411 ✓

John Hopkins — John Hopkins
Signature — Printed Name

Box 343 Cordova — 424-7633 SLACK WATER JACK @ Hotmail.com
Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000, from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

4321 ✓ Arleene D Olsen — Arleene D Olsen

Signature — Printed Name

PO Box 233377 Anch, AK — 522 2546

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy fof funding for spill-affected communities, by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours, Arleene D Olsen

4323 ✓ minor by Sheila Kvasnikoff — Sheila Kvasnikoff

Signature — Printed Name

P.O. Box 233377 Anch AK 99523 — 522-2546

Address — Phone/Email

Dear Trustee Council Member

We urge you to to fund the Oil Spill "Community Fund" in the amount of $20,000,000 from the Restoration Reserve. The earnings from this fund would provide for Community Projects far past our lifetimes. This would be a splendid legacy of funding for spill-affected communities by the Exxon Valdez Oil Spill Trustees Council.

Sincerely yours,

Signature — Printed Name

Address — Phone/Email

PETITION TO THE *EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL

SUPPORT FOR THE ESTABLISHMENT OF A $20 MILLION COMMUNITY FUND

We, the undersigned members of the Native communities affected by the *Exxon Valdez* Oil Spill of 1989, desiring meaningful involvement in the restoration of the natural resources upon which we depend, feel that a $20 Million Community Fund should be established as part of the plans for the Restoration Reserve. This Community Fund, set up as an endowment, would provide into perpetuity the opportunity for oil spill affected communities to protect and preserve our natural resources, working directly with state and federal agencies, through a spill area wide tribal natural resource management program. This endowment would also provide the opportunity to protect our cultural and traditional diversity through the funding of culturally- and tribally-based scientific programs that are ineligible for funding under the current EVOS funding guidelines. Further, we the undersigned, understand that we are entitled to develop our capabilities and capacity to manage our resources and conduct culturally based projects based upon the damage that was done to our traditional use areas and traditional lifestyles. Therefore, we petition the Exxon Valdez Oil Spill Trustee Council to set aside a $20 Million Community Fund as an Endowment in the Restoration Reserve Plan.

	Name	Tribe/Community - Address/Phone
4280 ✓ 1.	EDNA BLATCHFORD	EVT 224-3115
4281 ✓ 2.	MARLENA FONZI	BOX 1388 CORDOVA, AK 99574
4282 ✓ 3.	[illegible]	BOX 1816 SEWARD, AK 99664
4283 ✓ 4.	[illegible] Lydia Robert	BOX 665 CORDOVA, AK 99574
4284 ✓ 5.	Lydia Robert	Port Graham, AK
3759 6.	[illegible]	TATITLEK AK. 99677 325-2306
4285 ✓ 7.	[illegible]	Port Graham
4286 ✓ 8.	Steve Davidson	EYAK
3282 9.	[illegible]	Port Graham, Alaska

PETITION TO THE
EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

SUPPORT FOR THE ESTABLISHMENT OF A $20 MILLION COMMUNITY FUND

We, the undersigned members of the Native communities affected by the *Exxon Valdez* Oil Spill of 1989, desiring meaningful involvement in the restoration of the natural resources upon which we depend, feel that a $20 Million Community Fund should be established as part of the plans for the Restoration Reserve. This Community Fund, set up as an endowment, would provide into perpetuity the opportunity for oil spill affected communities to protect and preserve our natural resources, working directly with state and federal agencies, through a spill area wide tribal natural resource management program. This endowment would also provide the opportunity to protect our cultural and traditional diversity through the funding of culturally- and tribally-based scientific programs that are ineligible for funding under the current EVOS funding guidelines. Further, we the undersigned, understand that we are entitled to develop our capabilities and capacity to manage our resources and conduct culturally based projects based upon the damage that was done to our traditional use areas and traditional lifestyles. Therefore, we petition the Exxon Valdez Oil Spill Trustee Council to set aside a $20 Million Community Fund as an Endowment in the Restoration Reserve Plan.

	Name	Tribe/Community - Address/Phone
2178 ✓ 1.	Bob Henrich	Eyak
4287 ✓ 2.	Pauline N. Allen	Eyak
4288 ✓ 3.	Dana L. Rhodes	Outekcak
3647 ✓ 4.	Donald P Kompkoff Sr.	Chenega / Valdez
4289 ✓ 5.	Pete A. Kompkoff Jr	Chenega
6.		
7.		
8.		
9.		

4290 ✓	10.	Stoaman Norman	Port Graham
4291 ✓	11.	Alice Moonin	Port Graham
3310 ✓	12.	Dorothy Moonin	Port Graham
3299 ✓	13.	Augusta E. Kvasnikoff	Port Graham [illegible]
4298 ✓	14.	Charles W Selanoff Jr	Tatitlek Alaska
4292 ✓	15.	Mary Kompkoff	Chenega AK
4293 ✓	16.	Carol Ann Kompkoff	Chenega AK
4294 ✓	17.	Lillian Elvsaas	Seldovia, AK.
3283 ✓	18.	[illegible] Dawson	Port Graham AK.
4295 ✓	19.	Lorena Konberg	Ouzinkie
4296 ✓	20.	Marie Lang	Anchorage
4297 ✓	21.	James W. LaBelle Jr.	Anchorage
	22.		
	23.		
	24.		
	25.		
	26.		
	27.		
	28.		
	29.		
	30.		
	31.		
	32.		
	33.		
	34.		
	35.		

2060 Dup. ✓

6417 Ush 11
Canton, N.Y. 13617
January 27, 1999

Exxon Valdez Oil Spill
Trustee Council
Recovery Updates
645 G Street, Suite 401
Anchorage, Alaska 99501

Dear Sir:

Thank you for sending me a copy of the Exxon Valdez Oil Spill Restoration Plan of January 1999.

You are to be commended for proceeding in the best interests of attempted recovery from the destruction inflicted by Exxon.

The acquisition of private lands for addition to public lands, particularly federal land, is most important to reduce the probability of more damage to natural resources in the future.

As the Plan clearly indicates, some of damage is irrevocable regardless of the best efforts to bring about recovery.

While the oil extraction, sale and transportation, has been Alaska's major income, as the last remnants of oil is removed from the ground, the long term damage to Alaska's other natural resources will become more apparent as renewable resources become primarily necessary.

Sincerely,
Clarence Petty
Clarence Petty

Mr. Clarence Petty
6417 Ush 11
Canton, NY 13617

3050 L

Mr. Craig Tilery
c/o Exxon Valdez Oil Spill Council
Restoration Office
645 G Street, Suite 401
Anchorage, AK 99501-3451

February 1, 1999

Dear Sir,

I am writing to you to express my thoughts on the use of reserve funds for restoration and protection of the Prince William Sound area. I believe that the unfortunate environmental disaster of the Exxon Valdez oil spill is best mitigated for by providing future habitat protection of sensitive areas. The most effective means of providing this protection is through acquisition and direct protection of habitat. Therefore, I wish to encourage that the bulk of the mitigation money from the oil spill be focused on the purchase and protection of sensitive wetland and coastal areas. Use of funds for this purpose will provide a lasting legacy of preservation with far more permanent positive benefits than research and monitoring. Please carefully consider this rare opportunity to provide meaningful protection to important habitat areas within the sound.

Upland areas adjacent to the Bering River, as well as the Copper River Delta system, would be especially appropriate areas for acquisition and protection. Given the high importance of these wetland habitats for aquatic species and migratory birds (both of which suffered substantial impacts from the oil spill), protection efforts are both timely and necessary.

Land and water protection efforts which are undertaken now will prove to be of critical importance in the protection of the larger ecosystems of the area. Thank you for your careful consideration of the best use of the reserve funds and your work on this important matter.

Sincerely, Derek Sowers

Derek Sowers
318 SW 7th Street
Corvallis, OR 97333
email: dsowers@oce.orst.edu

2136 r

To: Exxon Trustee Council,

Thank you for the opportunity to express my ideas with regard to restoration of Prince William Sound. I have thought long and hard about what can be done, and it is my conclusion that a fund set up with the University system and continued research and monitoring of the Sound as well as safeguards for prevention of spills is about the best we can do.

I am an Alaska resident since 1967 and have worked in PWS since 1990.

I have worked for the Department of Fish and Game on many oil related projects.

Last summer, due to budget cuts (or lack of funding) the Department was unable to fund the Eshamy weir Escapement project. This is not the first time this has happened, but it is one of the State's longest running projects (1959), representing a 40 year data base. The Federal Bureau of Fisheries was there in the 1930's. Salmon runs are not what they used to be there, but this

Although Eshamy lagoon was not directly impacted by the oil, it is a major nursery area for smolts and other wildlife in the area. Adult salmon and cutthroat trout are particularly vulnerable and deserve protection. I congradulate the Trustees for safeguarding the land there.

I have been privelaged to work the weir camp there from 1992-97. We have counted approximately 300 visitors in an average year, including several commercial/sport guiding outfits. It is a major

I would be a wonderful world if everyone played by the rules and didn't break laws or simply respected nature and each other but that is not the case. Even with a Fish and Game and Wildlife Protection presence degradations due occur. To spend millions to preserve this CrownJewel of the Sound and then leave the door open for anyone to help themselves is foolish at best.

The weir crew there provides a multi purpose function. We've hosted pilots

visitors thumbs, relayed messages via radio, and provided information and a cup of coffee for curious visitors, as well as collected Data. The sheer beauty of the place puts most people in a positive state of mind; I've seen that look on people's faces, the same one I had when I first saw the place.

I would like to see some kind of action taken by the Trustees to insure that this area is protected. My feelings are motivated by an intimate knowledge of

hope of continued employment. Last year I worked in Bristol Bay for Fish + Game and made a similair amount of money in less time. It isn't important that I be there. Someone, however, should be there. Without daily escapement data, the set-netters do not stand a chance of a commercial fishing opening.

As Alaska changes these traditional uses and places may fall by the wayside, but not by chance; it is people that make these decisions.

I understand that the Trustees refuse to fund on-going State projects, which makes sense to me. I'm not sure who the caretaker of the land is today, Forest Service or D.E.C. or State Parks. Since Fish Camp has run it for so long, and the cabin and camp equipment is all in place, they would be the best qualified to maintain a camp there. I understand the cost of having a camp to be $30,000. Someone should be there. "Eshamy" means "good fishing." Let's make it a keeper!

P.O. Box 652, Cordova

2248

DEAR E VOS

HELLO I AM A FULLTIME RESIDENT OF THE COPPER RIVER DELTA. WITH THE PROOF NOW THAT WATER CURRENTS IN THE SOUND & GULF CAN MOVE THINGS (BOUYS ETC) INTO THE COPPER RIVER DELTA REGION. I PLEASE REQUEST THAT YOU EXTEND YOUR CONTINGENCY LINE FROM THE COPPER RIVER EAST TO KATALLA TO INCLUDE THE BERING RIVER REGION & PROTECT IN FROM FUTHER DEVELOPMENT. THERE IS MUCH AT STAKE FOR THE RESIDENTS OF THE COPPER RIVER DELTA & PWS IF THE HABIT IS DEVELOPED WASTEFULLY. PLEASE HELP IN EXTENDING YOUR CONTINGENCY LINE TO PROTECT THE EAST SIDE OF THE COPPER RIVER DELTA.

THANK YOU

STEVE VELAN

POB 1653

CORDOVA AK 99574

PH# 907-424-5990

2001 Supp. V

January 9, 1999

To Whom It May Concern:

I feel the best use of the Restoration Reserve would be to spend it on habitat acquisition. Nothing could be more beneficial for the health of the affected species than to preserve their habitats. This will also help ensure clean water, abundant fisheries, hunting and recreational opportunities for communities around the spill area.

Much important and threatened habitat was protected with monies from Trustee Council but much was left unfinished. If we really want what is best for everyone and everything affected by the spill then please use all the Reserve for habitat protection.

Sincerely yours,

Mitchell B. Cline
P. O. Box 945
Girdwood, Ak. 99587

2005 Supp.

January 9, 1999

To Whom It May Concern:

I feel the best use of the Restoration Reserve would be to spend it on habitat acquisition. Nothing could be more beneficial for the health of the affected species than to preserve their habitats. This will also help ensure clean water, abundant fisheries, hunting and recreational opportunities for communities around the spill area.

Much important and threatened habitat was protected with monies from Trustee Council but much was left unfinished. If we really want what is best for everyone and everything affected by the spill then please use all the Reserve for habitat protection.

Sincerely yours,

Hope Cline
P. O. Box 945
Girdwood, Ak. 99587

4199 ✓

Veronica Christman

From: Tami Yockey [tami_yockey@oilspill.state.ak.us]
Sent: Thursday, January 14, 1999 1:01 PM
To: Veronica Christman
Subject: FW: EVOS Reserve

-----Original Message-----
From: Jeff Brownlee [mailto:brownhen@alaska.net]
Sent: Thursday, January 14, 1999 1:01 PM
To: restoration@oilspill.state.ak.us
Subject: EVOS Reserve

Below is the result of your feedback form. It was submitted by
Jeff Brownlee (brownhen@alaska.net) on Thursday, January 14, 1999 at
13:00:54

Opinion: Dear EVOS Trustee Council: I support EVOS funding for establishing research endowments and research chairs at the University of Alaska!

REMOTE_HOST: 146.63.206.113

4200

Veronica Christman
From: Tami Yockey [tami_yockey@oilspill.state.ak.us]
Sent: Thursday, January 14, 1999 12:27 PM
To: Veronica Christman
Subject: FW: EVOS Reserve

-----Original Message-----

From: **Clint Adler [mailto:clint.kemberly.adler@att.net]**
Sent: Thursday, January 14, 1999 12:27 PM
To: restoration@oilspill.state.ak.us
Subject: EVOS Reserve

Below is the result of your feedback form. It was submitted by
Clint Adler (clint.kemberly.adler@att.net) on Thursday, January 14, 1999 at
12:26:41

Opinion: Dear EVOS Trustee Council: I support EVOS funding for establishing research endowments and research chairs at the University of Alaska!

REMOTE_HOST: 146.63.206.243

2042

January 18, 1999

Molly McCammon
Executive Director
Restoration Office
645 G Street, Room 401
Anchorage, AK 99501-3451

Dear Director McCammon:

I would like to take this opportunity to comment on the uses of the approximate $140 million Restoration Reserve monies.

I believe the money should be invested in an endowment fund with the interest earned being used to fund marine research. Projects could involve intertidal pool, birds and marine mammals. As the fund grows a University of Alaska chair could be endowed dedicated to mammals, fish or birds. That would keep the money in the areas impacted by the spill and would be a lasting legacy.

There are many worthwhile projects which have been funded in the past by the EVOS Council, There, however, continue to be many needs and this would help cover those needs.

Sincerely,

Willard E. Dunham
P.O. Box 27
Seward, Alaska 99664
Phone: (907) 224-5623
Fax: (907) 224-7318

4187 Dep. 1.17.99

Dear Mr. Tillery,

I am convinced the single greatest influence on addressing EVOS damage is to put money into habitat preservation.

I own a 20 acre homestead in PWS, out of Valdez. I have been a research asst. of killer & humpback whale studies in PWS for many years. Funding science is important. Funding land buy backs & habitat preservation is even more important.

Sincerely,

John D. Lyle
Box 83715
Fairbanks, AK 99708
U.S.A.

Board of Regents

Molly: FYI
- Lew

UNIVERSITY OF ALASKA

LEW M. WILLIAMS, JR.
755 Grant Street
Ketchikan, Alaska 99901
January 15, 1999

Sen. Ted Stevens
522 Hart Office Building
Washington, D.C. 20510-0201

Dear Ted:

I saw you in the front row of the impeachment hearing. I don't envy you the job but I know you'll do well. I'll not bug you about it. However, I have an idea that maybe someone on your staff, on the University of Alaska staff, on the Exxon Valdez Oil Spill Trustees' staff and American Seafoods staff may want to consider. It might take some legislation.

Jan Jacobs of American Seafoods tells me that his company has to dispose of nine ships used in the North Pacific because of your legislation. I don't know the value of those ships in the world market when banned from U.S. waters. But I have been aboard one of the factory ships and it is quite impressive. I wonder if there is a potential to convert one of those ships to a research vessel for the University of Alaska to replace its smaller Alpha Helix?

When I went on the University Board of Regents eight years ago, the National Science Foundation was looking for a bigger ship for North Pacific research. The University was interested in the project so it could be used to replace or supplement the Alpha Helix stationed at Seward. But NSF could never raise the money.

And now we have the Exxon Valdez Trustees wondering what to do with the $140 million reserve it has accumulated. I think they should keep it in a principal and use the earnings to continue research into future years. Others propose creating an endowment for the Unversity of Alaska with a portion of it, which also is a good idea. However, if the University could acquire one of the large factory trawlers and equip it for research, possibly the Exxon Valdez Trustees could provide some conversion and/or operating funds because the ship would be stationed in the spill area and be doing a large portion of research there. NSF and NOAA might share in sue of the ship.

If all else fails for American, I am reminded that the Canadians sank a couple of old warships off the B.C. coast to use as artificial reefs — habitat for fish. I can't imagine artificial reefs have to comply with the Jones Act. The University staff and the spill trustees' staff might use some spill money to determine the feasibility of creating artifical reefs, especially near rookeries. They can be supplemented with old car bodies of which there are plenty in Alaska towns because recycling is too expensive.

UNIVERSITY OF ALASKA

Any of those ideas probably will take special legislation and some federal funds so I am writing to you with copies to American Seafoods, the University and the Trustees.

Sincerely yours,

Lew M. Williams, Jr.
Regent, U of Alaska

cc: Mark Hamilton UA President
Molly McCammon, ex. dir. Exxon Valdez Spill Trustees
Jan Jacobs, American Seafoods

)938 Jup ~

Cherri Womac

From: Jeff [jeff_lawrence@oilspill.state.ak.us]
Sent: Thursday, January 21, 1999 4:18 PM
To: Cherri Womac
Subject: FW: Restoration Reserve Fund

-----Original Message-----
From: Vicki L. Jones [mailto:vicki_jones@admin.state.ak.us]
Sent: Thursday, January 21, 1999 4:11 PM
To: restoration@oilspill.state.ak.us
Subject: Restoration Reserve Fund

As a resident of Kodiak Island I feel it is imperative part of the restorative funds be used to protect the Karluk and Sturgeon drainages. Habitat protection for the wildlife that lives there should be a prime goal for the Council. I ask you to allocate funds to ensure this area is protected from any future damage. I understand considerable funds have been delegated to research which is certainly of considerable importance, but we must also retain areas that maintain the health of the wildlife and plant life that live there.

Vicki Jones
818 Steller Way
Kodiak, Alaska
(907)486-6236

3866 ...

Rebecca Williams
From: Richard D. Hahn [rdhahn@eagle.ptialaska.net]
Sent: Thursday, January 21, 1999 9:28 AM
To: rebeccaw@oilspill.state.ak.us
Subject: Use of Oil Spill Money

Date: Wed, 20 Jan 1999 16:27:51 -0900
To: rebecca@oilspill.state.ak.us
From: **"Richard D. Hahn" <rdhahn@eagle.ptialaska.net>**
Subject: Use of Oil Spill Money

To Whom It May Concern: I believe there should be 3 primary uses for the oil spill money which would benefit present and future fisheries of Alaska.

These are as follows:

1) Research should be done on the shorelines hardest hit by the oil spill to determine if the spill itself or the attempted spill cleanup methods caused permanent damage, AND what, if anything could be done to correct the long term damage. In some cases, nothing is better than something!!

2) One or more mechanized, mobile oil skimming rigs should be procured which could be moved quickly by helicopter to any future spill site as an emergency response. Although the initial expenses of such a response would be born by the State, those expenses could be back-charged to the organization that caused the spill.-and

3) There are many salmon streams which empty into Prince William Sound and the Cook Inlet which require continuous bank and other habitat restoration and maintenance to assure the long term health of the streams' fisheries. If the materials for such habitat restoration and maintenance (eg, willow plants, palm logs, etc) were procured with some of this money and furnished free, there are many volunteers like me who are retired who could make such an effort happen. Many such volunteers simply cannot afford the out-of-pocket costs for the materials.

For those who manage these funds, it is your responsibility to balance the allocations among the three items above, should you choose to implement them and administer any of the procurements.

Respectfully Submitted,

Richard Hahn
P.O. Box 2754
Soldotna, AK 99669
907-262-8575

4201 ~

Veronica Christman
From: Molly McCammon [molly_mccammon@oilspill.state.ak.us]
Sent: Thursday, January 21, 1999 8:41 AM
To: Veronica Christman; Stanley E Senner; Rebecca A Williams
Subject: FW:

-----Original Message-----

From: **Tami Yockey [mailto:tami_yockey@oilspill.state.ak.us]**
Sent: Thursday, January 21, 1999 8:31 AM
To: Molly McCammon
Subject: FW:

-----Original Message-----

From: **Gayle Hansen [mailto:gayle.hansen@hmsc.orst.edu]**
Sent: Tuesday, January 19, 1999 7:31 PM
To: restoration@oilspill.state.ak.us
Subject:

January 19, 1999

To:

Molly McCammon, Executive Director
Restoration Office
Anchorage, Alaska

Dear Dr. McCammon and Members of the Council,

Although I will not be able to testify at the public hearing on Thursday, I would like to put in a request to the Trustee Council to add "marine biodiversity" to their list of possible research funding areas for the Restoration Reserve.

I am concerned about support for taxonomic and biogeographic projects that describe the marine flora and fauna of Alaska, particularly those that produce technical papers and books. These types of studies are extremely important now because the current extinction rate for the earth's species is thought to be between 50,000 and 100,000 species per year. Since many of these extinctions will occur in Alaska, it is crucial that we document Alaskan biodiversity now before it is too late.

During the EVOS studies, massive collections of marine algae and invertebrates were made as vouchers for the damage assessment projects. I, myself, collected (with the assistance of the boat teams), curated, identified, and computerized about 7,500 sheet of dried seaweeds. However, as soon as these specimens were completed, the money ended. There was no funding provided for processing the liquid-preserved collections or, more importantly, for the morphological and taxonomic studies necessary to describe the new and rare species. No money was provided for local biogeographic analysis of the species, a factor that might have added considerable weight to the proof of damage from EVOS. During our intertidal survey, I discovered that about 25% of the algal species in the oilspill area were either new to the area or were undescribed, often making it difficult for our ecological teams to work. I found it shocking that any area of the United States was so under-investigated taxonomically. Funding for basic

taxonomy and biogeography is difficult to obtain. Since the EVOS studies ended, I have tried every year to obtain some support for my taxonomic studies on the Alaskan marine flora. All of my proposals met with rejection, except for my last one. This year, for the first time, NSF has agreed to fund myself and a colleague in Phase 1 of our Marine Algal Flora of Alaska. This initial support will enable us to produce a WEB-based catalog of all herbarium specimens of Alaskan marine algae held world-wide. This database will be a welcome resource for ecologists working in Alaska. However, we would also like to produce a hard-copy version of the database information that we feel will have longer and more lasting use. With limited resources, NSF could not support this latter part of our project but suggested that we try to derive matching funds for it from other resources (such as the Trustees Council). They also suggested that we try to find a major funder for our future illustrated Marine Algal Flora of Alaska. Since so much of the information for our Flora began with the EVOS studies, support for this biodiversity project could be an appropriate use of the Restoration Reserve. I, therefore, hope that you will include "marine biodiversity" on your list of future research objectives for the Fund. My colleague and I plan to submit our formal proposal to the Council next year.

Sincerely,

Gayle I. Hansen, Ph. D.
Associate Professor
Oregon State University
Hatfield Marine Science Center
2030 S. Marine Science Dr.
Newport, Oregon 97365

gayle.hansen@hmsc.orst.edu

Testimony to EVOS Trustee Council held Jan 21, 1999 from The Homer L.I.O.

Hello. My name is Laurie Daniel and I am speaking to you This evening both for myself as an individual and as Chair of The Overlook Park Committee in Homer.

I would like to encourage The EVOS Trustee Council to allocate significant money from The Restoration Reserve fund towards continuing your program of habitat acquisition and protection.

As a member of The Kachemak Bay community That experienced direct impacts from The Exxon Valdez Oil Spill, I would like to personally Thank you all for The money you have spent to date protecting small habitat parcels Through acquisition locally. Most specifically, I would like to identify The new Overlook Park portion of Kachemak Bay State Park That has been created as a result of your small parcel habitat protection program.

We have further opportunity for habitat protection as part of Overlook Park Through The acquisition of which have been

under negotiation for acquisition with EVOS funds to date and others which are being discussed locally for acquisition or conservation easement to The Park. Specifically, I encourage The Trustee Council to continue The habitat protection program with The Reserve Funds, and to move forward with acquiring The Baycrest Parcel for addition to Overlook Park.

Preventing further harmful development to habitat Through protection by acquisition is The primary means of promoting recovery in spill-affected areas. Protecting The ecological integrity of The unique local habitat of Overlook Park by acquiring The available adjacent land parcels is an appropriate and valuable use of The Restoration Reserve Funds.

I recommend That The Trustee Council allocate 50% of The Reserve Funds

towards Habitat Protection and 50% towards Research.

Thank you very much for all your hard work and for the opportunity to comment this evening.

2 - Laurie Daniel

3530 dup

Comments to EVOS Trustees Council

JANUARY 21, 1999 FROM Mike Yourkowski

3059 Kachemak Dr., Homer, AK 99

This is Mike Yourkowski, Homer City Councilm. and board member of the Kachemak Heritage Land Trust. First of all I would like to thank you for your habitat restoration project. around Kachemak Bay. The purchases of prime habitat in Kachemak Bay State Park, the overlook park area, and on the Homer Spit have greatly helped to reduce the impact of the oil spill on thi. area. The same can be said of purchases on Kodiak, Afognak, and Shuyak Islands as well a Kenai Fiords National Park and Prince William Sou Your Current Policies have done a good job of protecting habitat which in my opinion is the best way to ensure the long term health of the fish and wildlife resources that affected Communities depend on for their economic, recreat and cultural well being. Your policies have received a clean bill of health from the G.A.O. Why do you want to change them. There is still much to do. Consider the

CLEAR CUTTING, OIL SPILLS AND SPRUCE BARK BEETLES WHEN YOU THINK OF WILDLIFE MIGRATION COORIDORS AROUND KACHEMAK BAY, THE COOPER RIVER DELTA AND THE BERING RIVER UPLANDS. CONSIDER THREATENED BROWN BEAR HABITAT ON THE KENAI PENINSULA AND THE KARLUK AND STURGEON RIVER DRAINAGES.

OVER THE PAST NINE YEARS I HAVE PARTICIPATED IN OVER TWO DOZEN OIL SPILL RELATED RESEARCH PROJECTS, many funded by the Trustees Council AND HAVE DERIVED A LARGE PART OF MY INCOME FROM PROVIDING RESEARCHERS ACCESS TO REMOTE AREAS AFFECTED BY THE SPILL. I HAVE ALSO SEEN THE BENEFITS OF HABITAT PROTECTION TO MY COMMUNITY. THE FUNDS THAT YOU CONTROL NEED TO BE MANAGED FOR MAXIMUM FLEXIBILITY WE NEED TO BE OPPORTUNISTIC. IT IS UNWISE TO RESTRICT THESE FUNDS TO RESEARCH WHEN IT IS QUITE LIKELY THAT CAREFUL AND SELECTIVE USE COULD PROVIDE NECCESARY FUNDING TO PURCHASE VALUABLE HABITAT OUTRIGHT, ACQUIRE CONSERVATION EASEMENTS OR PROVIDE THAT MISSING BIT OF FUNDING THAT SOMEOTHER ENTITY MIGHT NEED TO COMPLETE A VALUABLE PROJECT. I ENCOURAGE YOU TO KEEP 75% OF YOUR RESERVES FOR HABITAT

4203

Exxon Valdez Oil Spill Trustee Council:

I support research of the effects of the Exxon Valdez Oil Spill, but also think that it is important to preserve land that is important to the recovery of the many ecosystems that have been lost or spoiled by the massive oil spill.

Thank you,

Christina Kriedeman
PO Box 487
Seward, AK 99664
(907) 362-3130

Port Graham Village Council
PO BOX 5510
Port Graham, AK 99603-5510

3282 dup.

To:
Exxon Valdez
Oil Spill
Truster Council

From:
Frances Norman
P.O. Box 5509
Port Graham, Alaska
99603

Date: 1/21/99
Number of Pages:
Phone: 907-284-2227
Fax: 907-284-2222

Remarks:

I am in support of Chugachmiut, ~~[illegible]~~ Chugach Alaska Corporation & Qutekcak Regional Repository & local Display facilities proposal for I. believe it would best serve everyone.
I am also in support of the establishment of a 20 million Tribal community fund for the tribes in the oil spill affected areas.
I am against land acquisition in any form.

Thank you.

Frances Norman
Tribal Member
Subsistence user
Subsistence fisherman

Port Graham Village Council
PO BOX 5510
Port Graham, AK 99603-5510

3705 ✓

To:
EXXon Valdez
Oil Spill
Truster Council

From:
Riley Meganack

Date:
Number of Pages:
Phone: 907-284-2227
Fax: 907-284-2222

Remarks:

I am against land acquistion in any form. I Support the establishment of a 20 million Tribal community fund for the tribes in the Oil spill affected areas.
I also support the Regional Repository & local Display facilitaties proposal by Chugachmiut, Chugach Alaska Corporation & Qutekcak. I feel this proposal would best serve everyone.

Thank you
Riley Meganack
Village Council Member
Subsistence Fisherman

Port Graham Village Council
PO BOX 5510
Port Graham, AK 99603-5510

3683 ✓

To:
EVOS Trustee Council
276-7178

From:
Christalina Jager
Port Graham Resident / Concerned comm. member
Subsistance User
Tribal member

Date: 1-21-99
Number of Pages: 1
Phone: 907-284-2227
Fax: 907-284-2222

Remarks: January 21, 1999 To: Trustee Council.

I am interested in voicing my support for the proposal by Chugachmiut / Chugach Alaska and Qutekcak Native tribe for a regional repository in Seward AK, Local display facilities and traveling exhibits.

I also support the establishment of a 20 million dollar tribal community fund for the tribes in the oil spill effected areas. I understand this money will be used specifically by the tribes and I support that 100%!

I also support the dismantling of the trustee Council

Thank you for this opportunity to be heard by the trustee Council regarding these important matters. Christalina Jager

4017 dup. ~

Terry S. Dixon
Box 1058
Seward, Ak 99664
(907) 224-5849

As a biologist I feel the best use of "Restoration Reserve" fund should be used to buy and protect habitat. EVOS funds have done much for our area ie. SeaLife Center, Lowell Pt., Grewer Lake & Kenai Fjords buybacks.

Boundary should be expanded to include Copper River. The reserve fund should be used for habitat acquisition.

I was here!

Terry S. Dixon

420 ✓

I strongly support spending of EVOS monies to purchase and forever set aside land for natural habitat. I believe this would be the most useful way to keep the ecosystem functioning properly now and forever.

Ron Willey
Phone: 362-3130
Address: PO Box 487 Seward, Ak 99664

4265

GARY WILKEN
SENATOR
Districts 29 & 30
West Fairbanks

Senate Standing Committees
Chairman: Health, Education, and Social Services (HESS)
Vice Chairman: Transportation
Vice Chairman: Community and Regional Affairs

Special Committee
Member: Administrative Regulation Review

Alaska State Legislature
Senate

During Session:
State Capitol, Room 510
Juneau, Alaska 99801-1182
(907) 465-3709 (v)
(907) 465-4714 (f)
www: akrepublicans.org wilken.htm
E-mail: Senator_Gary_Wilken@legis.state.ak.us

Interior:
119 N. Cushman St., Room 213
Fairbanks, Alaska 99701
(907) 452-3421
Fax (907) 452-3426

January 19, 1999

EVOS Trustee Council
Restoration Office
645 G Street, suite 401
Anchorage, AK 99501

Dear Members of the EVOS Trustee Council,

I encourage you to please consider awarding a research endowment to the University of Alaska.

As you know, Alaska is entering a state of financial crisis. It's increasingly difficult to maintain state funding levels to the University, not to mention other state agencies. The University has therefore begun to diversify its revenue sources, and research endowments are an excellent avenue for many reasons.

An EVOS research endowment will further both parties inherent mission to promote learning and teaching. It will support the advancement of technologies for such things as oil spill cleanup, environmental restoration, coastal wildlife and fisheries management, and most importantly oil spill prevention. New technology results in patents, which trigger future research funding sources, which in turn stimulates further technology advancement. Endowment revenues also provide ongoing interest income critical to the University's efforts of reduced dependence on state general funds. The long-term benefits of investing in the University of Alaska are virtually immeasurable, but can easily be conceived as having worldwide implications.

Please join me in endorsing the University of Alaska as a highly appropriate recipient of Exxon Valdez Oil Spill endowment funds.

Thank you very much for your consideration.

Sincerely Yours,

Gary Wilken
Senator, West Fairbanks

Home of the

1

CHIGNIK LAKE, A[illegible]

To Trustee Council

~2670 [illegible]

Thank you for giving me this opportunity to Address My people's Concerns as well as mine,

I'm The facilitator for the Peninsula Sit on a Tridition[al] Council As A Member as well as Chignik River Ltd Member:

I speak In favor of the $20 million dollar restoration reserve to restores damaged resorses, use money to provide Economic development In oil hit Region.

Don't buy off Land. thats not what the Moneys were Intended for, In the first Place, Save Land for our children & their children for generations to come so they could Subsist from the Land & sea after the Restoration process prosegure

I would like to see a person sit on the trustee council from the oil Spill region.

I want Studies done on Salmon, Sealion, Seal & Eider ducks, I know as a loca[l] Risident for 54 yrs since the oil spill [illegible] I Mentioned are on a seve[re] [illegible]

I heard Scientists Claim that studies were done on seals before oil Spill Ide like to see It In Writing Where & When studies were done & Why? there was no oil Spill then. It think It was a cover up to protect Exxon so they wouldent have to blame the oil spill.

I would like to see Clam studies done too since we have to go a long ways to get safe Clams since the oil spill.

Ivanoff Bay is looking for ways to Reenhance Clams or replace With Scallops or Oysters.

Our Elders some like My Grandmother Who Originaly Came from Katmai After the Eruption ~~[illegible]~~ Grandma from Bear River Comments & Said there Goes everything that is most Important In our lives after the oil spill 1989, How are we going to live so well again, Our sea & land we hold so dear to our hearts is Part of the life chain is soiled lots of fish ~~game~~ & birds & Whales are going to die like ~~[illegible]~~ a Cloud settled over families.— the oil Sheen came In to the Lagoon Into our fishing Area & Clamming areas. Boats had Oil Zorb pads they were being thrown Into the Water to absorb the Oil Sheen It Was endless [illegible] In — Helpless we helped &

I was the Health Aide then had A very busy summer, Boats on the beach people had problems that dident exist It was the hardest work load of My Many yrs as A Community Health aide In 15 yrs on My time, seems like people like me dont Want to talk about the oil spill I just read the article written by Jody Sity "Alaska Coastal Currents" About life After Oil Spill In Chignik Lake, She questioned the Wrong people for Instance Eddie Staton dident go thru what I went thru & The younger people dident subsist as much as the Middle age people Then. They said the Eider ducks were comming back thats not true I've lived here all my life & I know When Eiders Are Supposto Come In & I havent seen Them come back? & our seal & selion are almost gone!

Ide like to see the Archaeological Restoration Programs funded as well as T.E.K.

Thank you

Sincerely

Virginia Aleck

P.O Box 18
Chignik Lake, Ak.
99548

#206 ✓

Cherri Womac

From: Jeff [jeff_lawrence@oilspill.state.ak.us]
Sent: Sunday, January 25, 2099 7:14 PM
To: Cherri Womac
Subject: FW: Objection to creating an endowment for the University of Alaska

-----Original Message-----
From: marlynt@ibm.net [mailto:marlynt@ibm.net]
Sent: Sunday, January 24, 1999 5:40 PM
To: restoration@oilspill.state.ak.us
Subject: Objection to creating an endowment for the University of Alaska

Dear EVOS Trustees,

I wish to register my strong objection to the proposal currently being advanced by the University of Alaska to use EVOS environmental restoration funds to create an endowment for the University.

I object for the following reasons:

1. The settlement was intended to restore the environment, not to support government and quasi-government agencies. It is a particularly unconscionable proposal to spend EVOS money to fund a the University of Alaska, which presumably has access to funds from the State's vast oil revenues and savings, which now account for over $24 billion dollars, and increase by at least a billion per year.

2. There is currently not enough money in the settlement fund to protect all the threatened habitat in the spill area. That primary need should supercede all others.

3. Research that aids in restoration should only be paid for on an as needed basis, as your system currently operates. The current system, overseen and peer-reviewed by capable experts, has virtually eliminated the abuses which brought so much criticism to the EVOS trustees in the first two years of your operations.

4. Extensive investment in University of Alaska research in the years immediately following the oil spill resulted in a very poor return of published, peer-reviewed research per dollar spent, relative to the other research entities. If any scientific research endowment were to be created, University of Alaska should be ranked last, well behind NMFS, the Alaska Dept. of Fish and Game, and the US Fish and Wildlife Service, if past performance or current capability or any other reasonable measure of capacity were applied.

I urge you to resist the continued attempts by the University of Alaska to swallow up funds that were dedicated to righting a great wrong. As we approach the ten-year anniversary of the spill, and the world prepares to revisit what has been done, please do not besmirch your otherwise exemplary record by wasting what remains of the precious restoration funds.

Thank you for considering my concerns.

Steven E. Kallick
2323 Belmont Avenue
Ardmore, PA 19003
(610) 642-2145

4207 r

VALDEZ NATIVE TRIBE

P. O. BOX 1108
VALDEZ, ALASKA 99686

PHONE: (907) 835-4951
FAX: (907) 835-5589

January 24, 1999

Exxon Valdez Oil Spill Trustee Council
645 G Street, Suite 401
Anchorage, Alaska 99501-3451

Dear Trustee Council Members:

The Valdez Native Tribe has a monthly average of 398 Alaska Native and American Indian beneficiaries living within the Valdez community. As a non-profit organization, we request that $20 million of the Exxon Valdez Oil Spill (EVOS) Restoration Reserve Fund, be set aside to further investigate and perpetuate post EVOS oil impacted Native community project ideas that have not received attention, because of the insurmountable pressure from special interest groups.

We would like to expound on our Mission Statement that says:

> *"The Valdez Native Tribe is the Tribal organization of the Native community of Valdez, Alaska, created to promote the unity, self-determination, and empowerment of the Alaska Native and American beneficiaries residing in the Valdez, Alaska area by providing services that will strengthen, increase opportunities, and enhance the mental, physical, spiritual well-being of our people, in harmony with our land and traditional values."*

With the Oil Impacted Native Communities having their own concerns, some communities have not had fair attention. As we enter into the next millennium, it is imperative that the Trustee Council honor and give serious consideration, with respect to this idea. The Valdez Native Tribe's suggestions to the EVOS Trustee Council are, if nothing else, to consider the terms *"Stewardship"* and *"Long Term Monitoring"*, with respect to "Participation", "Interaction" and most importantly recognized each Native community's cultural identity to the natural environment. Native communities are unique in their own way, and we should have the same rights to "Stewardship" as our Elders had before us.

Elder education to the younger generations, through traditional, cultural and environmental teachings has always existed. As a Native Community, we need the opportunity to assist in "*observations, data collection, surveys, monitoring, co-management and archaeological stewardship*". These are just a few ideas in which the Valdez Native Tribe recognizes as being significant. Where more native participatory responsibilities should have been thought upon or conducted by researchers, have been overlooked for the past ten years.

The Valdez Native Tribe continues to feel the stigmatism of the 1989 Oil Spill, although we recognize and commend all efforts that have been done by the Exxon Valdez Oil Spill Trustee Council to enhance the other Oil Spill Affected community projects.

Respectfully,

Benna Mae Hughey

Benna Mae Hughey
President

4208 ✓

Eric Myers

From: Sandra Schubert [sandra_schubert@oilspill.state.ak.us]
Sent: Sunday, January 25, 2099 9:34 AM
To: Eric Myers
Subject: habitat protection

I received a voice mail this morning that you may want to follow up on.

Anna Young, (808) 939-7522

Would like the TC to buy the timber rights on the lands recently transferred to Port Graham (would this be English Bay Corp?) within Kenai Fjords National Park. She's aware PG doesn't want to sell the land, but thinks it's worth pursuing timber only.

She apologized for being late with her "proposal", and wanted to know if it was "too late to enter this proposal". Perhaps she's referring to having missed last week's TC meeting -- ??

Sandra Schubert
EVOS Trustee Council
645 G Street, Suite 401
Anchorage, AK 99501
Phone (907) 278-8012
Fax (907) 276-7178
E-mail sandra_schubert@oilspill.state.ak.us

KODIAK LEGISLATIVE OFFICE
112 MILL BAY RD
KODIAK, AK 99615-6431
Phone: (907)486-8116 **Fax:** (907)486-5264

FAX COVER SHEET

Date: 1-28-99

TO: Molly

Fax Number: (907) 276-7178

Number of pages to follow: 1

Testimony brought in from
Julie ~~B~~ Robertson
614 Hillside
Kodiak, AK 99615
907-486-4800

Fax did not go through on night of teleconference 1/21/99. She brought it back in today to re-fax.

JAN-28-99 THU 03:55 PM KOD LIO FAX NO. 2 4209

1.22.99

My name is Julie Robertson & I am testifying on behalf of myself.

The best way to preserve resources is to actually purchase parcels and or conservation easements. This makes these areas available to the public. Research is a nec. component in env. health, esp. in the monitoring watchdogging mode, but can also be a bottomless pit. Even after research is done, the env. is still vulnerable to exploitation. By permanently locking up areas by purchasing them or acquiring easements they are protected for future use, enjoyment and the health of their animals fish stocks and many things perhaps even yet undiscovered.

I also feel the best way to protect areas is to make them accessible to the people.

I urge the council to continue with the habitat protection program by allocating a large majority to land/easement acquisition.

I am a commercial fisherman in Alaska - have been for the last 14 years. I live in Kodiak but have been fishing in Southeast for the last 3 years. I am astonished at all the wonderful accesses trails (well developed with bridges boardwalks & stairs) that exist down there. I would like to see more areas put into use like this in Kodiak, esp. near the road system not just in areas that those who can afford to charter planes get to see. Thank You.

Julie Robertson 614 Hillside Kodiak AK 99615

Dear Mr. Craig Tillery, 1/25/99

This is just a short letter to let your office know that I fully support the efforts to use the largest percentage of the Restoration Reserve Fund as a habitat reserve fund. It is my fervent belief that the long-term protection of habitat (De facto wild lands as well as sensitive private conservation easements) is and always will be the highest and best use of the available funds. I'm a resident of the Lower Kenai Peninsula, living in a time of profound change - a time of population growth here and development there. Only the monetary acquisition of coastal and watershed sensitive lands will buffer the aforementioned growth/development pressures. To have a Reserve Fund is an awesome opportunity - It can shape the very nature of our relationship with the natural world and I believe can bring about in some small way a more intuitive sense of place - only habitat can do this. Sincerely,

M.J. Kliemann

Mitch James Kliemann
P.O. Box 15163
Fritz Creek, Alaska
99603

3607 dup 2

Alaska SeaLife Center
windows to the sea

RECEIVED
FEB 1 1999

EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL

January 25, 1999

Exxon Valdez Trustee Council
645 G Street, Room 401
Anchorage, AK 99501-3451

RE: Comments on 1) changes to the Injured Resources list, and 2) potential uses of the Restoration Reserve

The Alaska SeaLife Center (ASLC), a non-profit organization dedicated to *understanding and maintaining the integrity of the marine ecosystem of Alaska through research, rehabilitation and public education* wishes to provide comments on 1) proposed changes to the Injured Resources list, and 2) potential uses of the Restoration Reserve. The ASLC especially appreciates the opportunity it has been given by the Trustee Council to support important research involving resources injured by the *Exxon Valdez* oil spill (EVOS), and to help inform and educate some 200,000 visitors per year about the EVOS and the work of the Trustee Council.

1. Changes to Injured Resources List

Scientists working at the Center are currently engaged in Trustee Council funded research related to the recovery of river otters, harbor seals, pigeon guillemots, pink salmon, and rockfish. Although these studies are not yet concluded, preliminary findings appear to be consistent with the status assessments for these species contained in the January 1999 Update on Injured Resources and Services.

2. Restoration Reserve

The Trustee Council has the unique opportunity to help ensure the health of Alaska's marine ecosystems into the next millennium. The Habitat Protection Program and Restoration Studies Program have laid a solid foundation for moving forward with the Restoration Reserve.

The first prerequisite for maintaining a healthy ecosystem, to protect critical fish and wildlife habitat, has been largely accomplished. Nearly all of the high value large parcels at risk that were identified through the Trustee Council's habitat evaluation process have been protected. There may be a need for protecting additional small parcels on a case-by-case basis, but acquisitions of large parcels with lower habitat values are unlikely to significantly protect populations of marine resources at risk.

The second prerequisite to maintaining a healthy ecosystem, to gain a sufficient level of knowledge needed to understand and manage our living marine resources, has just begun. Progress is being made. But, when we see: 1) the current fisheries crisis in Bristol Bay; 2) the growing number of Alaska's marine wildlife being listed as Endangered or Threatened; 3) the fundamental uncertainties in the management of many groundfish and shellfish stocks; and 4) the near certainty of global warming and climate change, we have to be compelled by the urgent need for more research effort. Alaska spans two oceans, provides most of the United States' fishery harvest, and has over 30,000 miles of coastline, yet state and Federal research funding lags far behind many states with fewer resources. We probably have less information about our living marine resources than any other coastal state.

Properly coordinated and sustained scientific monitoring and research is needed if we are to have any hope of maintaining our marine resources at the levels we need in the next millennium. We cannot afford to continue past practices of conducting research by crisis, after it is too late to understand or head off a problem. Alaskans

know how to conduct good marine research and how to apply the results to management; we just need the leadership and a sustained focus to accomplish it.

The Restoration Reserve provides a once-in-a-lifetime opportunity to leave a legacy for marine research in Alaska that will pay dividends to all stakeholders. More complete knowledge and the ability to apply it proactively are needed to maintain the integrity of Alaska's marine ecosystem. I strongly urge the Trustee Council to designate at least 90% of the Restoration Reserve to support a permanent, adaptive, interdisciplinary monitoring and research program in the Gulf of Alaska. I further urge that the Trustee Council's research program be integrated with other marine research programs in Alaska, such as those being formulated for the Bering Sea.

Thank you for the opportunity to comment.

Sincerely,

Kim Sundberg
Executive Director

2141 v January 29, 1999

Craig Tillery
645 G. St. 401
Anchorage -

Dear Mr. Tillery,

Not as a resident, but as the parent and grandparent of residents of Homer, I write to you on the matter of the funds of the Restoration Reserve from the Exxon Valdez oil spill disaster.

I am a resident of Leelanau County, Michigan; one of the fastest growing areas, in the lower forty-eight, for retirement living, second-homes, speculation housing, casinos, and all the accompanying service providers — from concrete mixers to chimney sweeps.

We support & volunteer for the Leelanau Conservancy, a land preservation group. We use lawyers to arrange for purchase or gift of conservation easements and have been able to stop development on unique & wild lands.

We are saving areas on the migratory bird flyway as well as saving growth on lands containing plants on the endangered or threatened plants lists.

Simply put, I hope you and the Council will consider allocating monies from the fund for the purchase of conservation easements - and/or set up the legal mechanism for owners to donate development rights to a Conservancy or Land Trust, in perpetuity. In Michigan, this generates a considerable property tax reduction for the owners. Incidentally.

I'm sure it is difficult to see the possible population crunch coming to the vast lands in the oil spill area, but land protection, now, as part of a balanced program, would ensure habitat for the animal & vegetable Kingdoms over which humankind has so much power.

Sincerely,

Barbara (& Ed Reinert)

216 v

Arliss Sturgulewski
3301 "C" Street, Suite 520
Anchorage, Alaska 99503
(907) 561-5286
(907) 561-7683 (FAX)

February 2, 1999

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 G Street, #401
Anchorage, Alaska 99501

Dear Council Members:

I understand that at your March 1, 1999 meeting you are considering the dollar allocation for the long-term use of the Restoration Reserve. You are to be congratulated for your past efforts in establishing and protecting this Restoration Reserve.

As I have indicated in the past, I strongly support utilizing the major portion of the $140-$150 million dollar reserve to fund a long-term interdisciplinary research and monitoring program. In order to insure the wise long-term management and conservation of the marine environment on and off the shores of Alaska, such a program is vital.

Increased activity in developing a unified research plan for the Bering Sea and the North Pacific is underway with the possibility of a fund (Dinkum Sands) to provide on-going support. How fortunate for the people of Alaska and the United States to see a potential cooperative effort between the Bering Sea/North Pacific and EVOS area research efforts. What a magnificent result of the tragic event of the oil spill.

The staff work done to develop the Gulf Ecosystem Monitoring Program (GEM) is exemplary. I agree with the proposed mission statement as well as the establishment of a perpetual, inflation-proofed endowment, from which earnings would support long-term monitoring and research in the EVOS area and adjacent northern Gulf of Alaska.

Although it may not be timely to discuss the issues of governance and administration at this time, I do support the GEM approach. Key in representation on a new board is to involve stockholders, Federal and State natural resources agencies, and the scientific community. A scientific peer review panel is imperative. You have learned a great deal during the EVOS process in working to transmit to and gain information from communities. This educational effort must continue and be enhanced.

You have made extraordinary purchases of land to enhance the long-term health of the many affected resources. A small fund of $10-$15 million for small parcel acquisitions makes sense. However, I strongly support the major portion of the $140-$150 million to be placed in a perpetual inflation-proofed endowment for research and monitoring. Thank you for the good work you have done to rehabilitate, protect and enhance the marine environment on and off shore of the spill area.

Sincerely,

Arliss Sturgulewski

Arliss Sturgulewski

Jan 29 1999

To CRAIG TILLERY -

I would like to see the Remainder of The 140 million Dollar Restoration Reserve Fund Allocated To Protecting Habitat in Prince William Sound Through the Purchasing of Conservation Easements and other Large Land Aquisitions. Iid Like the Disaster Zone spill Boundaries enlarged To Include The Copper River Delta and the Bearing River uplands. The Copper River stock of Wild Chinook Salmon is Vital to the Survival of CORDOVAS Economy, As is the Bering River Fisheries. I would Also Like to see the council Purchase subsurFace LAND Rights in the Bering River Region To Prevent Coal and oil extraction in that extremely sensitive Region.

Signed,

Scott Metzger

PO BOX
999
Cordova AK 99574

MARINE ADVISORY PROGRAM

UNIVERSITY OF ALASKA

Need information on Alaska's seas and coasts? The **Alaska Sea Grant Marine Advisory Program** (MAP) faculty and staff will be happy to provide or help you find information on just about anything that has to do with Alaska's coastal and marine resources. MAP is the primary public service component of the Alaska Sea Grant College Program, and the **School of Fisheries and Ocean Sciences** located at the University of Alaska Fairbanks.

- The big picture: Program overview
- **The focus:** Goals and objectives
- The people: Marine Advisory Agents and Specialists
- **Marine Advisory Workshops**
- Marine Advisory Photo Gallery
- **"Boatkeeper"** series on vessel maintenance

- **HACCP Alaska Training**

For more information, contact:

Alaska Sea Grant Marine Advisory Program
Dr. Donald E. Kramer, Chair
2221 E. Northern Lights Blvd., Suite 110
Anchorage, Alaska 99508-4140

Telephone: (907) 274-9691 ~ Fax: (907) 277-5242
E-mail: AYMAP@uaa.alaska.edu

http://hess.ims.uaf.edu:8000/MAP/MAP_home.html

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MARINE ADVISORY PROGRAM

UNIVERSITY OF ALASKA

MAP: Focus

------ Goals and Objectives ------

The goal of the University of Alaska Marine Advisory Program is to assist in the wise development, utilization, and enjoyment of Alaska's marine resources without detrimental impact on the resources.

The educational activities of the Marine Advisory Program are governed by policies and objectives of the University of Alaska public service programs. These objectives are to impart educational and cultural information and to provide communication channels through which the university system may best serve as an intellectual, scientific, and cultural resource to Alaskans.

The following general objectives and procedures have been established.

- Aid in the development of leadership in maritime areas and affairs.
- Provide liaison between the University and maritime communities to transfer the problems and needs of the maritime public to researchers and academicians. Stimulate researchers to answer these needs.
- Provide technical information to harvesters, developers, and users of marine resources, including information on the development of new technologies as well as new applications of existing technologies to marine problems.
- Develop public awareness of marine resource management and conservation and provide assistance in solving multiple-use conflicts.
- Promote understanding between marine resource users and marine resource managers.
- Provide information and assistance to coastal communities on problems of coastal stabilization, coastal zone management, and development of port facilities.
- Provide continuing marine safety education to the maritime public.
- Aid in the development of marine awareness programs specifically for communities and their schools.
- Assist in the development of a unified Sea Grant program of research and extension in Alaska which addresses both regional and national needs.

MAP home page | SFOS homepage

MARINE ADVISORY PROGRAM

UNIVERSITY OF ALASKA

Program Overview

The Marine Advisory Program (MAP) is part of the University of Alaska Fairbanks School of Fisheries and Ocean Sciences. MAP is funded by the State of Alaska and by the National Sea Grant College Program, which is a research, education, and outreach program in the U.S. Department of Commerce, National Oceanic and Atmospheric Administration. As such, MAP is often referred to as the Alaska Sea Grant Marine Advisory Program.

MAP responds to the needs of marine resource users through technical assistance to individuals and businesses that derive their livelihood from the sea. MAP also provides information to state and local government agencies and other public organizations whose decisions affect the sea and its use.

The University of Alaska Marine Advisory Program is organized into nine missions.

1. **Management**
   Overall program management, coordination of specialist-agent interaction, and program evaluation.

2. **Response**
   Monitoring of information requests, publication of the Alaska's Marine Resources news magazine, use of trade journals and local media to distribute marine resource information, video production, and marketing.

3. **Fisheries Resources**
   Conservation and management of fisheries resources, use of nontraditional species, subsistence fisheries, and bycatch reduction.

4. **Marine Safety**
   Coast Guard-approved safety training for commercial fishermen through statewide instructor network, and evaluation of safety needs and resources for other marine users.

5. **Marine Business Assistance**
   Fisheries economic impact, tax preparation, harbor management, processing management, and fishing financial analysis.

6. **Seafood Technology**
   Fish quality education, seafood safety, waste utilization, processing plant worker training, and Hazard Analysis and Critical Control Point (HACCP) procedures for Alaskan processors.

7. **Aquaculture**
   Shellfish aquaculture, aquaculture site selection, aquaculture permitting process, and shellfish hatchery feasibility.

8. **Marine Recreation**
   Charterboat safety, use of sport-caught fish, small community tourism, and charter operator licensing.

9. **Marine Mammals**
   Mitigation of marine mammal-commercial fishing interactions; educational programs about marine mammal biology, conservation, and identification; and liaison between marine resource users and marine mammal management agencies.

Why did we choose those missions?

Because commercial fishing is Alaska's largest private industry and because the industry provides the principal, if not the only, economic base for most coastal communities, assistance to the commercial fishing industry has been and continues to be a major focus for the Marine Advisory Program.

The MAP efforts in marine business assistance and seafood technology are primarily concerned with the needs of the commercial fishing industry, as is the fisheries resources mission, which focuses on fisheries utilization and management.

Commercial fishing safety is a critical issue because increased and more efficient effort from fishermen has resulted in restriction of fishing time by resource managers, resulting in short "pulse" fisheries where greater risks are taken at the expense of safety. The upswing in recreational fishing and sightseeing puts more boats on the water, which in many cases are operated by inexperienced people.

Marine transportation, nearshore and offshore mining operations, and prospecting and drilling for oil have potential impacts of great concern to traditional and future marine users. Water quality deterioration, sedimentation, and other critical habitat impacts of the coastal region can affect all other marine users.

The need for up-to-date technical information by Alaska's marine users is compounded by their geographic isolation. More time is required to introduce new ideas and modern technology in the remote areas of Alaska than in the contiguous 48 states because of logistics and communication problems. The widely distributed staff of the Marine Advisory Program can respond in a timely manner to requests for technical assistance, and is often the only source of such services.

The products of university, state, federal, and private research must be made available as soon as possible if Alaska marine users are to make wise decisions on the use, development, and conservation of marine and coastal resources. A well-rounded, broad-based, and responsive Marine Advisory Program acting in cooperation with local, state, federal, and private marine-oriented groups, disseminates ideas, methods, and technical knowledge from the research and development process through to the point of application.

MAP home page | SFOS homepage

MARINE ADVISORY PROGRAM

UNIVERSITY OF ALASKA

MAP: The People

------ Marine Advisory Agents and Specialists ------

Marine Advisory Program personnel are University of Alaska Fairbanks faculty and staff who help industry, government, and private citizens understand and wisely use Alaska's marine and coastal resources.

The program has specialists in aquaculture, business management, fisheries, seafood technology, seafood quality, instructional media production, and marine mammals. Information on these subjects is available in publications and videos produced by the Alaska Sea Grant College Program.

MAP offices are gateways to the wealth of knowledge available throughout the University of Alaska system and to other credible sources of useful information. MAP field agents and specialists are located in Anchorage, Bethel, Cordova, Dillingham, Homer, Kodiak, Petersburg, and Sitka. Headquarters are in Anchorage.

For contact information for any of the agents listed below, please refer to our Sea Grant Staff Directory.

Donald Kramer, Chairman, Anchorage

Liz Brown, Sitka
Chuck Crapo, Kodiak
Dolly Garza, Sitka
Terry Johnson, Dillingham
Deborah Mercy, Anchorage
Brian Paust, Petersburg
Ray RaLonde, Anchorage
Rick Steiner, Anchorage
Gerri Hoffman Sumpter, Bethel
Kate Wynne, Kodiak

MAP home page | Alaska Sea Grant home page | SFOS home page

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The URL for this page is http://www.sfos.uaf.edu:8000/MAP_People.html

The Marine Advisory Program

Donald E. Kramer, Program Chairman
afdek@uaa.alaska.edu

The UAF Marine Advisory Program is a team of specialists and agents that provides statewide informal marine education. MAP serves as a link between the university and marine resource users, develops public awareness of resource management and conservation, and transfers new technology to those who use it. The program has the ability to assess developing situations and to respond to requests for assistance from the public. MAP concentrates on several areas of information dissemination. The following is a sampling of recent activities.

Education

- *Alaska's Marine Resources* published with articles on subjects such as the Marine Mammal Protection Act, paralytic shellfish poisoning, and charter boat operation
- Six television programs produced, offering a forum for discussion topics such as the Arctic National Wildlife Refuge, subsistence, and Alaska's salmon markets
- Seafood quality programs produced with support from the Alaska Seafood Marketing Institute

Photo by Terry Johnson

Students in a Marine Advisory fisheries class unload a float plane at Togiak Lake at the start of a six-day raft trip to study fisheries resources on the Togiak River

- Production of videotape *In Jeopardy: The Steller Sea Lion*, in cooperation with the Alaska Department of Fish and Game
- Pacific Rim fisheries course taught at UAF
- Agents visited the Kamchatka Peninsula in Russia, to solicit cooperation with fishing industry officials on the Russian side
- Rural student fisheries education and internship pilot project initiated
- Instruction of high school students and teachers in inventory methods for freshwater habitats of juvenile salmon
- Statewide teacher training Sea/River Week workshop at Cordova
- Conducted conferences on paralytic shellfish poisoning, resulting in identification of areas of greatest concern and potential to cause human illness. Identified need for state monitoring and certification of beaches safe for shellfish harvest; identified research needs

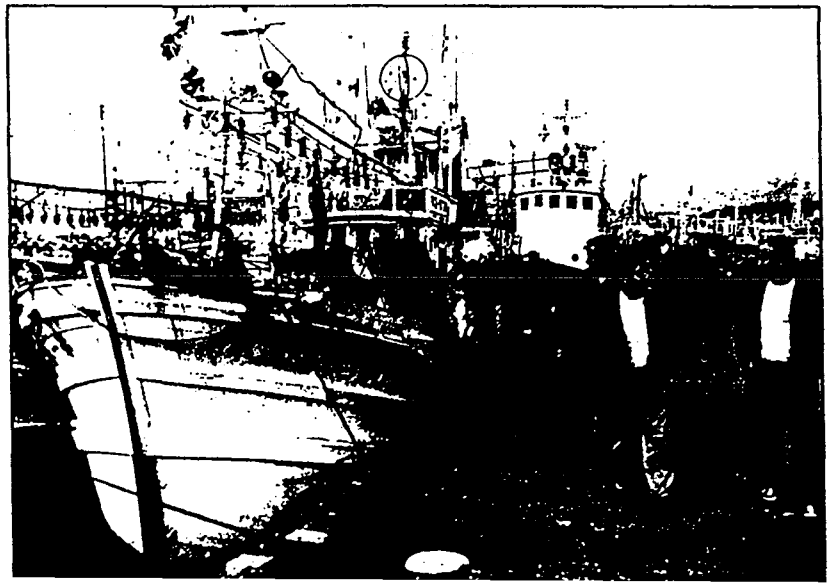


Photo by Terry Johnson

Participants in a MAP-sponsored course on the Japanese seafood industry inspect fishing vessels in the port of Hakodate, Hokkaido

- Well-attended Elderhostel programs hosted in Seward
- Alaska Natives in Science program begun at the request of the Alaska Federation of Natives. MAP provides oversight and advice to the program as well as supporting the creation of the Alaska Natives in Science curriculum that involves both radio spots and publications
- Participation in the creation of a Southeast Alaska-oriented marine web page for the Alaska Native Knowledge Network web site

Fisheries Resources

- Published technical articles in the fishing industry journal *Pacific Fishing*, in a service feature called "Boatkeeper," intended to help vessel operators keep up with changes in technology and perform effective vessel maintenance
- Worked with local fishermen to initiate several new dive fisheries for geoduck, sea cucumber, and red and green sea urchins in Southeast Alaska
- Participated in a federal subsistence advisory council, providing technical and policy input on regional issues
- Developed a subsistence slide show to educate the public on the uses and values of marine resources to rural and Native residents
- Made trips to Sakhalin Islands and the Kuril Islands in the Russian Far East to work with fishing companies there. The visits were structured as technical assistance and workshops by agents who had an opportunity to observe the Russian industry and report back on the status, developments and opportunities for Americans. In part as a result of those visits, some American equipment manufacturers realized sales exceeding a million dollars
- Contributed to the writing of the *Alaska Fisherman's Direct Marketing Manual*, published in 1996 by the Alaska Department of Commerce and Economic Development and sponsored by the Alaska Seafood Marketing Institute. The 100-page report is in its second printing
- Produced *Trouble in the Bering Sea*, a one-hour television program that aired statewide in December 1996 on the marine ecosystem issue in the Bering Sea
- Produced an *Alaska Resource Issue Forum* television show titled "Alaska, Subsistence Dilemma," which aired statewide in February 1996. Dozens of copies were requested and sent all over the state to a wide variety of recipients
- Acted as advisors to the Prince William Sound Oil Tanker Risk Assessment Project

Marine Business Assistance

A project is under way to determine the impact of commercial fishing on the economy of Southeast Alaska. This effort, under the direction of the Alaska Department of Fish and Game, began in 1996 and will be completed at the end of 1998. MAP's business management specialist was instrumental in developing spending pattern surveys of fishermen and processors. The primary responsibility, however, has been economic impact analysis that entails a lengthy process of converting general cost data from surveys into spending pattern profiles for fishing and processing operations. The final report, and even the preliminary drafts, are eagerly awaited by fishing and processing associations, fisheries management agencies (including ADF&G), and legislators. The project results will be an important tool in helping shape fisheries policy and fisheries development decisions.

Seafood Technology

- The MAP seafood quality specialist provided "Just in Time" Training Sessions for the Alaska Seafood Industry. Over 1,000 seafood plant managers, foremen, and workers were trained in proper handling and processing of salmon. Workshops were held at seafood plants located in Bristol Bay, Kodiak, Kenai Peninsula, Prince William Sound, Southeast Alaska, and the Yukon River.

Photo by Kurt Byers

Marine Advisory Program aquaculture specialist Ray RaLonde, left, conducts a salmon habitat assessment workshop for teachers at Chena Hot Springs. At right is Alaska Department of Fish and Game biologist Fritz Kraus, who complements RaLonde's workshop with one on salmon ecology and biology. RaLonde and Kraus's clinics are part of a teacher training workshop in the Cooperative Extension 4-H Fisheries, Natural Resource, and Youth Development Program. This multiple partnership among university units and a government agency is a prime example of how SFOS faculty and staff unite with others to serve Alaskans.

Photo by Terry Johnson

Cold–but apparently happy–students in a marine mammals class huddle against wind and rain on a field trip to Round Island in Bristol Bay. The class was taught by the Dillingham Marine Advisory Program agent.

- Four videos on maintaining seafood quality were completed. These videos provide information directed specifically to fishermen, processors, canners, and retailers.
- Twenty-five small processors throughout the state were given technical assistance. They were helped to solve technical problems and helped with nutritional labeling issues, conducting shelf life studies, and determining product safety. Among the products successfully developed were smoked salmon in jars, dried products, spreads, salmon jerky, and sausages. Demonstration projects for utilization of bycatch and late-harvest pink and chum salmon were completed.
- SFOS industry training efforts are part of a national seafood processing safety training program that won the Hammer Excellence Award presented by Vice President Al Gore in 1997.

Aquaculture

Technical assistance for the aquaculture industry remains a dominant part of the aquaculture mission. In addition to classes and workshops, a number of publications were produced. MAP personnel planned and co-sponsored two aquaculture conferences, one focused on paralytic shellfish poisoning and the other on the public issues involved in shellfish culture.

Marine Recreation

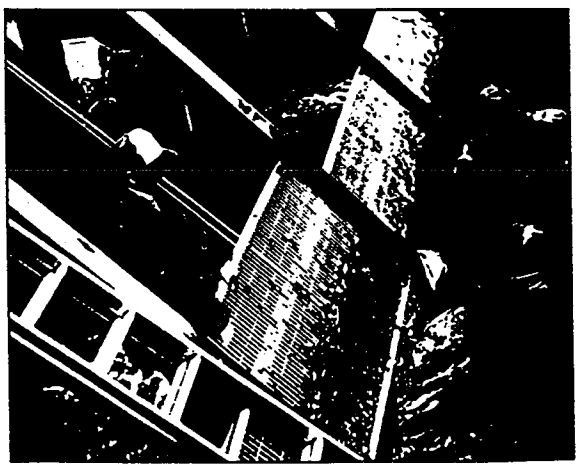
In the past few years, MAP has worked to help the rapidly expanding charter boat industry. MAP has also assisted communities and individuals wishing to evaluate their opportunities to develop tourism products and has helped develop and implement ecotourism training programs. In the past three years, the Bristol Bay agent has helped more than 40 people to qualify for charter operator licenses on rivers of western Alaska.

Marine Mammals

MAP has provided access to valuable marine mammal tissue samples from stranded marine mammals and has trained federal observers to collect accurate marine mammal sightings and bycatch data. The marine mammal specialist has conducted a variety of marine mammal abundance surveys and helped in the research efforts of the Alaska Department of Fish and Game and the National Marine Fisheries Service. MAP has also played a fundamental role in developing the technical materials, training, and logistic infrastructure for harbor seal and sea otter tissue sampling efforts that provide researchers access to biological samples. These efforts also offer co-management opportunities and incorporate hands-on science into village schools.

Two MAP agents have worked with Native co-management authorities and federal agencies to implement marine mammal research projects; they also help in developing local and regional sea otter management plans and provide technical and policy input.

MAP agents and the marine mammal specialist disseminate both general and technical information through formal courses, lectures, and print media.



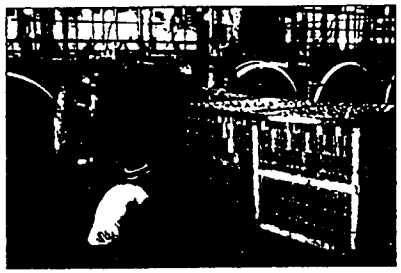
Andy Gray, a Fisheries Division research associate, assists John Joyce of the National Marine Fisheries Services (NMFS) Auke Bay Laboratory as he removes the weir at Auke Creek for the winter. Juneau Center, School of Fisheries and Ocean Sciences photo

MARINE ADVISORY PROGRAM

A major goal of the University of Alaska Fairbanks School of Fisheries and Ocean Sciences (SFOS) is to transfer the results of research conducted on Alaska's marine resources to people who need the information. This is accomplished primarily through the SFOS Sea Grant Marine Advisory Program (MAP).

MAP consists of field agents and specialists who are direct links between the University of Alaska Fairbanks and users of Alaska's marine resources. They transfer useful results of university research and other helpful information to many groups and individuals through publications, workshops, courses, and direct consultation. The primary audiences are commercial fishermen; seafood processors, shippers, and marketers; fisheries managers; community planners; and others interested in the wise use and conservation of Alaska's marine resources.

MAP also produces *Alaska's Marine Resources*, a publication that features articles on current marine resource issues. For a free subscription, contact the Anchorage MAP office.



Cannery workers place cans of salmon in the retort for the final stage of processing. (Photo: D. Mercy)

OUTREACH PROGRAMS

Commercial Fisheries Development

The Alaska seafood industry is the state's largest private employer, accounting for over 35,000 jobs. MAP agents provide practical information and technical assistance to develop new fisheries and management processes that benefit seafood producers, processors, and coastal communities.

MAP has helped develop new fisheries for

- shark, hagfish, and octopus in southeast Alaska
- sea urchins in the Kodiak region

Services developed by MAP for processors include

- training supervisors for seafood canning operations
- workshops on salmon handling
- training in white fish processing

Services developed by MAP for communities include

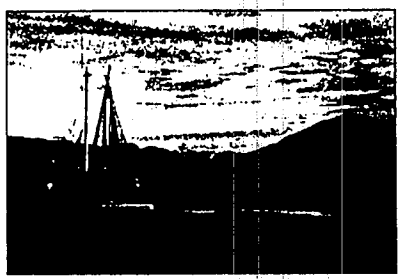
- assistance in developing crab and groundfish observer training programs in Anchorage
- marketing of salmon and rockfish products

Fisheries Business Management

Alaska's billion-dollar commercial fisheries industry competes more effectively in turbulent world markets with the help of economics research conducted by MAP business management specialists. Information is available on business management topics including

- budgets and record-keeping
- break-even analysis
- financial statements
- cash management
- loan options
- business taxes
- retirement planning
- marketing
- income tax preparation

Economics research has focused on the impacts of the fishing industry on Alaska regional economies and on the issue of overcapitalization in the groundfish industry. Recent research has concentrated on foreign and domestic markets for Alaska salmon.



The crew of a purse seiner hauls in a net full of pink salmon. (Photo: D. Kramer)

Aquaculture

Alaska has an extensive aquaculture industry that produces salmon juveniles to enhance the existing Pacific salmon fishery and provides shellfish and seaweed products for the seafood market. MAP specialists support wise development of aquaculture in Alaska by offering educational and technical assistance to state agencies, fish hatcheries, educational institutions, and aquatic farmers. Information is available on

- permit application procedures
- environmental data collection
- quality control of aquaculture procedures
- business management
- product marketing
- computer program adaptation for fish hatchery management

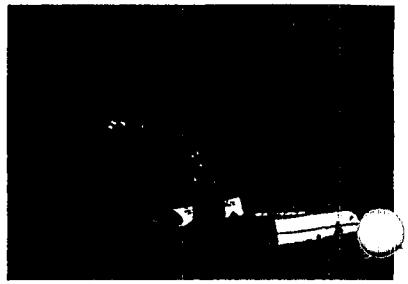
Worker inspects a line of blue mussels at a commercial farming operation in Kachemak Bay. (Photo: R. RaLonde)

Marine Safety

Safety is a major concern for fishermen in Alaska's icy waters. MAP has helped alleviate the problem by developing a marine safety video and textbook series in cooperation with the U.S. Coast Guard. The award-winning "Fisheries Safety and Survival" series has been used by a variety of government agencies and private industries throughout the nation. Topics include

- hypothermia
- cold water near drowning
- sea and shore survival
- marine survival equipment and maintenance
- frostbite and other cold injuries
- small boat safety

MAP personnel also took the lead in developing the Alaska Marine Safety Education Association (AMSEA), a nonprofit, community-based information and training network directed at marine resource users. Since 1985, the AMSEA instructor network has provided marine safety and survival training to over 20,000 fishermen and boaters from Alaska and elsewhere. The AMSEA model has been adopted for use in other states.



MAP agent demonstrates the use of a flare during a marine safety demonstration. (Photo: D. Mercy)

Seafood Technology

Maintaining Alaska's status as a major global producer of seafood requires commercial fishermen and seafood processors to keep up with technological developments. MAP seafood technology specialists bring fishermen and processors the latest technical innovations in the handling, processing, storage, and shipping of fish and shellfish. Recent work has focused on improving seafood quality. Courses and workshops are offered on topics such as

- halibut handling
- shelf-life extension methods
- fish chilling methods
- seafood quality for fishermen and processors
- seafood plant sanitation
- safety of smoked fish products
- vacuum-packaging technology

MAP specialists work closely with personnel from the SFOS Fishery Industrial Technology Center (FITC) in Kodiak to communicate the needs of resource users and to transfer the results of FITC research back to the user groups. Current areas of research include new uses for seafood wastes and the development of environmentally safe methods for disposal of unusable seafood-processing waste.

Marine Recreation

Alaska's 34,000-mile coastline offers enormous potential for development of marine recreational activities. Recognizing the need to diversify their economies, many rural Alaska communities are considering tourism as a renewable, non-polluting way to increase jobs and income. MAP agents have provided

educational and technical support to the developing marine recreation industry by publishing an industry newsletter, the *Charter Log*, and presenting workshops and lectures on topics such as

- charter boat marketing and safety
- Coast Guard requirements for charter boats
- promoting special events and festivals
- local impacts of the visitor industry

Other projects include a program called Tourism Outreach using University Research and Service (TOURS), begun in 1990, that involves a team of University of Alaska faculty who visit Alaska communities to assess their visitor industry potential.

Commercial fishing and tourism vessels share the Homer harbor with recreational boats. Approximately 1,000 boats occupy the harbor daily in the summer months, decreasing to half that number during the winter. (Photo: D. Mercy)

MAP OFFICE LOCATIONS

The main office of the Marine Advisory Program is located in Anchorage, with regional offices in Bethel, [redacted], Dillingham, Homer, Kodiak, [redacted], Petersburg, [redacted] and Sitka.

The Marine Advisory Program is part of the University of Alaska Fairbanks School of Fisheries and Ocean Sciences and is funded by the State of Alaska and the National Sea Grant College Program.

ADMINISTRATION

Vera Alexander, Ph.D., Dean, SFOS
Albert Tyler, Ph.D., Associate Dean, SFOS
Donald E. Kramer, Ph.D., Chairman, MAP
Ronald K. Dearborn, M.S., Director, Alaska Sea Grant College Program

FACULTY AND STAFF

D. Douglas Coughenower, M.S., Associate Professor, Assistant [redacted], Kodiak. Commercial and recreational fisheries, [redacted], marine safety, fisheries oceanography. Retired

Charles A. Crapo, M.S., Assistant Professor, Kodiak. Seafood technology, seafood quality, quality assurance, seafood processing and preservation.

John P. Doyle, B.S., Professor, Anchorage. Interpretation and dissemination of [redacted] results and maritime affairs information. Retired

Dolores A. Garza, M.S., Assistant Professor, Sitka. Fishery business development, sea and shore survival, marine mammal management, aquaculture development.

Terry L. Johnson, M.A., Assistant Professor, Dillingham. Commercial fisheries development and technology, fisheries business management and economics, marine safety and survival.

Donald E. Kramer, Ph.D., Professor, Anchorage. Food biochemistry, protein chemistry, post-mortem changes in fish and shellfish, low temperature preservation of seafood.

Deborah A. Mercy, B.F.A., Instructional Media Specialist, Anchorage. Video production, video and still photography, *Alaska's Marine Resources* managing editor.

Brian C. Paust, M.S., Associate Professor, Petersburg. Practical application of fisheries oceanography, commercial fisheries development, shellfish aquaculture, seafood marketing.

Henry M. Pennington, M.S., Assistant Professor, Kodiak. Fisheries [redacted], marine safety, marine science education, coastal resource management. Retired

Raymond L. RaLonde, M.S., Associate Professor, Anchorage. Aquaculture, marine science education, extension and technology transfer, coastal resource management.

Richard G. Steiner, M.S., Associate Professor, Cordova. Commercial fisheries, natural resource education.

Gerene H. Sumpter, Assistant MAP Agent, Bethel. MAP contact, community needs assessment, workshop coordinator, publications distribution.

Craig S. Wiese, M.S., M.B.A., Associate Professor, Associate Chancellor, Anchorage. Financial analysis, business management [redacted] of commercial fisheries. Retired

Kate Wynne, M.S., Research Assistant Professor, Marine Mammal Specialist, Cordova. Marine mammal biology, legal aspects of marine mammal management.

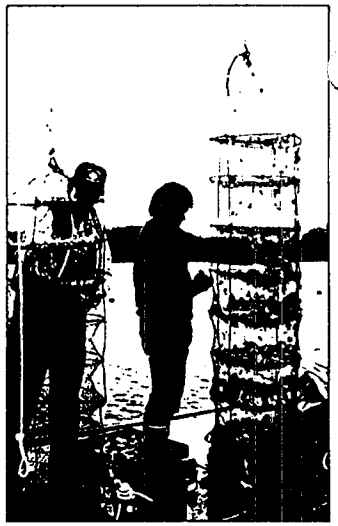
MAP agents bring the problems and needs of the fishing industry and other marine resource users to the attention of researchers who can help solve those problems. The agents interpret and convey the results of this research to resource managers and users.

MAP agent bails hooks on a halibut longliner. (Photo: D. Mercy)

UAF Marine Advisory Program
2221 E. Northern Lights Blvd. #110
Anchorage, Alaska 99508-4140
Phone: (907) 274-9691
Fax: (907) 277-5242

COVER PHOTO: Klawock Heenya Corporation workers clean lantern nets of oysters. (Photo: D. Garza)

MARINE ADVISORY PROGRAM



University of Alaska Fairbanks
School of Fisheries and Ocean Sciences

Steller sea lion joins endangered list; habitat rules hurt Atka mackerel fishery

Continued from Page 10

groundfish fisheries.

Iani also said pollock harvesters in Alaska are going to need to pay more attention to world fish markets. "The pollock fishery much more so than the salmon fishery is a world fishery," he said. "For example, the Russians catch 2 million tons of pollock annually."

Another major factor adding to industry uncertainty is the council's decision in December to set aside huge expanses of the Bering Sea as protected habitat for the Steller sea lions, which recently were designated endangered under the Endangered Species Act. In those areas, pollock fishing is prohibited.

"Nobody knows if it's a cyclical phenomenon or what," said Joe Kyle, a council member and economic development specialist. "It's the nature of the Endangered Species Act that once a finding is made of endangerment, the burden shifts onto the industry to prove that it will not negatively impact the recovery of the animals."

" ... We have to console ourselves that we took an ultra-cautious approach, and the law says we have to be ultra-cautious," Kyle said.

Hyde said the Steller sea lion issue is critical for the future of the commercial fishing industry and the economy in the Aleutian Islands.

"It's already affected the Atka mackerel fishery," he said. "Those boats could have helped make Adak viable as a fishing supply and services center, and those boats aren't going to be there anymore."

Moreover, the restrictions could wipe out some portions of the industry, especially among fishermen with smaller boats just as smaller operators have been virtually wiped out in the old-growth timber areas of Washington and Oregon because of ESA protections for the spotted owl.

Iani said he thinks federal regulators acted to restrict pollock fishing because they couldn't think of anything else to do. However, he believes the government, spurred by environmental groups such as Greenpeace, is prepared to take whatever steps necessary to protect the marine mammals.

"I think the protections will extend into the herring and salmon fisheries. We're helpless because the ESA is so one-sided. To me that's the scariest thing in the future. We're going to have to fish in different areas. The seasons will change; they will close certain areas; and it will drive fishermen further out," he said. "Fish that comes from 130 miles away — whether it's on the Titanic or in a canoe — is not going to be worth buying," Iani said.

ALASKA JOURNAL OF COMMERCE
JANUARY 25, 1999

THE ANCHORAGE DAILY NEWS
JANUARY 25, 1999
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Salmon restoration bid rides on federal funds

By JOHN HUGHES
The Associated Press

WASHINGTON — As Northwest salmon problems head to a new peak, the Clinton administration and Congress want to spend tens of millions of dollars for new state-driven efforts to replenish the icon of the Pacific Northwest.

A White House official said he is optimistic President Clinton will seek new money for salmon restoration efforts in California, Oregon, Washington and Alaska when he unveils his year 2000 budget on Feb. 1.

The official declined to say how much money Clinton will seek.

The governors of Alaska, California, Oregon and Washington requested $200 million a year for six years in a letter to Vice President Al Gore late last year.

The money would be used, along with state and local dollars, in a regional effort to protect waterways, reduce stream sediment and take other steps to protect the precious fish.

The likelihood that Congress will approve the money improved this month when Sen. Slade Gorton, R-Wash., said he will seek $310 million for the state efforts. Gorton's opinion carries weight because he chairs the Senate Appropriations interior subcommittee, which controls billions of dollars in natural

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SALMON RESTORATION BID RIDES ON FEDERAL FUNDS

SALMON: Agency may call 13 more endangered

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resource spending.

State officials say the money is needed because salmon problems in the region are becoming urgent.

The National Marine Fisheries Service, the federal agency charged with maintaining the health of salmon populations, will decide in March whether to list 13 additional Northwest salmon populations as threatened or endangered.

The agency has listed 15 salmon populations since 1991, but most affected less populated areas in the Columbia River Basin.

Some of the new listings would hit densely populated areas like Oregon's Willamette Valley, where three-fourths of the state's population lives, and Washington's Puget Sound region, which includes Seattle.

"We're very concerned that without a major effort and a quality plan ... you're going to have all kinds of restrictions put down on our local economy," said Rep. Norm Dicks, D-Wash.

Dicks and Sen. Patty Murray, D-Wash., have been urging the Clinton administration for months to include dollars for the states in the new spending plan. Dicks said the White House has assured him that at least some of the requested funds will be included in the president's budget.

Meanwhile, the states are moving ahead with their efforts.

Washington state Gov. Gary Locke outlined a salmon plan this past week that would impose local water restrictions, crack down on illegal use of groundwater and require timber harvesters to leave more trees along streams. The governor is seeking $200 million in state and federal funds for that effort.

In Oregon, federal dollars would be used to reduce runoff, build culverts and cut the number of cattle that use streams.

"The state has done a lot. It's committed a lot of money to salmon restoration," said Roy Hemmingway, salmon adviser to Gov. John Kitzhaber. "But this is such an enormous effort to bring the salmon back that the federal participation is really necessary."

Some in Congress might have other ideas.

The House Appropriations energy and water subcommittee last year cut $87 million for Northwest salmon projects, noting that such spending seems to have little effect on fish populations. Northwest lawmakers managed to restore the money but said the subcommittee's point was well-taken.

Northwest electricity rate payers have contributed between $2 billion and $3 billion for salmon-recovery efforts in the Columbia Basin since the early 1980s. The money represents direct spending and revenue lost through power-generation reductions intended to help the fish.

"We have a real challenge convincing a skeptical Congress that is dubious about costly salmon-recovery measures," Gorton told Clinton in a letter this month.

"To be successful, we must change our basic approach" to salmon spending, he said.

Congress and the White House should allow local people, such as those in volunteer groups, to decide how to use such funds, Gorton said.

Murray, Dicks and White House officials say they agree, as long as there is some federal oversight.

Environmental and business groups agreed that giving state and local communities some say over the money might help ensure the effort will work.

"There are an awful lot of good salmon projects that could be done in the field that aren't being done simply because there's not enough money," said Justin Hayes of American Rivers.

Farmers would like compensation of their costs for not operating in buffer areas near streams, said Patrick Batts of the Washington Farm Bureau.

"We know there's going to be a huge societal cost to anything that's going to be done to save salmon," he said. "Our farmers are very frustrated. They're saying, 'Tell us what to do. Tell us what you want, how to pay for it, and we'll do the right thing.'"

THE ANCHORAGE DAILY NEWS
JANUARY 23, 1999

STATE NEWS

Salmon model to be made public

The state Department of Fish and Game will hold public meetings next week to present a model that projects how salmon spawning goals on the Kenai River affect both commercial and sport fishing. The briefings, which begin at 1 p.m. and 7 p.m. Friday at Cook Inlet Aquaculture Association in Kenai, are designed to explain complex upper Cook Inlet fisheries issues as the region prepares for Board of Fish meetings in February in Soldotna. Biologists have developed a model that can predict future runs and harvest amounts based on the amount of fish that are allowed upriver to spawn. The model will be used at the Board of Fish meetings, where board members will decide sport, commercial and personal use salmon allocation.

Dwindling money pinches parks

By JON LITTLE
Daily News Peninsula Bureau

SOLDOTNA — Next summer, campers will have to wade through Tonsina Creek to reach Caines Head Recreation Area near Seward and hikers may need a machete to hack away encroaching grass along a brand-new trail in Kachemak Bay State Park.

A state Division of Parks construction boom is ending and the agency doesn't have the money to maintain what it built, parks officials said.

The agency established two campgrounds, two boat launches and 12 cabins in the past four years just on the Kenai Peninsula, said Chris Degernes, state parks Peninsula superintendent.

Those and many other projects between Prince William Sound and Cook Inlet were funded by roughly $11 million in settlement money and interest from the 1989 Exxon Valdez oil spill. The fund was created to make up for recreation opportunities lost or damaged in areas affected by the spill.

While the money lasted, it paid for handicapped-accessible cabins, trails and sleek boat launches and helped keep state park operations afloat, said Jim Stratton, state parks director.

But Stratton and Degernes say the money has drained away and the division has hit a wall. They foresee no budget increase for the coming year.

"We were gambling when we built them that we'd be able to figure out a way (to pay for maintenance), but it didn't happen," Degernes said.

At Caines Head, storms washed out a brand-new bridge at Tonsina Creek and the agency can't afford to replace it, Degernes said. Visitors who make the effort to reach the campground won't find a ranger there, because the division can't afford to pay one.

In the state park across Kachemak Bay from Homer, the division will let parts of its 52 miles of new trails literally go to seed because it doesn't have the maintenance staff, she said.

Most of the heavy-use parks — such as Deep Creek and Ninilchik River, where salmon-crazed anglers try their luck — will open as usual next summer. But corners will be cut even at some of those more popular areas, Stratton said. And the cutbacks will extend be-

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PARKS: State feels fund pinch

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yond the Kenai Peninsula.

Picnic tables and fire rings may be removed from some campgrounds in the Matanuska-Susitna Borough as the state pulls out staff. Some brochures won't be reprinted.

"The places won't be quite as clean. The toilets won't get cleaned quite as often," Stratton said. "It's that kind of thing as you're struggling with how to balance your budget."

State parks isn't trying to make a political point by closing its lower-demand recreation sites, Stratton said. If his motives were political, he said, he'd close Deep Creek or some other heavily used park.

"The places that are going to get hurt are the little out-of-the-way places that Alaskans know about," he said. "Those are the ones we're just going to walk away from. It's unfortunate, because every park, even if it has five campgrounds in it, is somebody's favorite place to go."

THE PENINSULA CLARION
JANUARY 21, 1999

Oil transportation symposium

A symposium on advances in the safe transportation of oil in Prince William Sound since the 1989 Exxon Valdez oil spill will be held March 21-22 in Valdez. Sponsors include the city of Valdez, Prince William Sound Community College, the U.S. Coast Guard, the Alaska Department of Environmental Conservation, the Prince William Sound Regional Citizens' Advisory Council, and Alyeska Pipeline Service Co./SERVS.

Keynote speakers are Sen. Ted Stevens, R-Alaska, Gov. Tony Knowles and Bob Malone, president, chief executive and chief operating officer of Alyeska Pipeline Service Co. The registration deadline is March 1. For information, call 834-1640.

'Wild-Eyed Alaska' on the Web

Puffins, kittiwakes and other residents of Gull Island in Kachemak Bay come to life on a new World Wide Web site from the Howard Hughes Medical Institute.

The site — www.hhmi.org/alaska —features video footage of animals rarely seen by most American youngsters.

The site was created with footage gathered at the Pratt Museum in Homer. Wild-Eyed Alaska is targeted at elementary school students and anyone else who enjoys nature.

Coast Guard favors use of dispersants in oil spills

Commentary

By Ronald J. Morris

As the current Federal On Scene Coordinator and Captain of the Port for Prince William Sound, I have been involved in debates regarding the use of chemical dispersant application to an oil spill on numerable occasions, most recently in the Spills of National Significance exercise held Sept. 21-23, 1998. A SONS is a rare catastrophic spill where the response overwhelms local resources, affects a broad geographic area or generates high media and political interest. The event scenario which was being responded to during the SONS exercise involved a laden tanker going aground at Middle Point on Montague Island at the south end of Prince William Sound. In excess of 300,000 barrels, or 12,600,000 gallons, of North Slope crude was released and then started to travel through Montague Straits and La Touche Passage in Prince William Sound toward the Gulf of Alaska, Kenai Peninsula, and Kodiak. The potential impact of a spill of such magnitude would be tremendous. To mount an effective response, all available resources must be available, which include alternate technologies such as in situ burning, bioremediation, and dispersant application.

The primary tool in all oil spill response efforts remains mechanical recovery. During the exercise, all available mechanical resources were deployed and engaged and additional mechanical resources were ordered from outside the region. However, from past experience, it is known mechanical recovery is on the average only 20 percent effective. Mechanical recovery equipment is limited by sea conditions, visibility, and oil encounter rates, i.e., if oil doesn't exist in sufficient thickness, the skimmer's effectiveness is reduced.

In order to accomplish Western Alaskans exercise participants, i.e. Kodiak National Wildlife Refuge, Kenai Fjord National Park, and Alaska National Wildlife Refuge, number one priority; "keep the oil off our beaches," dispersant application was proposed and used. Keeping the oil off beaches is very important, as the environmental impact to beaches is very long-term.

The decision to use dispersants is made by the Unified Command, which consists of the Coast United States Coast Guard, Alaska Department of Environmental Conservation and the responsible party. They file a permit application with the Alaska Regional Response Team requesting to apply dispersants. The AKRRT acts as an advisory board to the FOSC. It is comprised of federal, state, and local governmental agencies with means to participate in response to pollution incidents (for more information on the role of the AKRRT, please visit www.AKRRT.org.)

The dispersant application process requires an assessment of the environmental benefits, as well as damages which could be expected as a result of dispersant application to an oil slick. It is important to realize that the water under a spill is already polluted because oil will disperse naturally, albeit slower, without the application of chemical dispersants due to mixing. When oil spills into water, conditions such as wind, water temperature and wave energy affects the oil, causing changes in both its chemical and physical properties; a process collectively known as weathering.

After evaporation, natural dispersion, followed by biodegradation, is the most important process in the breakup and disappearance of a slick. Once weathering has reached a certain stage, usually between 48-96 hours, the effectiveness of chemical dispersants may be reduced. Hence the decision to apply chemical dispersants must be made relatively quickly to gain maximum benefit.

Chemical dispersion of the oil augments the overall clean up effort by enhancing the natural dispersion. Once under the surface, the dispersed oil plume undergoes rapid dilution, thereby facilitating the natural biodegradation processes by creating greater surface area exposure for oil-eating micro-organisms to access the oil. Dispersant application ultimately increases the effectiveness of the response by reducing beach impact, reducing the amount of free-floating oil on the surface where it harms sea birds and mammals, and by making the remaining free-floating oil less adhesive to birds and mammals.

There have been concerns from

the public over the potential carcinogenic effects of dispersants. Scientific studies show the particular dispersants which would most likely be used in this area are not carcinogenic. They may irritate the skin and eyes if a person was to come in close contact with the chemical. However, considering that the current dispersant guidelines do not allow for dispersant application in shallow water and near shorelines, the effect on any human population should be minimal if any at all. To avoid dispersant exposure to responders, they would be well clear of the area where the dispersants are applied.

Prior to being placed on the EPA's National Contingency Plan Product Schedule signifying approval for use in the United States, a dispersant is put through several tests, one of which is effectiveness. Effectiveness measures how well a product breaks up oil into microscopic droplets, which would then be dispersed into the water column. According to a study commissioned by the Prince William Sound RCAC and released in April, 1997, Corexit 9527, a dispersant stockpiled in Prince William Sound, has been shown to be 30 to 95 percent effective on Alaska North Slope crude in laboratory testing. That's supported by corresponding results of 30 to 80 percent effectiveness in sea trials. This demonstrates Corexit 9527 does have the potential to disperse Alaska North Slope Crude to some degree of effectiveness. Further, the same study states greater levels of operational effectiveness will be achieved by repeat applications of dispersants. The same study showed when chemical dispersants are applied, oil is dispersed in tiny droplets through the upper 15-20 feet of the water column. The dispersed droplets do not resurface, but rather distribute throughout the ocean with the aid of strong ocean currents.

Once in the water column, the droplets of dispersed oil are exposed to naturally occurring oil-eating micro organisms. Studies after the Exxon Valdez spill showed that these organisms were common in the waters of Prince William Sound due to the presence of coniferous trees and needles, which contain turpentine oils. The oil-eating microorganisms are well adapted to breaking down the turpentine oils for food and are also capable of degrading crude oil as an additional food source.

This is not to say the process of chemically dispersing oil is without disadvantages. The rapidly diluting cloud of dispersed oil, whether it be from natural or chemical dispersion, is potentially harmful, for a short period of time — hours — to planktonic plants and animals, including planktonic eggs and fish larvae. Dispersed oil could cause mortality to bottom-dwelling species such as clams if dispersants were applied to slicks on shallow water. For this reason, dispersants are currently only applied when sufficient water depth, more than 30 feet, exists to allow for dispersion without bottom

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Dispersants ...

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impact.

The decision to apply dispersants involves making environmental trade offs, keeping net environmental benefit as the goal. The decision is made in conjunction with the AKRRT, scientific advisors, federal and state regulators, the spiller, and the citizens of Alaska. Because of all the issues involved in this decision process, the best time to discuss dispersant application is not during a response, but rather in the planning process when pre-approved zones are determined.

Pre-approval involves defining scenarios where dispersant application is acceptable, where further study is needed, and where dispersant application will not be acceptable.

In Prince William Sound there are a few pre-approved zones for dispersant application. A pre-approved designation means the Unified Command does not have to file an application with the AKRRT as the AKRRT has already granted their approval. In these pre-approved zones, dispersants are an acceptable alternative and could be considered to supplement the mechanical response.

Pre-approval does not mean dispersants will automatically be used, and certainly will not be used in place of mechanical recovery. The same parties that make the final decision during the response should be involved in the planning process.

In March 1998 a two-day International Dispersant conference was held in Anchorage. This conference brought together national and international experts in the field of dispersant study, conservation groups, regulators from both the state and the federal governments, as well as citizens from Prince William Sound communities affected by the Exxon Valdez spill and citizens from the Shetland Islands affected by the Braer spill.

The conference yielded much new information and informative panel discussions. The AKRRT Science and Technology committee has committed to reviewing the current dispersant guidelines and updating them to incorporate the new information presented at the conference. Everyone involved in a spill response has the same goal: mount an effective response while minimizing the environmental impact.

The U.S. Coast Guard supports the use of chemical dispersants to achieve this goal.

U.S. Coast Guard Captain Ronald J. Morris is the current Captain of the Port, Prince William Sound and is the Commanding Officer of the Marine Safety Office in Valdez.

THE CORDOVA TIMES
JANUARY 21, 1999
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COAST GUARD FAVORS USE OF DISPERSANTS IN OIL SPILLS

THE STAR
JANUARY 20, 1999

RCAC Is Recertified...

Oil Watchdog Group Okayed

VALDEZ--The public watchdog agency that monitors the transit of oil through the Alyeska marine terminal and Prince William Sound is back in business for another year.

The US Coast Guard announced last week it had re-certified the Regional Citizens Advisory Council through Jan. 30, 2000.

The agency represents the interests of communities impacted by the Exxon Valdez oil spill of 1989 along with tourism, commercial fishing, aquaculture, recreation and Natives in the spill area.

The re-certification of the RCAC was not a "sure thing" this year. The agency came under sharp criticism from Alyssa and its member companies last fall.

The oil companies complained that RCAC staffers working on oil spill contingency plans were also assisting in lawsuits against the owner companies; that RCAC staffers were too adversarial and difficult to get along with; that a non-resident of Alaska sat on the RCAC board of directors; that one staff member accused Alyeska of criminal intent in trying to break the vapor control regulations.

Even the Coast Guard did not spare the whip. Capt. Ron Morris, the Captain of the Port, complained there was a lack of accountability by the RCAC, a breakdown in trust between the RCAC and the industry, and a conflict of interest on the part of the staff.

The RCAC, said Capt. Morris, was not an ideal model to be replicated in other parts of the country.

Even a long time board member, Keith Gordaoff, resigned in protest, saying the RCAC had lost its bearings and that real authority had shifted from the board of directors to the committees and the staff.

Nevertheless, Rear Admiral R.C. North of the Coast Guard announced last week that the RCAC would be re-certified through Jan. 30, 2000.

He instructed the RCAC to conduct an internal policy and controls audit, and review its policy on the residency of its board members.

John Devens, RCAC executive director, said the council is already at work on both projects. Devens said he was "pleased to note the Coast Guard did not support the allegations made in some of the letters."

The RCAC was a creation of the Oil Pollution Act of 1990 that was enacted by the federal government in the wake of the Exxon Valdez oil spill of 1989.

At 11 million gallons, it remains the nation's largest spill of crude oil.

The RCAC is funded by the oil industry, subject to negotiation. It currently receives $2.1 million annually form the industry. ★

Web sites fill in details about oil spill restoration

Editor's note: It has been eight years since the Exxon Valdez ran aground in Prince William Sound, spilling nearly 11 million gallons of Alaska crude oil. Time has since told quite a lot about the spill's long-term effects. To help tell the story, the Exxon Valdez Oil Spill Trustee Council is providing this column focusing on the ongoing recovery within the spill region.

By JOE HUNT

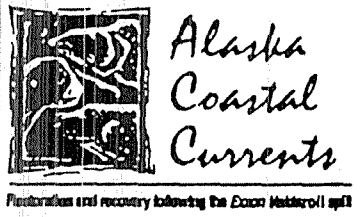
Jack Ward Thomas, former director of the U.S. Forest Service, once said of ecosystems that they are "not simply more complicated than we think. They are more complicated than we can think."

Thankfully, scientists continue the effort. How do wind, sun and snowmelt affect the prevailing currents of Prince William Sound, and how do they combine to impact the tiny plant and animal life that is the base of the food chain?

How does a good plankton bloom provide for and protect emerging salmon fry? Did changing water temperatures force a shift in the small prey fish that seabirds and harbor seals depend on? How does the decline in some species impact people involved in fisheries and subsistence? What happens when a massive amount of spilled oil is added to this natural equation?

Regular readers of Alaska Coastal Currents have been able to learn one small piece at a time answers to some of these questions through the eyes of scientists conducting restoration research and the people living within the spill region.

But where do you turn to find more answers about the spill, its short- and long-term impacts, and the ecosystem knowledge we've gained through spill-related research? Check out the Internet, and you will find a wide variety of Exxon Valdez-related World Wide Web sites.



Restoration and recovery following the Exxon Valdez oil spill

The trustee council has its own Web site (www.oil-spill.state.ak.us) that provides a solid background on most aspects of the spill and the current status of species injured by the spill. You even can listen to a recording of Exxon Valdez Captain Joe Hazelwood reporting the tanker accident to the U.S. Coast Guard if you call up www.alaska.net/~ospic. That's the Web site for the Oil Spill Public Information Center.

The trustee council has invested nearly $40 million in three ecosystem-based research projects known mostly by their acronyms: SEA, NVP and APEX. Each of these multi-year studies have their own Web sites.

The Sound Ecosystem Assessment (SEA) focuses on factors that influence production of pink salmon and Pacific herring in Prince William Sound. The project is providing insights into ocean currents, nutrients, mixing, salinity and temperatures and how these physical factors influence plankton, prey and predators in the food web. The SEA Web site is produced by the Prince William Sound Science Center and can be found at: www.pwssc.gen.ak.us/sea/sea.html.

The Nearshore Vertebrate Predator (NVP) study focused on four predators: river otters, pigeon guillemots, harlequin ducks and sea otters. Biologists looked at oil as well as natural factors to explain why nearshore predators were having a difficult time recovering from the spill. The NVP Web site is produced by the Alaska Biological Science Center and can be found at: www.absc.usgs.gov/nvp/.

The Alaska Predator Ecosystem Experiment (APEX) concentrates on recovery of seabirds and the availability of forage fish as a food source. This study has documented an ongoing natural shift in the ecosystem that could be a major influence over many species in the Gulf of Alaska. The APEX has links to NVP and SEA and can be found at: (http://www.fakr.noaa.gov/oil/resproj.htm).

One interesting site was produced by Jeffrey Kelly, a college freshman at Western Washington University. "Prince William Sound: Paradise Lost?" was originally created in 1996 as part of a scholarship contest promoting sites with great educational value. Kelly says his only affiliation with the event is a personal interest. He also says he takes great care to keep the information neutral, although he admits to slipping into personal bias when it comes to initial spill response efforts. His Web site can be found at: http://library.advanced.org/10867/.

The Youth Area Watch, a program that gets high school students involved in spill-related research, has its own Web site at: www.micronet.net/users/~yaw.

Joe Hunt reported on the Exxon Valdez oil spill for The Anchorage Times. He currently serves as communications coordinator for the Exxon Valdez Oil Spill Trustees Council, which sponsors this series.

THE ANCHORAGE DAILY NEWS
LETTER TO THE EDITOR
JANUARY 16, 1999

Invest settlement in Sound

I agree with Grant Baker (Voice of The Times, Jan. 13) that the $900 million Exxon settlement should be invested to ensure a continual source of revenue for Alaska — but enough with the research already. Endowing university chairs may be a noble idea, but this is not the way to fund it. We can postulate the answers to restoring Prince William Sound ad nauseam, but this money belongs in land preservation and resource recovery. Research should not be the legacy of the spill; Prince William Sound should.

The Permanent Fund, the Trustees Council and the Legislature would be far wiser to invest oil money to ensure the health of Alaska's resources, the lifeblood of its communities. Too often research answers the question "How much can we afford to lose?" rather than asking, "What are we *not* willing to lose?"

As a wise friend told me, Alaska is not rich enough to be able to afford to lose its natural resources, nor poor enough to need to.

— Chris Franklin
Eagle River

Providing food for swans not harmful if done only when needed

Commentary

By Ed King

Over the time I have been here, which is now going on 54 years, I have always had a closeness for the wild animals, birds and fish that surround us here in our sound, coastal areas and the Copper River Delta. I have a special fondness for the great white trumpeter swan, which stays close by us during all the seasons. We see the swans flying on our Delta, where it is convenient for them to do so, and we see them nesting and bringing up their families of cygnets on our Delta ponds and estuaries. And then, when fall and winter arrive, they are still with us!

Looking at the history of the swan families we have at the Five Mile bridge, we can remember that they haven't always wintered here. Before 1964, the tide came up Eyak River, flowing in and out daily, making this a brackish area. And the grassy weed which is the swan's favorite and which grows in Eyak now, didn't exist then at Five Mile.

Where were their winter staging areas on this side of the Delta? They stayed in the upper north arm of Lake Eyak at Power Creek and then when that would freeze up, they flew a short ways to a marshy area on the lake where our Seven Mile dike hits the mountains. Here there is an upswelling of warmer water which doesn't freeze, allowing the swans' vegetation to grow. They still use this area at times, in addition to Lake Elsner, McKinley Lake and areas in the lower estuaries of Eyak River where the tide doesn't reach and the water doesn't freeze.

In a sense they don't migrate. Some families migrate along our coastal region from the southeastern edge of our Alaska ranges to the tip of British Columbia at Vancouver, looking for winter feeding habitat. But where the areas lend themselves to year-round feeding and nesting, the swans stay during the spring, summer, fall and winter — like our family group here. (Although some of our local swans may nest on lakes and ponds that are hidden away in our Chugach Mountain range and some may migrate a short distance to the coastal zone where the freezing and weather conditions are less harsh and where feed presents itself.)

On our northwest coast of North America, trumpeter swans are not endangered, but there is still not a great abundance of them. Most of the winter staging grounds are remote and the public eye cannot get near to see them like we can see our swans here on the west side of the Copper River Delta. We are privileged.

There are those here in Cordova who think we should not be feeding the swans; who think that by doing so they will lose their wild instincts and become our wards, year-round. I don't believe this to be true if feeding is only done when needed.

I have seen quite a few winters here that were more severe than our present winter, when the Five Mile bridge area lake and river completely froze up. The swans would go out in the middle of the lake and sit there to conserve energy with their heads under their wings, slowly starving while waiting for some feed area they knew of to open up. The bald eagle took a great toll on the trumpeter swans these years, because he needed some food to eat, too. Nature in the raw is seldom mild.

This is why the feeding of the swans is being done. It appears as though we may have a very harsh winter. This fall 2,500 pounds of barley grain was purchased, which may not last till Feb. 15 with this group of approximately 145-155 trumpeters. They are being fed about 75 pounds of barley grain a day, each needing about half a pound daily.

I will order some more soon. If you care to donate a few dollars for this, the swans will fly gracefully for you with their beautiful swan song. The swans are being fed in the forenoon and don't worry — they will be fed!

Ed King, 86, is a resident of Cordova. His effort to feed the area's wintering trumpeter swan population was written about in the Jan. 28, 1998 issue of The Cordova Times. Since then, King has received donations from all over the country to help purchase feed for the swans.

Letters to the editor

Porter's removal good for Cordova

This is a sincere apology. I sincerely hope you will use this forum to express my regrets to the people of Cordova. I left Cordova in haste over a year ago but my heart has always been with you. Maybe my departure was a catalyst to the dismissal of Mr. Porter and if that was the case, then my egress was a sacrifice well-justified. In any case, I feel as if I had abandoned my true responsibilities, which were you. Perhaps if I had a little more patience and faith in you, I would still be practicing in Cordova. I apologize for leaving so abruptly but the circumstances, unfortunately, warranted it at the time. I felt when I was leaving as if I had lost my own family.

The time will come to choose a new hospital administrator or means of providing medical care to your community. I desperately hope your city government will choose wisely and provide the loving, nurturing atmosphere you deserve. From what I can see from a distance, it appears as if your present city officials are decisive and firmly on course. The removal of Mr. Porter from Cordova Community Medical Center as the administrator is one of the best things that ever happened to Cordova.

I apologize for not having more faith in you.

Matt Gaspar, M.D.
Livingston, Tenn.

Nichols family says thank you

The family of Agnes Nichols thanks all of their dear friends and relatives for their support, flowers, cards and happy stories. Special thanks go to Kathryn and Bob Anderson for opening their home to us in our greatest time of need.

Also to Wilson Construction, especially T.J. Holley, for their unselfish desire to help in any way possible. Thanks also to the Elks Lodge, Marie Nichols and Diane Wiese for making an already stressful day more bearable. Thanks also to all those who cooked all the wonderful food.

Many more thanks to many more others too numerous to mention, but including the Little Chapel, Cordova Community Medical Center, Alaska Airlines, Chugach Alaska Corp. and Chugachmiut.

Thanks for the memories.

Sarah Walker, Anchorage
Nora Nichols, Cordova

Mission accomplished?

Exactly what "mission" was "accomplished" by James Dundas

See Letters, page 5

Letters ...

From page 4

and Marc Lobe?

According to the photo description on page three of the Dec. 3 Cordova Times, these two simply went out to slaughter an animal in its own habitat that was not threatening harm to any person or to anyone's property. Not self-defense, subsistence nor defense of property triggered the bear's death.

It seems they just wanted a trophy of an animal that happened to be unusually large. As Dundas said, "I feel like I've accomplished a goal." What a pathetic mentality. If this sort of thing is for the "sport of the hunt," why don't hunters get an adrenaline rush some other way that does not injure or kill another animal or person? How about parachuting, bungee jumping or rock climbing? Or maybe simply exchanging the gun for a camera? That way an animal can still be tracked but left alone and maybe grow bigger for the next photographer to "shoot." Plus, there is still a photo to display on the wall!

This new year, try living and let others do the same!

April Holloway
Anchorage

Fisheries biologists motivated by politics

Recently a report was made in the December issue of the Alaskan Fishermen's Journal that 1,800 belugas were in the Kvichak feeding on red salmon smolt. They were estimated to eat 1,500 smolts each a day. This may well be low, but figures out to about 2.7 million smolts a day for however many days they run. I would assume they run for approximately 30 days, which would mean the whales get about 71 million smolt. At three percent return, this comes to 2.13 million adult salmon gone from the run.

Then we have 1,800 belugas getting returning salmon at right about 200 reds each per day, which is 360,000 reds a day multiplied by 20 days, totaling 7.2 million reds that are gone from the run. I'm not even counting the killer whales' consumption, which is plenty, and no doubt sharks are in on the feed, along with seals and sea lions.

The worst of it is that an experienced fish spotting pilot made the sighting and a biologist sitting in Fairbanks who had not been in the area for four years refutes it. A very scientific attitude, I must say.

Reports have been made of a sea lion decline, presumably because of over-fishing by the trawlers and there are reports of killer whales decimating the sea otter population, I believe it said from 80,000 to 6,000.

would indicate to me, a non-biologist, that the killer whales were becoming hungry, so why not the belugas? They can swim, too, you know — there are no fences around Bristol Bay and all animals migrate to food.

The main problem with biologists, as I see it, is that they must conform their research to be politically correct. To advance their careers, they could not possibly advocate killing the killer whales to save the sea otters.

Nor could they possible advocate killing the beluga whales to save the Bristol Bay run. So, they have to be in denial that either one is happening, or, if it is happening, they have to say it's not important. Plus, they have to underestimate how much they eat to mitigate the damage they do.

This is exactly what these biologists who are in charge of these studies are doing.

The truth has nothing to do with these studies, as I see it. The needs of cannery workers, the owners and the fishing industries are not even in the picture.

For some reason I keep thinking the federal government has a program to make all of Alaska a national park — it sort of follows the program they used to kill of the buffalo to get rid of the Indians. Perhaps with the pro-predator program and monster trawler fleet, they are killing off the fish to get rid of the fisherman and all others who are making a living off of the natural resources of Alaska.

Of course that is really farfetched and no one would believe it for a minute; however, if there were such a program, it would probably be implemented in just this fashion.

Stanley Samuelson
F/V Cost Recovery
Cordova

ishing history of Kachemak Bay destined for video

Chris Russ
ff Writer

Putting Homer's history into moving ctures, the Pratt Museum launches its mmunity-based video "The Lore of shing and Marine Harvesting" next week.

Public screenings are set for Friday d Saturday, Jan. 22-23, at 8 p.m. at the useum. Admission is free.

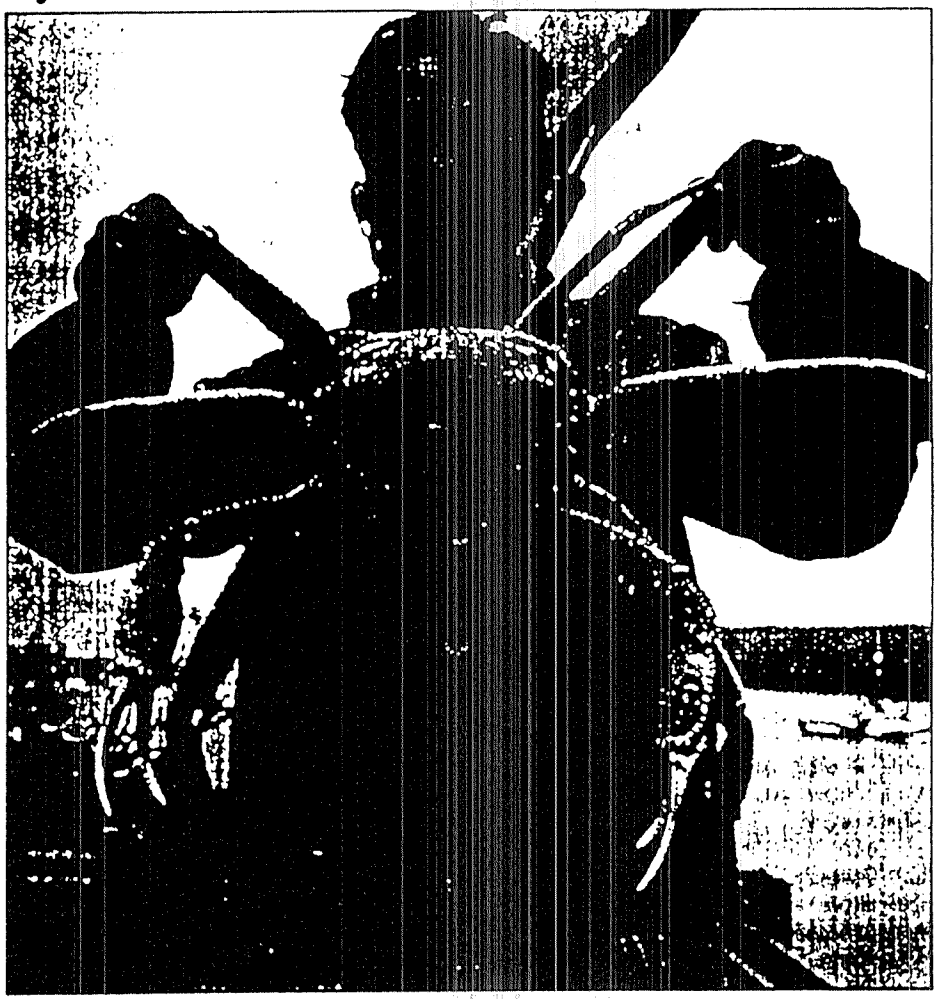
The project includes interviews with ative and non-Native fishermen, folklore ecialists and residents of the Kachemak ay area. It contains the stories about the hing lifestyle on Kachemak Bay and the ices of those who have lived it.

Although it has taken a year to gather storic and contemporary still and moving ages and collect interviews, the film isn't en close to complete. Next weekend it ill be, however, with the help of a Homer nematographer and several "community rectors."

Filmmaker Daniel Zatz, who devel-ed the museum's Gull Island remote mera project and released the Emmy-inning "Alaska's Coolest Animals" last ar, will lead a workshop Jan. 21-23 and ide participants in editing and assem-ing two films using raw footage, still ages, sounds, voices and music. The idea to create a 30-minute video documentary d a 5-minute film for use in a future useum exhibition on fishing in Kachemak y.

They'll use Zatz's specially assembled, digitalized editing equipment to select es that best express the lore of fishing d marine harvesting. The workshop is set 10 a.m. to 6 p.m. each day.

Resource materials were loaded onto a ge computer database, and can now be anipulated by the directors. On loan to e museum by Zatz, the equipment cludes a nonlinear digital editing system, hich allows video images and audio bytes be accessed and manipulated instanta-ously.



Homer News file photo

The history of fishing on Kachemak Bay will be documented forever in a new film and video produced next week by the Pratt Museum and community members.

said Zatz. "There are a few hundred different clips we can play."

There is no way of telling how the film is going to turn out, he said, adding that the community will decide what sort of structure the film will take. "It will be a real grass roots effort."

collections, said the idea for the project came about a few years ago when she worked with Zatz to create a five-minute film that promoted the Kachemak Heritage Land Trust.

"What appealed to me was the fact that we could develop oral history stories as ed by the museum," Webb said. "I thought the process was really interesting, novel and fun. On a deeper level it allows members of the community to interpret themselves."

Throughout the year, a team of interviewers traveled to Nanwalek, Seldovia and Nimlchik to talk to Natives about their lifestyles, past and present. One segment of the film was done in Sugtestun the language spoken by Sugpiaq/Alutiiq people. Interviews with tradition bearers Lillian Elyssaas of Seldovia, Herman Moonin of Port Graham, and Nick Tanape of Nanwalek are included.

With so much interest in the film — and a chance for too many cooks in the kitchen — Webb said, "We are going to let our Native participants and storytellers be the ones to take the lead."

Leading up to next week's assemblage of the film, museum officials sifted through 22 hours of video to come up with roughly four hours to pick from for the final product. Historic photographs, about 25 of them, came from the museum's collection, from anthropologists in Homer and as far away as the National Museum in Finland. Among the Finnish photos is a 1905-1906 picture of two men in a bidarka on Kachemak Bay. One has bow and arrow and the other, a gun.

"You can see the cultural transition in this one photograph," Webb said, noting that it was Bear Cove settler Adam Widenius who took the photo.

The community-based video project was made possible by a $15,000 grant from the Lila Wallace-Reader's Digest Folklife Program's Fund for Folk Culture and $2,000 from the Alaska Humanities Forum.

The project fits in with the museum's make-over, which includes revamping exhibits and taking a new look at how it tells the stories of the community.

"A lot of our exhibits will be transformed from an older presentation to a

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State budget deficit treads heavily on parks

by J. Michael Lyons
Staff Writer

State parks won't be immune from impending state revenue shortfalls. In Homer that will likely mean new trails in Kachemak Bay State Park will become overgrown, but don't expect more talk of privatization on the Anchor River.

The Division of Parks and Recreation budget has been stagnant in recent years, prompting officials to find new ways to manage more land and services with less money. But if the Alaska Legislature drops the budget-cutting penknife it has wielded in recent years and picks up a chainsaw in light of plummeting oil prices, innovation may not be enough.

"We've maintained an illusion for a number of years," said Kenai Peninsula parks Superintendent Chris Degernes. "But we're going to start to see places where the house of cards is going to start to fall."

One might be in Homer's backyard as local parks officials scramble to fund maintenance of cabins, campsites and 52 miles of new trails in Kachemak Bay State Park that were funded with money from the Exxon Valdez Oil Spill Trustee Council. The state didn't have to pay for their construction but it will have to pay for their maintenance and, as in other places around the state, it can't afford to.

"A flat budget means we can't do everything we've done in the past," said Division of Parks and Outdoor Recreation Director Jim Stratton during a visit to Homer last week.

Budget cuts will force the division to prioritize areas of spending, which will include closing less-used campgrounds around the state and could even trickle down to include less-used trails across the Bay. It could also mean reductions in a statewide staff that is already the smallest in the nation. Some park volunteers around the state quit last year because there was no staff to help them.

"That's the first time that has happened," said Stratton.

But what won't occur, at least on the Anchor River, is privatization. State parks officials battled with Anchor Point residents in recent years when it announced plans to contract management of the recreation area there and at Stariski Creek to a private entity. The plan was scrapped and Stratton said it won't be back.

"We went down that road and I'm not going down it again," he said.

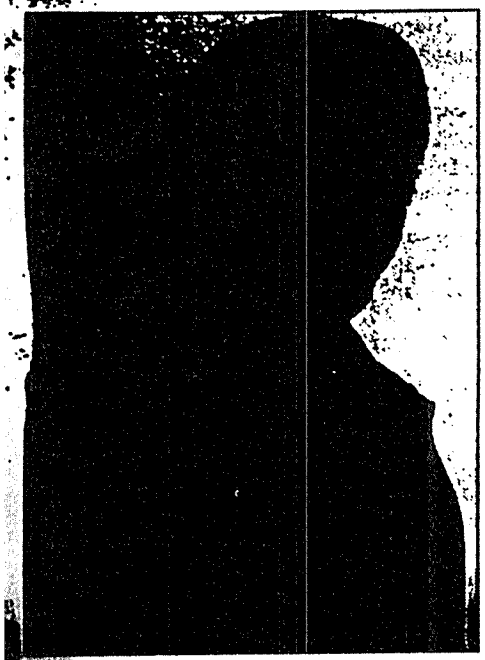
Soon after, however, state parks began charging a $5 per vehicle per day fee at the Anchor River. Forty percent of the division's budget annually is funded by user fees. On the Kenai Peninsula, that number is closer to 60 percent.

"The public has indicated a willingness to pay for state park facilities," said Degernes. But at sites like Kachemak Bay State Park, where cabin rentals are popular the fees don't cover maintenance costs.

One remaining option is employing local residents to help manage the parks. A group calling itself Friends of Kachemak Bay State Park is currently being assembled and will help organize trail maintenance

See PARK, Page 10

Park maintenance could be victim of falling oil prices



Jim Stratton

FROM PAGE ONE

crews across the Bay in addition to providing educational programs.

"Looking for other ways to help manage the state parks system is the way we're going to have go in the future," said Degernes.

The division last year inked a deal with the Kachemak Bay Conservation Society to manage the Overlook Park segment of Kachemak Bay State Park. The division accepted responsibility for the 97-acre piece of land on Baycrest Hill under the condition that it did not have to spend any money managing it. The agreement is a first for state parks.

Members of the society are currently penning a management plan that will determine whether the park will include trails, educational sites or even access.

The access issue took a step back in November when the Kenai Peninsula Borough Planning Commission granted a special plat waiver to a landowner who agreed in principle to sell about 70 acres of land bordering the park to the Exxon Valdez Oil Spill Trustee Council for inclusion in Overlook.

Michael Bullock's request to subdivide the land, known to park planners as the "Baycrest parcels," had been turned down by the Kachemak Bay Planning Commission because of road construction problems. But earlier this year Bullock brought an easement plan request to the borough that the planning commission deemed sufficient to provide access to a proposed subdivision, squashing the pending deal with the trustee council.

"We'll just have to take (the Baycrest parcels) out of the equation and look at other possibilities" at finding access, said society president Joel Cooper.

> **"I can't think we're going to be on a downward cycle forever."**
> **– Jim Stratton**

Those possibilities include acquiring a nearby piece of state land or having no access to the park other than from the beach.

Other issues surrounding the management agreement include how the society might pay for any trails or other improvements to the Overlook land.

Recommendations included erecting an informational kiosk and donation box at the Baycrest highway turnout.

The parks division will closely follow the Overlook Park projects as a potential template of park management in the future as the division prepares to swallow its share of potentially $3 billion in revenue shortfalls in coming years, Stratton told society members, adding that he can only hope the future will be brighter.

"I can't think we're going to be on a downward cycle forever," he said.

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TREADS HEAVILY ON
PARKS.

THE ANCHORAGE DAILY NEWS
THE TIMES EDITORIAL
JANUARY 13, 1999

Public support needed for spill endowment

By GRANT C. BAKER

The 10th anniversary of the 1989 Exxon Valdez Oil Spill (EVOS) is approaching soon. A spill symposium will be held March 23-26 at the Egan Civic and Convention Center to commemorate the event.

Status of restoration programs will be presented. The programs are funded by the $900 million settlement Alaska made with Exxon in 1991. Each year, a payment is made. The last settlement payment will be received from Exxon in 2001.

A portion of the settlement payments have been set aside each year to create a restoration reserve fund. The reserve is expected to be worth about $140 million in 2002.

As the final payment grows near, the EVOS Trustee Council has the problem of deciding how to spend the reserve. Oil-damaged areas still need to be restored. Work is needed to fix sporadic and depressed fishery stocks, oiled seabed contamination and the lack of effective oil cleanup methods.

During the same time period since the spill, the financial woes of the University of Alaska have also been heard. The recent low price of oil worsens the problem for the university.

There seems to be a mutual solution to their problems. The needs of the EVOS Trustee Council mesh very well with the mission of the university. Thus, the reserve represents a rare opportunity for both to solve their problems by creating a university research endowment.

Universities across the country have recognized the importance of endowments for their future survival. An Internet search turns up hundreds of Web sites about university endowments.

In 1997, the top 300 university endowments ranged from about $11 billion to a low of $67 million. In comparison, the University of Alaska has an endowment worth about $30 million.

How do university endowments work? First, an initial amount of money is placed into an account. The account earns interest or a rate of return from investments each year. Over the past four years, the average rate of return for 500 university endowments has been about 15 percent.

"Squirrels are pigging out in the bird feeder and, again, it doesn't bug me. Does that mean I'm becoming a liberal?"

Part of the earnings is used each year to support things such as research and technology development. This is commonly about 5 percent of the endowment fund. Earnings that remain are left in the account. Each year the account grows and so does the annual amount that can be used. In many ways, an endowment for the UA would be like the Alaska Permanent Fund.

For example, suppose a $100 million EVOS endowment is established today for the university. Assume for the sake of discussion that a 15 percent rate of return is used. Over the next 20 years, the endowment will increase more than six-fold and be worth about $600 million. An additional $300 million would have been generated to conduct research.

However, the greatest benefit of an endowment may be the snowballing of opportunities it creates. Earnings from a $100 million endowment can fund about 25 permanent endowed research chairs. World-class experts are selected to do the work funded by the endowed chairs. Twenty-five experts in fields such as fisheries, biology, chemistry, and environmental engineering would create a very special university.

World-class experts attract funding from many sources including private industry, and state and federal agencies. Relationships with existing funding sources are enhanced and new funding sources are established. Additional income can be generated from patents and other intellectual properties. For example, Stanford University received about $120 million from patents and special programs in 1997.

Thus, a broad funding base is generated with long lasting stability for the university and the community. An outstanding environment of teaching and learning is established. That is a natural attraction for students.

An endowment may be structured to do whatever the Trustee Council needs done. As a cooperative effort between the university and the Trustee Council, a customized endowment can be constructed to superbly fulfill the purpose of the EVOS settlement funds.

Public support for an endowment is growing. Resolutions of support have come from the Anchorage Assembly and the Greater Fairbanks Chamber of Commerce. Anchorage Mayor Rick Mystrom, Republican and Democratic legislators, students, and many others have submitted letters of support.

But the Trustee Council is not yet convinced. It has not committed to the endowment idea.

An endowment can be the key to getting the university on track to become self-supporting. University officials and the Trustee Council need to be shown how well an endowment matches their needs. They need to be urged to get together and make an endowment happen.

Public comments of support are needed soon. The Trustee Council is scheduled to meet on Jan. 21-22 to discuss how the Restoration Reserve will be spent.

The mailing address for the Trustee Council is 645 G St. Suite 401, Anchorage, AK 99501. Addresses and phone numbers for individual Trustee Council members, legislators, and University officials may be obtained from the Internet WEB site at:
http://www.alaska.net/~baker/evos.htm

As the 10th anniversary of the spill approaches, the Trustee Council would serve itself and Alaskans well by making sure a university endowment happens as part of the spill legacy.

Dr. Grant C. Baker is a faculty member of the University of Alaska Anchorage, an alumni of the University of Alaska Fairbanks and a Prince William Sound commercial fisherman.

THE STAR
JANUARY 13, 1999

Eyak Corp. dividends on hold

By Jennifer L. Strange
The Cordova Times

An accounting error means a second proxy vote by Eyak Corp. shareholders is necessary regarding the $45 million, 75,000-acre Habitat and Lands Transaction between the Native corporation and the Exxon Valdez Oil Spill Trustee Council. Dividend checks from the transaction have been postponed until the contract is

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Eyak ...

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closed.

The error was due to a mistake made by the U. S. Bureau of Lands Management, which accounted for about 2,000 acres of land that didn't exist, said Trustee Council Executive Director Molly McCammon. The resulting changes to the contract, which include a land transaction between the corporation and the U.S. Forest Service to make up for the 2,000 acre difference, must be approved.

"They are non-material, non-significant changes, but the government wanted to make sure everything was OK and that it got additional review from shareholders," McCammon said. Both parties signed a binding purchase agreement on Dec. 31.

"We want Eyak to be treated fairly and the council has agreed to pay for part of the cost of the additional vote," McCammon said. "We are very apologetic about this."

The Trustee Council proposed the original land transfer in June of 1997. The Eyak Corp. Board of Directors has been negotiating what lands they would transfer and for what price since that time. In October of last year, the corporation sent a proxy to its shareholders with its proposal of receiving $45 million over a four-year period beginning at the time of closure on the contract. Eighty-two percent of shareholders approved the transaction with four and a half percent opposing.

The transaction includes land around Port Gravina, Sheep Bay, Orca Inlet, Lake Eyak, Eyak River and Mountain Slough, which is all within the identified Exxon Valdez spill area, said Eyak Corp. General Manager Brian Lettich.

"Though none of our lands were actually oiled, resources on our lands were affected, such as wildlife," Lettich said.

Approximately 55,000 acres of the land being transferred by the corporation is a fee simple land sale by which shareholders sell their rights to the property. Eyak Corp. ownership of the other 20,000 acres will be retained, though development constraints will be in place.

"We've sold the rights to commercially develop and harvest timber on some of the area, which can be managed for recreation or wildlife. And we've retained rights to develop other areas for subdivisions, recreation facilities, airports or whatever," Lettich said.

Lettich said the proxy with the minor changes will be sent to shareholders in the next few weeks.

Once the vote is in and the contract is complete, dividends will start to be processed according to a payment schedule, Lettich said. The schedule ties a specific amount of each EVOS Trustee Council payment to the dividends.

Trustee Council payments will include a down payment of $13 million to be executed when the contract is finalized, $14 million in October of 1999, $5 million in October of 2000, $6 million in October of 2001 and $7 million in October of 2002.

Corporate income taxes and other costs could affect the total amount paid to shareholders as dividends.

"We're working on facilitating the closing of the contract," Lettich said. "We've been talking with Trustees for over six years and it will be a relief to close this."

Why aren't oiled-area sea otters recovering?

By Jody Seitz

Coastal currents

On a calm, cloudy day in early August, nine years after the Exxon Valdez oil spill, I caught a ride with local Cordova pilot, Pat Kearney, out to the R/V Kittiwake, anchored just off the northern end of Knight Island. Researchers Jim Bodkin and Brenda Ballachey of the U.S. Geological Survey were winding up their final fieldwork for the Nearshore Vertebrate Predator project.

The NVP project seeks to find out why some animals that live in the nearshore environment, where most of the crude oil was stranded in 1989, are not recovering. Is it a lack of food or is oil pollution continuing to cause problems for sea otters in the spill area?

Ballachey and Bodkin were there to capture and release 25 sea otters from northern Knight Island. To assess the health of the animals, researchers measure, weigh and take blood samples from the otters. They compare the results of animals from oiled areas with those from unoiled areas to help build a picture of recovery.

Sea otters tested last year had elevated levels of cytochrome P450-A, a sign of recent exposure (within two weeks) to crude oil or to organo-cholorines such as PCBs.

"We're finding that animals in this area around northern Knight Island have higher levels of this enzyme than animals in a non-oiled reference area down around Montague," said Ballachey.

This year, Ballachey and Bodkin tested specifically for evidence of PCB exposure.

No one has yet posed a plausible explanation of why animals in the oiled western sound might show higher levels of PCB exposure than animals elsewhere in the area. In recommendations to the Exxon Valdez Oil Spill Trustee Council, however, scientific peer reviewers have repeatedly emphasized the importance of settling the question.

Bodkin's firsthand impression of the otter populations in the southwestern sound is that they're increasing, but he has no explanation for why they've not returned to northern Knight Island.

Food doesn't appear to be a problem. Scientists with the NVP project say there are plenty of clams and mussels to support a larger population in Herring Bay. The long-term effect of chronic pollution on the animals and their population remains unknown.

Jody Seitz, who lives in Cordova, produces the Alaska Coastal Currents radio program. The series is sponsored by the Exxon Valdez Oil Spill Trustee Council to provide information about restoration activities within the spill region.

THE VALDEZ VANGUARD
JANUARY 13, 1999

THE STAR
JANUARY 13, 1999

Visitors Pay $3800 For Tour...

Spill Site To Draw Tourists

SEATTLE--A Seattle-based travel company that offers exotic and educational tours is cashing in on the Exxon Valdez oil spill of 10 years ago.

Earth Odysseys is planning six boat tours of Prince William Sound this summer, including one tour billed as a "commemorative journey to Prince William Sound March 28 to April 3."

The spill occurred on March 24, 1989.

The company says it will carry 8 passengers aboard a 50-foot motor yacht out of Whittier to visit spill sites at Sleepy Bay, Northwest Bay and the Bay of Isles.

The 8 passengers will pay $3,800 each for the weeklong tour.

Earth Odysseys says its tours are aimed at "providing environmental and cultural educational experiences" to its travel clients.

The tour guide, David Sale, also called a "Scientific Adviser," says travelers to Prince William Sound "will meet with natives, fishermen and other inhabitants of this sub-Arctic ecosystem as you hear their stories about the spill and life in the Sound."

The tour is timed to follow a symposium in Anchorage entitled, "Legacy of an Oil A spill: Ten Years After Exxon Valdez," by the Exxon Valdez Oil Spill Trustee Council.

The company was quick to emphasize that the trustee council does not endorse its tours. ★

Babbitt taps Knowles aide

Heiman to replace Williams as special assistant for Alaska

By DAVID WHITNEY
and STEVE RINEHART
Daily News reporters

Interior Secretary Bruce Babbitt has selected Marilyn Heiman, a natural resources aide to Gov. Tony Knowles, to be his new special assistant for Alaska.

Babbitt spokesperson Stephanie Hanna said Monday that Heiman's name has been submitted to the White House for the usual background checks. Until those checks are completed in the next few weeks, she said the secretary would have nothing more to say about the pending appointment.

Heiman would succeed Deborah Williams, who left the position Dec. 6 because of differences in the way the secretary had handled the ongoing dispute with the state of Alaska over subsistence hunting and fishing. Heiman has worked as special assistant on natural resource and environmental issues for Knowles for the last four years.

"It's a very big honor to be considered for this position," Heiman said in a brief telephone interview. She said she would not comment further until her selection has cleared all the background checks.

The job joins politics, federal land and natural resource policy, and coordination of federal agencies in Alaska. As the secretary's point person, the special assistant deals with the governor's office, interest groups across a broad spectrum, and the state's three-man Republican congressional delegation.

Williams, who was an attorney in private practice when she was named to the job, said Heiman was one of six she suggested to Babbitt as potential replacements.

"I think she is smart, enthusiastic and overall very well equipped for the job," Williams said Monday.

She said she counseled Heiman to be truthful above all, to learn all she can about critical issues and to seek cooperative relationships with other agencies and individuals.

Working with the delegation, which often differs with the White House on development, is a key

Please see Page B-3, HEIMAN

SEANNA O'SULLIVAN / The Associated Press

Marilyn Heiman, special assistant to the governor on natural resources, has been chosen as the Interior Department's top official in Alaska.

HEIMAN: Knowles resources aide gets Interior post

Continued from Page B-1

element of the job. Williams said she advised Heiman to "seek areas of consensus, and take advantage of the ability of the delegation and the (Interior) secretary to work together. If you disagree, be fair."

In a written statement on Monday, U.S. Sen. Frank Murkowski, chairman of the Senate Energy and Resources Committee, noted Heiman's association with Knowles. "We look forward to working with someone who is sensitive to the needs of responsible economic development in the state," he said.

At least four controversial issues await Heiman, if she gets the job: enhanced seismic oil exploration in the Arctic National Wildlife Refuge, a road across Izembek National Wildlife Refuge from King Cove to Cold Bay, regulation of snowmachines in Denali and other national parks, and the continuation of commercial fishing in Glacier Bay National Park.

As Knowles' environmental assistant, Heiman has looked for balance in weighing competing views on such issues as the proposed Sutton-Glennallen electrical intertie, Cook Inlet oil lease sales, and logging on the Kenai Peninsula, said Kevin Harun, head of the Alaska Center for the Environment. Heiman is a former member of the center's board of directors, he said.

"I think she looks for a way. She is not an ideologue. She tries to get things done," Harun said. "I think she will also get along with the delegation. She is a good listener."

Ken Freeman, executive director of the Resource Development Council for Alaska, said his organization has found Heiman to be accessible. "And from our perspective, accessibility is the most important thing," he said.

Those representing Alaska's natural resource industries don't need a special assistant with whom they always see eye to eye, he said. They need someone to serve as a contact with federal agencies and who will convey their views to policy makers in the capital, he said.

"It is a very important position for Alaska, especially when you look at the amount of federal land in the state. It is approaching 60 percent," Freeman said.

Heiman was field director of Knowles' re-election campaign last year. She had worked as a legislative aide, was co-owner of a consulting firm, and ran unsuccessfully for the Anchorage Assembly in 1993. She is a graduate of the University of California at Berkeley.

The Associated Press contributed to this story. Reporter David Whitney can be reached at dwhitney@mcclatchydc.com. Reporter Steve Rinehart can be reached at srinehart@adn.com.

THE ANCHORAGE DAILY NEWS
JANUARY 12, 1999

THE KODIAK DAILY MIRROR
JANUARY 12, 1999

Babbitt picks Heiman as assistant

By DAN JOLING
Associated Press Writer

JUNEAU (AP) — Interior Secretary Bruce Babbitt has picked an aide to Gov. Tony Knowles for the top department job in Alaska.

Marilyn Heiman, Knowles' natural resources special assistant, will be hired as Babbitt's special assistant for Alaska issues pending a background investigation.

"She is the secretary's choice," Stephanie Hanna, a spokeswoman for Babbitt, said Monday.

Heiman's name has been submitted to the White House for a routine background check, Hanna said. Until that has been completed, the appointment will not be officially announced.

Heiman, who referred questions to Hanna, was a finalist along with former state Rep. Kay Brown, head of the Alaska Conservation Alliance, and Molly McCammon, executive director of the Exxon Valdez Oil Spill Trustees Council.

"It is a very big honor to be considered for this job along with the other two qualified women," Heiman said.

The new special assistant will replace Deborah Williams, who resigned in October after five years in office. Williams resigned shortly after Babbitt announced that a moratorium had been extended on a federal takeover of Alaska fish and game management.

Williams was the former head of the environmental law firm Trustees for Alaska. She often had been at odds with the Alaska congressional delegation over land-use and development issues.

Last year, she strongly opposed the delegation's push for a road through wilderness portions of the Izembek National Wildlife Refuge on the Alaska Peninsula.

U.S. Sen. Ted Stevens, R-Alaska, inserted a provision into a spending bill that would have eliminated three special assistant positions. About the same time, Stevens was making public statements in Alaska about his difficult working relationship with Williams.

A spokeswoman for Stevens said Monday the senator had spent the weekend reading documents related to impeachment proceedings and that he had not heard of Heiman's possible appointment.

U.S. Sen. Frank Murkowski, R-Alaska, said he expected a more balanced approach from Heiman in communicating to Babbitt about Alaska issues.

"With the decline in oil revenues, and given her association with Gov. Knowles and his administration, we look forward to working with someone who is sensitive to the needs of responsible economic development in the state," Murkowski said.

Murkowski said he hoped Heiman and the Clinton Administration would work to help secure enough timber from the Tongass National Forest to permit operation of a veneer plant in Southeast Alaska.

Heiman has been Knowles' special assistant for natural resource and environmental issues since Knowles was elected in 1994.

She left the administration to act as statewide field director in his successful reelection bid last year. In 1994, Heiman was campaign manager for the Alaska Committee, the organization dedicated to keeping Juneau as Alaska's capital city.

Heiman is a graduate of the University of California at Berkeley. She has worked as the hazardous waste coordinator for the Alaska Center for the Environment, an aide to the state House Resources Committee, and as a consultant for North Coast Research, a public policy research firm she co-owned.

Lots of oil cleaned up, but lots of oil remains

Editor's note: It has been eight years since the Exxon Valdez ran aground in Prince William Sound, spilling nearly 11 million gallons of Alaska crude oil. Time has since told quite a lot about the spill's long-term effects. To help tell the story, the Exxon Valdez Oil Spill Trustee Council is providing this column focusing on the ongoing recovery within the spill region.

By JODY SEITZ

The technique used to remove weathered oil from several beaches on Latouche and Evans islands in 1997 appears to have worked on known deposits of oil. The trouble is, it had little effect on the large deposits of oil hidden by rocks and overburden.

Residents of nearby Chenega Bay successfully argued for the additional beach cleaning on locally popular beaches at the north end of Evans Island and on heavily oiled Sleepy Bay. The six-week cleanup, funded by the Exxon Valdez Oil Spill Trustee Council, covered five beaches totaling about a 1/2 mile in length, and cost nearly $2 million.

A chemical called PES-51, a citrus-based product that binds with the oil, was used to remove tar and mousse from under patches of asphalt and boulders. The crew used air knives to expose the oil and then flushed the beach with sea water, floating the oil to the water's edge where it and the PES-51 could be scooped up.

Alaska Coastal Currents

Restoration and recovery following the Exxon Valdez oil spill

Larry Holland, a research chemist with the Auke Bay Lab, went out to check the status of the beaches one year after they were treated. After extensive sampling of the cleaned areas, Holland concluded the treatment was effective. "We saw a 70 to 90 percent reduction of oil at sampling sites where oil was known to be exposed and then cleaned," he said.

But that's only half the story, Holland said. Winter storms rearranged the beach, exposing large quantities of oil that never received treatment. Essentially, it showed that the cleanup can be effective, but only within inches of where the chemical can be injected into the cobble.

"It appeared that the overburden had been thrown around and had exposed new areas of tar we didn't see in prior years," said Holland.

Imagine a pinprick on a piece of typing paper. That small hole illustrates the amount of beach cleaned by the airknife and chemical treatment, Holland said. How many pinpricks would it take to cover the entire paper? And how much chemical agent would be needed to do a thorough job on the beach?

Holland says it's almost impossible to estimate how much oil is still out there. He was skeptical that even the powerful storms that tore up the beaches last winter could clean out some of the remaining pockets of weathered oil.

Holland cautioned that this information is preliminary and the study has not yet received peer-review by other scientists.

Even after eight years of winter storms and tides, the local beaches are still contaminated, according to Chenega IRA Council Vice President Gail Evanoff. "They are not clean at all. I think the tidal action that so many of the scientists said would clean the beaches, has actually driven the oil further down. It's just asphalted."

Auke Bay scientists have finished their monitoring of the cleanup, but Chenegans will continue to monitor the beaches in their own way, said Evanoff. "When we're fishing or hunting everything is observed. It's the only intimate way I know monitoring can be done, and it's a natural thing for us out here."

Jody Seitz lives in Cordova and also produces the Alaska Coastal Currents radio program.

THE ANCHORAGE DAILY NEWS
JANUARY 9, 1999
LETTERS TO THE EDITOR

Fish & Game's agenda clear

I would like to thank the Anchorage Daily News for a very informative article on Jan. 4 headlined, "Panel to view flexible salmon rules."

The article did a very good job outlining the fisheries management principles that the Alaska Department of Fish and Game Sport Fish Division will be promoting at this winter's Cook Inlet Board of Fisheries meeting.

According to the article, ADF&G Sport Fish director Kevin Delaney is drawing up a plan that puts less emphasis on reaching a specific sonar target for Kenai River king salmon, thereby not "upsetting summer plans and drawing complaints from anglers and guides." Also a plan that would allow ADF&G to exceed a biological escapement goal for Kenai River red salmon, thereby creating "greater cycles in the rivers salmon production and reduced commercial harvests," should take "center stage," according to Delaney.

Let's see if I get this right. Delaney wants ADF&G not to worry about reaching a sonar goal if it can help guided sportfishers, and not to worry about going over a sonar goal if it can hurt commercial fishers. This type of thinking is sure to win Delaney big points in this year's guided angler popularity contest. However, he is also likely to figure prominently in the upcoming documentary "Death of the Kenai River."

— Rob Williams, board member
Kenai Peninsula Fishermens Association

Restrictions hurt Inlet fishery

I am writing in regard to the article in the Daily News on Jan. 4, "Panel to view flexible salmon rules." I am a concerned commercial fisherman in Cook Inlet. I am sick and tired of having the commercial fishery in Cook Inlet further restricted.

I am wondering why comments about changes to Cook Inlet salmon management come from the state director of the Sport Fish Division, Kevin Delaney, and not local biologists. Delaney said a "center stage" of the upcoming Board of Fish meetings in Soldotna will be the debate to drop the long-standing rule against "overescapement." The article stated, "Some biologists have talked of managing the river to reach more flexible optimal spawning numbers." Is this local biologists talking, or Delaney?

Why doesn't Delaney come right out and say that he would like to see biological escapement goal management, which brings back "consistent returns" of reds to the Kenai River, thrown out the window? It would be replaced by an optimal escapement goal, or no upper-escapement goal, which would "result in greater variations in Kenai River runs." This would be the death knell for the commercial fishery in Cook Inlet. I believe this is Mr. Delaney's intent. Or is it that without a commercial fishery, there would be no need for any commercial fish biologists, and that money could be used to increase his Sport Fish Division budget?

Alaska Coastal Currents

By Jody Seitz

Chignik Lake shakes off burden of oil spill

It was September, the end of the commercial fishing season. Some Chignik Lake residents were hunting, making those final critical forays into the foothills below Mount Veniaminov for meat to hold them all winter.

As it has been for centuries, subsistence is essential to this Alaska Peninsula village. It's one of the most remote places in the state. During the fishing season planes may come through the mountain pass regularly, but in winter, snow, fog and wind can shut down air traffic for days. With welfare cutbacks and low salmon prices, subsistence is even more critical, according to local resident Sam Stepanoff.

"It's pretty hard for big families as they cut down on this welfare stuff," Stepanoff said. "If it wasn't for subsistence we'd never make it around here — no way."

Mitchell Lind doesn't see survival here as difficult; to him the land is bountiful. "There's not many jobs, so a lot of people subsistence hunt and live off the land. Caribou, moose, bear, ducks, seals, fish, we live off everything here. You have to be pretty lazy not to survive around here."

But both Stepanoff and Lind recalled that for a while after the spill, marine resources seemed threatened. In 1989, commercial fisheries were closed as oily sheens glided over 500 miles from Bligh Reef, down the Alaska Peninsula, past Chignik, as far as Ivanof Bay.

Locals had been accustomed to a rich palette of shellfish, seal, and ducks. The oil spill contaminated the water and put marine resources — salmon, seals, and shellfish — in a risky light. Mitchell Lind says he got back to hunting and fishing within a year of the spill, but others were more cautious.

"You have to think about the cycle of the fish. A lot of people were concerned about the small fry that were coming out that year," said Lind. "They were worrying if they were going to come back contaminated, because when they come up from the river here they stay in the lake for a year, then go out to the ocean for 3 or 4 years, and then they come back in. A lot of them were thinking about that cycle — the fish that were going out that year."

Nearly ten years have passed, and the community seems to be past the oil spill. The local health aide doesn't see any lingering emotional issues from the oil spill in the community.

"We're at the outer edge of it, so there wasn't so much of an impact here," said Eddie Slaton, "but people were worried about what was going on." Lind, Stepanoff and some village elders say the seals and eiders seem to be coming back. And even though the salmon prices are low, the runs to the Chignik River are large enough to provide for subsistence.

Jody Seitz lives in Cordova and also produces the Alaska Coastal Currents radio program. The series is sponsored by the Exxon Valdez Oil Spill Trustee Council to provide information about restoration activities within the spill region.

THE HOMER NEWS
JANUARY 7, 1999

Parks director here tomorrow

Jim Stratton, director of the Alaska Division of Parks, will be in Homer tomorrow to provide input on the management of Overlook Park.

In an unprecedented move earlier this year, the division agreed to accept ownership of the parcel purchased by the Exxon Valdez Oil Spill Trustees Council, provided another party agreed to manage it. Kachemak Bay Conservation Society took up the challenge.

Stratton will speak at the society meeting tomorrow at 7 p.m. at Homer United Methodist Church on the state parks system and management of the new park.

KODIAK DAILY MIRROR
JANUARY 5, 1999

Babbitt set to announce subsistence regulations

ANCHORAGE (AP) — Interior Secretary Bruce Babbitt is set to announce final regulations controlling the federal takeover of subsistence management in Alaska's rural areas.

Babbitt and Robert Anderson, his acting special assistant for Alaska, have scheduled a news conference in Washington, D.C., Tuesday afternoon.

The takeover of subsistence fishing is set for Oct. 1, the beginning of the next federal fiscal year.

The move comes because Alaska's Constitution and federal law concerning subsistence hunting and fishing don't agree. State law allows no one group preference in subsistence activities, but federal law gives rural residents first shot at subsistence hunting and fishing.

Babbitt said in a news release Monday that he does not want the federal government to manage subsistence activities in Alaska and hopes the state Legislature takes steps to bring Alaska into compliance with federal law.

Lawmakers last year rejected a plan to avert a federal takeover.

KODIAK DAILY MIRROR
JANUARY 4, 1999

Fish board takes fresh look at Kenai salmon management

ANCHORAGE (AP) — Some longtime ideas about managing Cook Inlet salmon will be given another look when the state Board of Fisheries travels to Soldotna next month for a two-week meeting.

Doubts about the way the state has counted Kenai River king salmon with sonar have prompted suggestions for new ways to run the sport fishery. The proposals should mean more flexibility and a season less prone to interruptions, state biologists said.

The Fish Board also will debate whether to drop its longstanding rule against overescapement, or allowing so many Kenai River reds to spawn that the next generation of fingerlings may not have enough food.

Kenai River reds make up the Cook Inlet's largest salmon run.

Dropping that rule could mean bigger cycles in the river's salmon production and reduced commercial harvests. But it also could mean more fish available for sport fishermen. And it would give the state more flexibility to build up some of the Cook Inlet's smaller secondary runs.

For Kenai kings, fisheries managers long have counted the numbers of king salmon entering the Kenai River with underwater sonar, watching to make sure there will be enough spawning for future runs. Sportfishing on the river has been cut back or eliminated when the sonar count fell short of precise targets.

But new studies show the state's sonar ticker has been faulty — sometimes registering red salmon as kings. That has forced biologists to begin using other methods to help calculate run strengths, such as test nets in the river and close monitoring of commercial and sport catches, said Kevin Delaney, director of the state's sportfish division.

Biologists now are drawing up plans for managing Kenai kings that puts less emphasis on reaching a specific sonar target, Delaney said.

The result of using broader target ranges should be a more stable sportfishery, with fewer emergency cutbacks and closures, Delaney said.

An even more fundamental principle in Cook Inlet has been managing to hit the ideal maximum number of spawning reds in the Kenai River, the region's biggest producer — even when that means less-than-ideal spawning numbers in some of the Inlet's smaller streams.

This idea of trying to achieve "maximum sustained yield" on the Kenai has been credited with helping bring back commercial fishing in the Inlet, where runs were depleted in the 1950s and 1960s.

But some sportfishermen say that system tilts all management decisions toward commercial priorities. In recent years, some biologists have talked of managing the river instead to reach more flexible "optimal" spawning numbers.

An "optimal" system would result in greater variations in Kenai River runs, biologists say.

Oversized runs one year might result in undersized runs several years later, where existing management does its best to manage for consistent returns. But commercial fishing could be restricted without fear of exceeding a maximum in-river number, allowing weak runs in other river systems to be built up, backers of the "optimal" system say. And up-and-down cycles in the Kenai are not expected to hurt the river's long-term health.

The debate over managing for biological maximum returns vs. optimal returns has been in the wings for several years, alongside the debate over maximizing strong stocks vs. protecting weak stocks.

"I think it's going to be on center stage this time," Delaney told the Anchorage Daily News. "I think it's a very important discussion to have."

The seven-member Fish Board is scheduled to meet Feb. 16-Feb. 28 in Soldotna.

Alaska Coastal Currents

By Jody Seitz

Forest Service readies for more people in PWS

With construction of the road to Whittier, the Glacier Ranger District of the Chugach National Forest is getting ready for increased use of the western Prince William Sound. Karen Murphy and Lowell Suring, wildlife biologists with the U.S. Forest Service, are creating a model of how humans use the sound, based on current boat traffic.

Several species injured by the Exxon Valdez oil spill have not recovered. The Forest Service hopes the model will help them guide human use so that injured species don't face too much human encroachment. Murphy and Suring's work emphasizes areas used by harbor seals, pigeon guillemots and cutthroat trout.

"Many species respond to human activities in different ways," said Murphy. "In extreme situations populations can be displaced or reduced. So if you're trying to manage wildlife, you want to be able to factor in how they respond to people."

The model also could be used to plan new cabin sites, change use of camping areas, or to predict the impact of more traffic or new structures, such as lodges and piers, on animals in the sound.

To make the model, Murphy and Suring are combining a variety of data, including Whittier harbor-usage statistics, commercial fishing records, and a 1997 survey of boat owners.

To validate the model, the Forest Service biologists conducted aerial surveys of specific parts of western Prince William Sound twice a month from May through September of 1998. They counted boats and sorted them into categories: commercial fishing, cabin cruisers, sailboats, inflatables, skiffs, and such. Their actual counts will be compared to the model results.

There weren't many surprises but there were some predictable patterns: usage peaked in July and August, weekend traffic increased markedly over weekdays, and smaller boats had more limited ranges than the larger ones. In recent years, more people have been viewing the sound through the use of kayaks and the number of jet skiers is growing.

Murphy cautions those who see the model, that it is only a representation of reality. "We want it to be close enough to what goes on in the sound, that it's valid for management purposes, but we'll never be able to capture everything exactly the way it is," Murphy said.

The project isn't intended to increase regulations, she said, but it should provide a tool for making wise management decisions.

Jody Seitz lives in Cordova and also produces the Alaska Coastal Currents radio program. The series is sponsored by the Exxon Valdez Oil Spill Trustee Council to provide information about restoration activities within the spill region.

11.10.4

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

AGENDA
EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL MEETING
March 1, 1999 @ 9:30 a.m.
645 G STREET, ANCHORAGE,
FIRST FLOOR CONFERENCE ROOM

2/19/99
1:35 pm

DRAFT

Trustee Council Members:

BRUCE BOTELHO/CRAIG TILLERY
Attorney General/Trustee
State of Alaska/Representative

MICHELE BROWN
Commissioner
Alaska Department of Environmental Conservation

MARILYN HEIMAN
Special Assistant to the Secretary for Alaska
U.S. Department of the Interior

DAVE GIBBONS
Trustee Representative
U.S. Department of Agriculture
Forest Service

STEVE PENNOYER
Director, Alaska Region
National Marine Fisheries Service

FRANK RUE
Commissioner
Alaska Department of Fish & Game

Teleconferenced throughout the spill area via Commercial teleconferencing
State Chair

1. 9:30 a.m. Call to Order
   - Approval of Agenda
   - Approval of January 22, and February 9, 1999 meeting notes

2. Executive Director's Report - Molly McCammon
   - Administrative Issues
     - Financial Report
     - Project Status Report
   - Habitat Protection Status Report
   - 10th Year Symposium

3. 9:45 a.m. Project 99391, Cook Inlet Information Management and Monitoring, Status Report - Bill Samuels & Cary Gaunt, Scientific Applications International, Corp.

4. 10:30 a.m. Public Comment Period

5. Executive Session on Habitat Protection

6. Update on Injured Human Services*

7. Future Uses of the Restoration Reserve*

* indicates tentative action items

Adjourn - 3 to 5 p.m.

raw

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

TRUSTEE COUNCIL MEETING ACTIONS

February 9, 1999 @ 10 a.m.

By Molly McCammon
Executive Director

DRAFT

Trustee Council Members Present:

*Dave Gibbons, USFS
Robert Anderson, USDOI
Steve Pennoyer, NMFS
Frank Rue, ADF&G
Michele Brown, ADEC
•Craig Tillery, ADOL

* Chair
In Anchorage: Dave Gibbons and Craig Tillery
In Juneau: Steve Pennoyer, Frank Rue and Michele Brown
In Seattle: Bob Anderson

• Alternates:
Craig Tillery served as an alternate for Bruce Botelho for the entire meeting.

Meeting convened at 10:09 a.m.

Public comments received from one individual from Homer.

1. Approval of the Agenda

APPROVED MOTION: Approved the Agenda. Motion by Rue, second by Anderson.

2. Proposed Update on Injured Resources List

APPROVED MOTION: Adopt the revisions to the injured resources list, see attached. Motion by Pennoyer, second by Rue.

Meeting adjourned at 11 a.m.

raw

EXXON VALDEZ OIL SPILL RESTORATION PLAN

Update on Injured Resources and Services

January 1999

DRAFT

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
645 G Street, Suite 401, Anchorage, AK 99501
907-278-8012 800-478-7745 (in Alaska) 800-283-7745 (outside Alaskas)

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax: 907/276-7178

January 1999

Dear Reader:

The Trustee Council adopted the Exxon Valdez *Oil Spill Restoration Plan* in November 1994 with the intent that the plan would be updated as needed to incorporate new scientific information.

The enclosed draft proposes changes to two parts of the Restoration Plan: the List of Injured Resources and Services in Chapter 4 and the summaries of Injury and Recovery and the Recovery Updates in Chapter 5. These parts of the Restoration Plan were revised most recently in September 1996, and the Council now is considering additional changes based on the results of studies and resource assessments since then. The Trustee Council intends to act on these changes in advance of the 10-year observance of the oil spill, March 23, 1999, and now invites public comment on this document.

The Council's List of Injured Resources and Services and the summaries of Injury and Recovery and Recovery Objectives are to be based on the best possible information, including from scientific studies sponsored by the Council and others and from traditional and local knowledge. If you have comments on the proposed changes — and especially if you have additional information that should be considered before any changes are made final — **please submit written comments to: *Exxon Valdez* Oil Spill Trustee Council, Attention: Recovery Updates, 645 G Street, Suite 401, Anchorage, Alaska 99501** (e-mail: restoration@oilspill.state.ak.us). To be most helpful, comments should be received by **February 5, 1999. In addition testimony will be accepted at a public hearing at the Restoration Office in Anchorage on January 21, 1999, from 7:00-8:30 pm and again on January 22, starting at 8:30 am.**

Here is additional background information that should help you understand what is proposed:

List of Injured Resources and Services

Chapter 4 of the *Restoration Plan* indicates that the List of Injured Resources and Services (p. 32, Table 2) will be reviewed as new information is obtained. The proposed revisions include changes to the recovery status of some resources (for example, moving sockeye salmon from the "recovering" category to the "recovered" category). No additions to the list are proposed at this time.

Chapter 5: Goals, Objectives, and Strategies

Chapter 5 of the *Restoration Plan* (pp. 33-56) discusses general goals and strategies for restoring injured resources and services and also provides specific information on the status, recovery objectives, and restoration strategies for individual resources and services. In the attached document, the Council now proposes updated information on the status of injured resources but not on the status of lost or reduced services (a review of the status of services is on a slightly different schedule, as noted below). In a few cases, small changes are proposed to recovery objectives and these are indicated as "proposed recovery objectives."

The Council recognizes that ecosystems are dynamic and would have varied or changed even in the absence of the oil spill. Most recovery objectives, however, make reference to prespill numbers or conditions. The *Restoration Plan* states:

> In general, resources and services will have recovered when they return to conditions that would have existed had the spill not occurred. Because it is difficult to predict conditions that would have existed in the absence of the spill, recovery is often defined as a return to prespill conditions...

Thus, the Council continues to use prespill numbers or conditions as the most useful benchmark in evaluating the status of recovery.

No changes in restoration strategies are proposed here. Readers are referred to annual work plans and invitations to submit proposals (the *Invitation to Submit Restoration Proposals for Federal Fiscal Year 2000 should be available in February 1999*) for the most current information on the restoration strategies chosen by the Council to achieve its recovery objectives.

Lost or Reduced Services

The September 1996 version of the summaries for lost or reduced services, including commercial fishing, recreation and tourism, and subsistence, is reprinted at the end of this document. The Restoration Office and Trustee agencies are in the process of evaluating these services and will propose status changes and updated summaries. These proposed changes should be available early in February and will be mailed to recipients of this document. The Trustee Council invites comments or new information on the status of lost or reduced services. **Written comments on lost or reduced services are due February 26, 1999, with an opportunity for public testimony at a Trustee Council meeting tentatively scheduled for March 1.**

Thank you for your interest in restoration following the *Exxon Valdez* oil spill.

Sincerely,

Molly McCammon

Molly McCammon
Executive Director

Resources and Services Injured by the Spill

Note: This table is modified from page 32 in Chapter 4 of the Restoration Plan. The status of resources in bold type is proposed to be changed.

Recovered
Bald eagle
Pink salmon*
River otter

Recovering
Archaeological resources**
Black Oystercatcher
Clams
Common murres
Intertidal communities
Marbled murrelets
Mussels
Pacific herring
Sea otter***
Sediments
Sockeye salmon
Subtidal communities

Human Services
Status of lost or reduced services has not been evaluated or revised here.

Recreation & tourism
Commercial fishing
Passive uses
Subsistence

Not Recovering
Common loon
Cormorants (3 spp.)
Harbor seal
Harlequin duck
Killer whale (AB pod)
Pigeon guillemot

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

*There is still concern about localized impacts on intertidal spawners in streams where there are small pockets of residual oil.

**Archaeological resources are not renewable in the same way that biological resources are, but there has been significant progress toward the recovery objective.

***Except in oiled bays on Knight Island.

Contents

This publication was released by the Exxon Valdez Oil Spill Trustee Council and produced at a cost of $0.70 per copy.

Archaeological Resources

Injury and Recovery

The oil-spill area is believed to contain more than 3,000 sites of archaeological and historical significance. Twenty-four archaeological sites on public lands are known to have been adversely affected by cleanup activities or looting and vandalism linked to the oil spill. Additional sites on both public and private lands were probably injured, but damage assessment studies were limited to public land and not designed to identify all such sites.

Documented injuries include theft of surface artifacts, masking of subtle clues used to identify and classify sites, violation of ancient burial sites, and destruction of evidence in layered sediments. In addition, vegetation was disturbed, which exposed sites to accelerated erosion. The effect of oil on soil chemistry and organic remains may reduce or eliminate the utility of radiocarbon dating in some sites.

Assessments of 14 sites in 1993 suggested that most of the archaeological vandalism that can be linked to the spill occurred early in 1989, before adequate constraints were put into place over the activities of oil spill clean-up personnel. Most vandalism took the form of "prospecting" for high yield sites. Once these problems were recognized, protective measures were implemented and successfully limited additional injury. In 1993, only two of the 14 sites visited showed signs of continued vandalism. In 1996, there was evidence of vandalism at five sites, but only at one site in 1997. Natural erosion is the major agent of degradation at the sites, and the erosion draws the attention of looters to the exposed artifacts. Nine years after the oil spill it is difficult to attribute the recent cases of vandalism to discovery of these sites at the time of the oil spill.

Oil was visible in the intertidal zones of two of the 14 sites monitored in 1993, and hydrocarbon analysis has shown that the oil at one of the sites was from the *Exxon Valdez* spill. Hydrocarbon concentrations at the second site were not sufficient to permit identification of the source or sources of the oil. The presence of oil in sediment samples taken from four sites in 1995 did not appear to have been the result of re-oiling by *Exxon Valdez* oil.

In 1993, the Trustee Council provided part of the construction costs for the Alutiiq Archaeological Repository in Kodiak. This facility now houses Kodiak-area artifacts that were collected during the time of spill response. Artifacts recovered from injured sites in lower Cook Inlet and Prince William Sound currently are stored at the University of Alaska Fairbanks or elsewhere. The Trustee Council continues to consider appropriate options for storing or displaying these artifacts.

Two sites in Prince William Sound were so badly damaged by oiling and erosion that they were partly documented, excavated, and stabilized by professional archaeologists in 1994-1997. It appears that the two sites were intermittently occupied for periods of 2,000 and 3,000 years. Most of the cultural deposits are prehistoric in nature.

Starting in 1996, the Trustee Council funded a project to involve local residents in monitoring and protecting vulnerable sites in the Kenai, Homer, Seldovia, Kodiak, and Chignik areas. This project was based on the premise that successful long-term stewardship depends on community support and involvement. A report on this project is due in 1999. Based on the apparently low rate of spill-related vandalism and progress in the preservation of artificats and scientific data on archaeological sites and artifacts, archaeological resources are considered to be recovering.

Recovery Objective

Archaeological resources are nonrenewable: they cannot recover in the same sense as biological resources. Archaeological resources will be considered to have recovered when spill-related injury ends, looting and vandalism are at or below prespill levels, and the artifacts and scientific data remaining in vandalized sites are preserved (e.g., through excavation, site stabilization, or other forms of documentation).

Bald Eagles

Injury and Recovery

The bald eagle is an abundant resident of marine and riverine shoreline throughout the oil-spill area. Following the oil spill, a total of 151 eagle carcasses was recovered from the spill area. Prince William Sound provides year-round and seasonal habitat for about 6,000 bald eagles, and within the sound it is estimated that about 250 bald eagles died as a result of the spill. There were no estimates of mortality outside the sound, but there were deaths throughout the spill area.

In addition to direct mortalities, productivity was reduced in oiled areas of Prince William Sound in 1989. Productivity was back to normal in 1990 and 1991, and an aerial survey of adults in 1995 indicated that the population had returned to or exceeded its prespill level in the sound.

In September 1996, the Trustee Council classified the bald eagle as fully recovered from the effects of the oil spill. No additional work has been carried out specifically to assess the status of the bald eagle. However, the bald eagle has benefited enormously from the habitat protection program, including the acquisition of more than 1,200 miles of marine shoreline and 280 anadromous fish streams.

Recovery Objective

Bald eagles will have recovered when their population and productivity have returned to prespill levels.

Black Oystercatchers

Injury and Recovery

Black oystercatchers spend their entire lives in or near intertidal habitats and are highly vulnerable to oil pollution. It is estimated that 1,500-2,000 oystercatchers breed in south-central Alaska. Only nine carcasses of adult oystercatchers were recovered following the spill, but the actual number of mortalities may have been considerably higher.

In addition to direct mortalities, breeding activities were disrupted by the oil and cleanup activities. When comparing 1989, the year of the spill, with 1991, significantly fewer pairs occupied and maintained nests on oiled Green Island, while during the same two years the number of pairs and nests remained similar on unoiled Montague Island. Nest success of pairs on Green Island was significantly lower in 1989 than in 1991, but Green Island nest success in 1989 was not lower than on Montague Island. In 1989, chicks disappeared from nests at a significantly greater rate on Green Island than from nests on Montague Island. Disturbance associated with cleanup operations also reduced productivity on Green Island in 1990. In general, the overt effects of the spill and cleanup had dissipated by 1991, and in that year productivity on Green Island exceeded that on Montague Island.

From 1991-1993, the Trustee Council sponsored a study to determine if there were any persistent effects of the spill on breeding success and feeding ecology of black oystercatchers on Knight Island. Adult oystercatchers foraged in oiled mussel beds, but also obtained invertebrate prey at unoiled sites. As late as 1993, there was direct evidence of hydrocarbon exposure from fecal samples of chicks raised on persistently oiled shorelines, but areas of contamination were patchily distributed and relatively few adults and young were exposed. In 1989, chicks raised on oiled shorelines gained weight more slowly than chicks reared on unoiled shores, but the slower weight gain was not manifested in reduced fledging success. Pair surveys from 1991-1993 indicated that the population inhabitating Knight Island was not increasing. Hydrocarbon exposure has not been tested since 1993.

Productivity and survival of black oystercatchers in Prince William Sound were not monitored from 1993 through 1997. Boat-based surveys of marine birds in the sound did not indicate recovery in numbers of oystercatchers in oiled areas through 1998, but these surveys were not specifically designed to monitor oystercatchers.

In 1998 the Trustee Council sponsored a field study to reassess the status of this species in Prince William Sound. Only preliminary results of this study are available, but these data indicate that oystercatchers have fully reoccupied and are nesting at oiled sites in the sound. The breeding phenology of nesting birds was relatively synchronous in oiled and unoiled areas, and no oil-related differences in clutch size, egg volume, or chick growth rates were detected. A high rate of nest failures on Green Island probably can be attributed to predation, not lingering effects of oil. Given general agreement between these new results and those of the earlier work, which indicated that the effects of the spill had largely dissipated by 1991, recovery of black oystercatchers clearly is underway.

Black oystercatchers nest on rocky beaches and have benefited enormously from the habitat protection program, including the acquisition of more than 1,200 miles of marine shoreline. In addition, introduced foxes were eliminated from two of the Shumagin Islands (Simeonof and Chernabura) in the southwestern part of the spill area. Black oystercatchers were present in low densities on both islands, and in higher densities on nearby fox-free islands. Although the nesting birds have not been surveyed since 1995, when the last of the foxes was removed, the elimination of the introduced predators should increase populations of nesting oystercatchers.

Recovery Objective

Black oystercatchers will have recovered when the population returns to prespill levels and reproduction is within normal bounds. An increasing population trend and comparable hatching success and growth rates of chicks in oiled and unoiled areas, after taking into account geographic differences, will indicate that recovery is underway.

Common Loons

Injury and Recovery

Carcasses of 395 loons of four species were recovered following the spill, including at least 216 common loons. Current population sizes in the spill area are not known for any of these species. In general, however, 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. Common loons injured by the spill probably included a mixture of resident and migrant birds.

Boat-based surveys of marine birds in Prince William Sound indicated that the oil spill had a negative effect on numbers of loons (all species combined) in the oiled parts of the sound. Based on the surveys carried out through 1998, there is no indication of recovery. No additional information on the status of common loons is available.

Recovery Objective

Proposed Revision: Common loons will have recovered when their population returns to prespill levels in the oil-spill area. An increasing population trend in Prince William Sound will indicate that recovery is underway.

Clams

Injury and Recovery

The magnitude of immediate impacts on clam populations varied with the species of clam, degree of oiling, and location. Data from the lower intertidal zone on sheltered beaches suggested that littleneck clams and, to a lesser extent, butter clams were killed and suffered slower growth rates as a result of the oil spill and cleanup activities.

Since the original damage assessment work on clams in 1989 and 1990, the trustee council has not sponsored additional studies focused specifically on clam injury and recovery. Some additional insights are available from projects that included work in intertidal and subtidal habitats: recovery of littleneck and butter clams was incomplete through 1996 on oiled, treated mixed-sedimentary shores where fine sediments had been washed downslope during pressured water treatments. Another project found that shallow subtidal eelgrass communities had generally recovered by 1995, but three species of infaunal bivalve mollusks were more abundant at unoiled reference sites than at oiled sites. Finally, results from the Trustee Council's nearshore vertebrate predator project are preliminary, but it appears that there are healthy populations of subtidal clams at heavily oiled Herring Bay on Knight Island and that recovery of vertebrate predators, such as the sea otter, is not limited due to food supplies. Based on these limited data, clams are recovering, but are not yet fully recovered from the effects of the oil spill.

In communities on the Kenai Peninsula, Kodiak Island, the Alaska Peninsula and in Prince William Sound there are lingering concerns about the effects of the oil spill on clams. The Trustee Council sponsored a project to help restore subsistence uses of clams (see subsistence).

Recovery objective

Clams will have recovered when populations and productivity have returned to levels that would have prevailed in the absence of the oil spill, based on comparisons of oiled and unoiled sites.

Common Murres

Injury and Recovery

About 30,000 carcasses of oiled birds were picked up in the first four months following the oil spill, and 74 percent of them were common and thick-billed murres (mostly common murres). Many more murres probably died than actually were recovered. Based on surveys of index breeding colonies at such locations as the Barren Islands, Chiswell Islands, Triplet Islands, Puale Bay, and Ugiaushak Island, the spill-area population may have declined by about 40 percent following the spill. In addition to direct losses of murres, there is evidence that the timing of reproduction was disrupted and productivity reduced. Interpretation of the effects of the spill, however, is complicated by incomplete prespill data and by indications that populations at some colonies were in decline before the oil spill.

Postspill monitoring at the breeding colonies in the Barren Islands indicated that reproductive success was again within normal bounds by 1993, and it has stayed within these bounds each breeding season since then. During the period 1993-1997, the murres nested progressively earlier by 2-5 days each year, suggesting that the age and experience of nesting birds was increasing, as might be expected after a mass mortality event. By 1997, numbers of murres at the Barren Islands had increased, probably because 3-and 4-year old nonbreeding subadult birds that were hatched there in 1993 and 1994 were returning to their natal nesting colony. This information suggests that recovery is well underway, although the strong 1998 El Niño event apparently disrupted timing and synchrony of nesting at the Barren and Chiswell islands and may, to some extent, have affected reproductive success. The Barren Islands colonies will be surveyed again in 1999.

Although Prince William Sound does not have a large summer population of murres, boat-based surveys of marine birds before and after the oil spill indicated a negative effect on numbers in the sound. Surveys carried out through 1998 have not shown any increase in murres since the spill.

The Alaska Predator Ecosystem Experiment (APEX project), funded by the Trustee Council, is investigating the linkage between murre populations and changes in the abundance of forage fish, such as Pacific herring, sand lance, and capelin. Historical trawl data

Common Murres

analyzed as part of this project supported a decision by the North Pacific Fishery Management Council to limit bycatch of forage fish in commercial fisheries and to preclude the startup of fisheries targeting forage fish (not including herring).

Recovery Objective

Common murres will have recovered when populations at index colonies have returned to prespill levels and when productivity is sustained within normal bounds. Increasing population trends at index colonies will be a further indication that recovery is underway.

Cormorants

Injury and Recovery

Cormorants are large fish-eating birds that spend much of their time on the water or perched on rocks near the water. Three species typically are found within the oil-spill area.

Carcasses of 838 cormorants were recovered following the oil spill, including 418 pelagic, 161 red-faced, 38 double-crested, and 221 unidentified cormorants. Many more cormorants probably died as a result of the spill, but their carcasses were not found.

No regional population estimates are available for any of the cormorant species found in the oil-spill area. In 1996, the U.S. Fish and Wildlife Service Alaska Seabird Colony Catalog, however, listed counts of 7,161 pelagic cormorants, 8,967 red-faced cormorants, and 1,558 double-crested cormorants in the oil-spill area. These are direct counts at colonies, not overall population estimates, but they suggest that population sizes are small. In this context, it appears that injury to all three cormorant species was significant.

Counts on the outer Kenai Peninsula coast suggested that the direct mortality of cormorants due to oil resulted in fewer birds in this area in 1989 compared to 1986. In addition, there were statistically-significant declines in the estimated numbers of cormorants (all three species combined) in the oiled portion of Prince William Sound based on pre- and postspill boat surveys in July 1972-73 compared to 1989-91. More recent surveys (through 1998) have not shown an increasing population trend since the oil spill, and for that reason these species are considered to be "not recovered."

Recovery Objective

Pelagic, red-faced, and double-crested cormorants will have recovered when their populations return to prespill levels in the oil-spill area. An increasing population trend in Prince William Sound will indicate that recovery is underway.

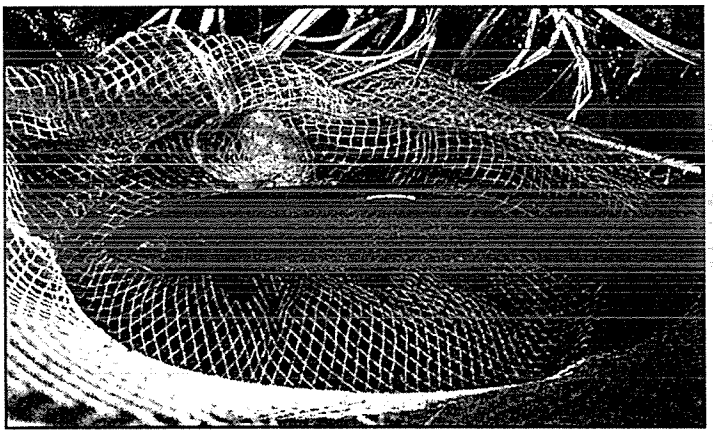
Cutthroat Trout

Injury and Recovery

Prince William Sound is at the northwestern limit of the range of cutthroat trout. Local cutthroat trout populations are believed to be small, and the fish have small home ranges and are geographically isolated. Cutthroat trout, therefore, are highly vulnerable to exploitation, habitat alteration, or pollution.

Following the oil spill, cutthroat trout in a small number of oiled index streams in Prince William Sound grew more slowly than in unoiled streams. The apparent difference in growth rates persisted through 1991. It was hypothesized that the slower rate of growth in oiled streams was the result of reduced food supplies or exposure to oil, and there was concern that reduced growth rates would result in reduced survival.

Preliminary data from a Trustee Council-sponsored study of resident and anadromous forms of cutthroat trout in Prince William Sound suggest that there is significant genetic variation among trout from different locations across the sound. These data are consistent with the idea that cutthroat populations are small and isolated. This work is being completed in FY 1999 and should make possible insights into such issues as growth rates with respect to geographic variation. Pending this additional work, the recovery status of the cutthroat trout remains unknown.



Cutthroat Trout

Cutthroat trout have benefited from several other projects sponsored by the Trustee Council. In 1991-93, in response to the early evidence of injury to cutthroat trout, sport harvests were temporarily restricted in Prince William Sound. In 1994, out of concern about the long-term conservation status of this species, the Alaska Board of Fisheries permanently closed sport harvests during the April 15-June 15 spawning season in the sound.

The Trustee Council sponsored inventories of streams in and around Prince William Sound to identify cutthroat trout habitat and the presence or absence of this species. Information from these inventories has been added to the Alaska Department of Fish and Game's Anadromous Waters Catalog, and this step brings to bear additional legal protection under state law in regard to actions affecting these streams. Additional habitat for cutthroat trout has been protected from among the more than 280 anadromous fish streams that have been acquired through the Trustee Council's habitat protection program.

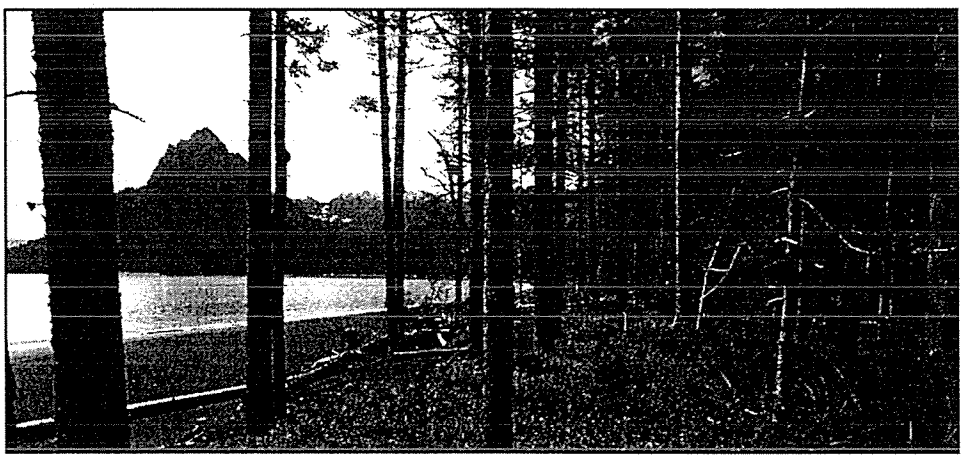
Recovery Objective

Cutthroat trout will have recovered when growth rates within oiled areas are similar to those for unoiled areas, after taking into account geographic differences.

Designated Wilderness Areas

Injury and Recovery

The oil spill delivered oil in varying quantities to the waters and tide lands adjoining eight areas designated as wilderness areas and wilderness study areas by Congress or the Alaska State Legislature. Oil also was deposited above the mean high-tide line at these locations. During the intense clean-up seasons of 1989 and 1990, thousands of workers and hundreds of pieces of equipment were at work in the spill zone. This activity was an unprecedented imposition of people, noise, and activity on the area's undeveloped and normally sparsely occupied landscape. Although activity levels on these wilderness shores have probably returned to normal, at some locations there is still residual oil.



Kenai Fjords National Park

Among the affected areas were designated wilderness in the Katmai National Park, a wilderness study area in the Kenai Fjords National Park, and Kachemak Bay Wilderness State Park. Six moderately to heavily oiled sites on these two coasts were last surveyed in 1994, at which time some oil mousse persisted in a remarkably unweathered state on boulder-armored beaches at five sites. These sites will be visited again in 1999. Pending completion of these visits, the recovery status of designated wilderness remains unknown.

Recovery Objective

Designated wilderness areas will have recovered when oil is no longer encountered in them and the public perceives them to be recovered from the spill.

Dolly Varden

Injury and Recovery

Dolly Varden are widely distributed in the spill area. In spring, anadromous forms of Dolly Varden migrate to the sea from the lakes and rivers where they spend the winter. Summers are spent feeding in nearshore marine waters. Thus, some Dolly Varden in Prince William Sound and perhaps at other locations were exposed to *Exxon Valdez* oil in 1989 and possibly beyond. In fact, concentrations of hydrocarbons in the bile of Dolly Varden were some of the highest of any fish sampled in 1989. By 1990, these concentrations had dropped substantially.

Like the cutthroat trout, there is evidence from 1989-90 that Dolly Varden in a small number of oiled index streams in Prince William Sound grew more slowly than in unoiled streams. It was hypothesized that the slower rate of growth in oiled streams was the result of reduced food supplies or exposure to oil, and there was concern that reduced growth rates would result in reduced survival. However, these growth differences did not persist into the 1990-91 winter. No growth data have been gathered since 1991.

In a 1991 restoration study sponsored by the Trustee Council, some tagged Dolly Varden moved considerable distances among streams within Prince William Sound, suggesting that mixing of overwintering stocks takes place during the summers in saltwater. This hypothesis is supported by preliminary data from another Trustee Council-sponsored study, which indicates that Dolly Varden from different locations across the sound are genetically similar. The final report on this genetics study is due in 1999, but if this preliminary conclusion is born out, it would suggest that the Dolly Varden population in the sound should have little difficulty in recovering from any initial growth-related effects. Pending completion of the genetics work and absent additional growth data, however, it is prudent to continue classifying the Dolly Varden as "recovery unknown."

The Trustee Council sponsored inventories of streams in and around Prince William Sound to identify Dolly Varden habitat and the presence or absence of this species. Information from these inventories has been added to the Alaska Department of Fish and Game's Anadromous Waters Catalog, and this step brings to bear additional legal protection under state law in regard to actions affecting these streams. Additional habitat for Dolly Varden has been protected from among the more than 280 anadromous fish streams that have been acquired through the Trustee Council's habitat protection program.

Recovery Objective

Dolly Varden will have recovered when growth rates within oiled streams are comparable to those in unoiled streams, after taking into account geographic differences.

Injury and Recovery

Harlequin ducks feed in intertidal and shallow subtidal habitats where most of the spilled oil was initially stranded. More than 200 harlequin ducks were found dead in 1989, mostly in Prince William Sound. Many more than that number probably died throughout the spill area. Because the spill occurred in early spring before wintering harlequins migrated from the sound to inland breeding sites, the initial effects of the spill were likely extended beyond the immediate spill zone. The geographic extent of these extended impacts is not known.

The current overwintering population of harlequin ducks in Prince William Sound is on the order of 18,000 ducks, while the summer population is about half that number. Fall boat surveys designed specifically to monitor molting-wintering harlequin ducks indicate a significant declining trend in the western sound. Other boat surveys designed to monitor an entire suite of marine birds in the sound have shown mixed results: an increasing trend in March but no increase in July through 1996. All three surveys, however, are consistent in that they show different or lower trends for harlequin ducks in oiled parts of the sound compared to unoiled parts.

Prespill data on harlequin populations and reproductive success are limited and difficult to interpret, but previously there was concern about poor reproductive success in the western versus eastern parts of Prince William Sound. This concern was based on observations of 7-15 broods in the eastern sound and few-to-no reports of broods in the western sound when comparable numbers of streams were surveyed. Subsequent research does not indicate any differences in the age- and sex-structure of harlequin populations in the eastern and western parts of the sound, but it is clear that the breeding habitat in the western sound is very limited compared to what is available in the eastern sound. Some harlequins remain in the sound to nest, mostly on the eastern side, but it is now suspected that most harlequins of breeding age and condition probably leave the sound altogether to nest in interior drainages. Thus, conclusions of reproductive failure based on lack of broods in the oiled area do not now seem warranted.

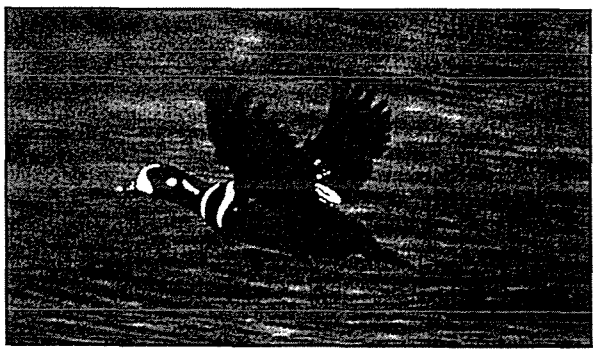
Biopsies from samples of harlequin ducks collected early in 1998 and from Barrow's goldeneye in the 1996-1997 winter continue to show differences in an enzyme indicative of exposure to hydrocarbons between birds from oiled versus unoiled parts of the sound. These differences are consistent with the possibility of continued exposure to hydrocarbons in the oiled western sound. The biological effect of this possible exposure has not been established, but three years of data (1995/96-97/98 winters) on overwintering survival of adult female harlequins indicate significantly lower survival rates in oiled versus unoiled parts of the sound. This result cannot be attributed unequivocally to oil exposure, but there is reason for concern about possible oil exposure and reduced survival for harlequin ducks in the western sound. This information, coupled with indication of a possible on-going decline in numbers of molting harlequin ducks in the western sound, suggest that the harlequin duck has not recovered from the effects of the oil spill.

Recent Trustee Council-sponsored studies give insight into prospects for recovery of harlequin ducks. Although some harlequin ducks make major seasonal movements, they exhibit high site fidelity to summer breeding sites and to molting and wintering sites during nonbreeding seasons. Strong site fidelity may limit population recovery by immigration, but a genetic analysis of harlequin ducks indicates that the spill-area population is homogeneous (i.e., very similar). Taken together, these data are consistent with a low rate of dispersal, perhaps at the subadult stage, or a rapid expansion of the population in recent geological time. To the extent that there is subadult dispersal from adjacent expanding populations, such dispersal would enhance recovery. It is likely, however, that recovery will largely depend on recruitment and survival from within injured populations. This recovery may be compromised if exposure to lingering hydrocarbons reduces fitness and survival of harlequin ducks

The Trustee Council has made a major investment in harlequin ducks, studying the possibility of on-going oil-related effects, gaining knowledge that will benefit long-term management and conservation, and protecting nesting and overwintering habitats. Harlequin ducks nest along anadromous fish streams, typically under forest cover and at higher elevations. Some of the more than 280 anadromous fish streams protected with the support of the Trustee Council provide nesting habitat for harlequin ducks. Molting and overwintering habitats are protected along the more than 1,200 miles of marine shorelines acquired through the habitat protection program. As a result, the terrestrial portion of the habitat base for harlequin ducks in the spill area is now significantly more secure.

Recovery Objective

Proposed Revision: Harlequin ducks will have recovered when breeding- and nonbreeding-season densities return to prespill levels. An increasing population and decreasing indications of exposure to hydrocarbons in oiled parts of Prince William Sound will indicate that recovery is underway.



Harlequin Duck

HARBOR SEALS

Injury and Recovery

Harbor seal numbers were declining in the Gulf of Alaska, including in Prince William Sound, before the oil spill. *Exxon Valdez* oil affected harbor seal habitats, including key haul-out areas and adjacent waters, in Prince William Sound and as far away as Tugidak Island, near Kodiak. Estimated mortality as a direct result of the oil spill was about 300 seals in oiled parts of Prince William Sound. Based on aerial surveys conducted at trend-count haulout sites in central Prince William Sound before (1988) and after (1989) the oil spill, seals in oiled areas declined by 43 percent, compared to 11 percent in unoiled areas.

In a declining population deaths exceed births, and harbor seals in both oiled and unoiled parts of Prince William Sound have continued to decline since the spill. For the period 1989-1997, the average estimated annual rate of decline was about 5 percent, and for that reason harbor seals continue to be considered "not recovered." Environmental changes in the late 1970s may have reduced the amount or quality of prey resources, including such forage fishes as Pacific herring and capelin, available to harbor seals in the northern Gulf of Alaska ecosystem. These

Harbor Seal

changes may have been responsible for or contributed to the initial prespill harbor seal decline, and the ecosystem may now support fewer seals than it did prior to the late 1970s. Recent studies, however, indicate that the seals in the sound, especially pups and yearlings, are in very good condition and do not show evidence of nutritional stress. On-going sources of mortality include killer whale predation, subsistence hunting, and commercial fishery interactions (e.g., drowning in nets). Satellite tagging studies sponsored by the Trustee Council indicate that harbor seals in the sound are largely resident throughout the year, suggesting that recovery must come largely through recruitment and survival within injured populations.

Harbor seals have been a major focus of research sponsored by the Trustee Council since the oil spill. This research includes documentation of population trends in the field, improved statistical techniques for the analysis of aerial survey data, and exploration of possible sources of mortality and lack of recovery in the population, including health and diet. One study quantified normal blood chemistry values for several hundred seals; this database serves as a valuable tool for evaluating the health status of other seals. Starting in 1998, several projects exploring blood chemistry and other health parameters in relation to diet are being carried out at the Alaska SeaLife Center.

Harbor seals have long been a key subsistence resource in the oil-spill area. Subsistence hunting is affected by the declining seal population, and fewer opportunities to hunt seals have changed the diets of subsistence users who traditionally relied on these marine mammals. With partial support from the Trustee Council, the Alaska Native Harbor Seal Commission is working to involve Native hunters in research on and management of harbor seals. Alaska Native subsistence hunters have been helpful by providing seal researchers with measurements and hard-to-obtain tissue samples from harvested seals.

Recovery Objective

Harbor seals will have recovered from the effects of the oil spill when their population is stable or increasing.

INTERTIDAL COMMUNITIES

Injury and Recovery

Portions of 1,300 miles of coastline were oiled by the spill in Prince William Sound, on the Kenai and Alaska peninsulas, and in the Kodiak Archipelago. Both the oil and intensive clean-up activities had significant impacts on the flora and fauna of the intertidal zone, the area of beach between low and high tides. Intertidal communities are intrinsically important and are resources for subsistence users, sea and river otters, and a variety of birds, including black oystercatchers, harlequin ducks, and pigeon guillemots.

Initial impacts to intertidal organisms occurred at all tidal levels and in all types of habitats throughout the oil-spill area. Many species of algae and invertebrates were less abundant at oiled sites than at unoiled reference sites. Some, more opportunistic species, including a small species of barnacle, oligochaete worms, and filamentous brown algae, colonized shores affected by the oil spill and clean-up activities. The abundance and reproductive potential of the common seaweed, *Fucus gardneri* (known as rockweed or popweed), also was reduced following the spill.

In the lower and middle intertidal zones on oiled rocky shores, algal coverage and invertebrate abundances had returned by 1991 to coverages and abundances similar to those observed in unoiled areas. However, large fluctuations in the algal coverage took place through 1997 in the oiled areas. This pattern is consistent with continued instability due to the original spill impact and the subsequent cleanup.

On the sheltered, bedrock shores that are common in Prince William Sound, full recovery of *Fucus* is crucial for the recovery of intertidal communities at these sites, since many invertebrate organisms depend on the cover provided by this seaweed. *Fucus* has not yet fully recovered in the upper intertidal zone on shores subjected to direct sunlight, but in many locations, recovery of

intertidal communities has been substantial. In other habitat types, such as estuaries and cobble beaches, many species did not show signs of recovery when they were last surveyed in 1991. In studies of the effects of cleanup activities on beaches, invertebrate molluscs and annelid worms on oiled and washed beaches were still much less abundant than on comparable unoiled beaches through 1997.

Beyond describing the effects of the oil spill and cleanup operations, the Trustee Council's restoration program has benefited intertidal communities in several respects. Although most tidelands in the spill area are already in state ownership, Trustee Council funds enabled the protection of sedge and mudflat habitats on the Homer Spit and enhanced protection of and access to rocky intertidal habitats at Kachemak Bay and at Lowell Point near Seward. Research and monitoring sponsored by the Trustee Council have greatly expanded knowledge of the distribution and ecology of north Pacific intertidal organisms, such as sea stars, and have provided models for statistically powerful sampling designs that can be incorporated into future injury assessments.

Recovery Objective

Intertidal communities will have recovered when community composition on oiled shorelines is similar to that which would have prevailed in the absence of the spill. Indications of recovery are the reestablishment of important species, such as *Fucus* at sheltered rocky sites, the convergence in community composition and organism abundance on oiled and unoiled shorelines, and the provision of adequate, uncontaminated food supplies for top predators in intertidal and nearshore habitats.

Kittlitz's Murrelets

Injury and Recovery

The Kittlitz's murrelet is found only in Alaska and portions of the Russian Far East. A large fraction of the world population, which may number only a few tens of thousands, breeds in Prince William Sound. The Kenai Peninsula coast and Kachemak Bay are also important concentration areas for this species. Very little is known about Kittlitz's murrelets, but they are known to associate closely with tidewater glaciers and nest on scree slopes and similar sites on the ground.

Seventy-two Kittlitz's murrelets were positively identified among the bird carcasses recovered after the oil spill. Nearly 450 more *Brachyramphus* murrelets were not identified to the species level, and it is reasonable to assume that some of these were Kittlitz's. In addition, many more murrelets probably were killed by the oil than were actually recovered. One published estimate places direct mortality of Kittlitz's murrelets from the oil spill as high as 1,000-2,000 individuals, which would represent a substantial fraction of the world population.

Because so little is known about this species, the Trustee Council funded an exploratory study on the ecology and distribution of the Kittlitz's murrelet in Prince William Sound starting in 1996. Final results from this project are not yet available, but preliminary data confirm this species' affinity for tidewater glaciers in the four bays studied in the northern and northwestern parts of the sound. It also appears that reproductive output in 1996 and 1997 was extremely low or absent, and some Kittlitz's murrelets were apparently paired with marbled murrelets. There appear to be about 1,200-1,400 Kittlitz's murrelets during summer in the four bays studied in northern and northwestern sound. Other, more extensive marine bird boat surveys suggest a sound-wide summer population of at least 3,400 murrelets. These estimates are consistent with what is believed to be a small Alaskan and world population.

The population data, indications of low reproductive success, and affinity to tidewater glaciers (of which the lower elevation glaciers are receding rapidly) are reasons for concern about the long-term conservation of Kittlitz's murrelets. Specifically with reference to the effects of the oil spill, however, the original extent of the injury and its recovery status are still unknown and may never be resolved.

Recovery Objective

No recovery objective can be identified for Kittlitz's murrelet at this time.

Killer Whales

Injury and Recovery

More than 100 killer whales in six "resident" pods regularly use Prince William Sound as part of their ranges. Other whales in "transient" groups are observed in the sound less frequently. There has been particular concern in the sound about the resident AB pod, which numbered 36 animals prior to the spill. Fourteen whales disappeared from this pod in 1989 and 1990, during which time no young were recruited into the population. During the period 1992-94, four calves were added to the pod, but five additional adults were lost and presumed dead. During the most recent period, 1996-98, fives calves were recruited and only two adults were lost—a net gain of three individuals since 1992. Thus, it is possible that recovery is now underway. If the calves born since 1992 survive and if additional calves are added to the pod over the next two or more years, the requirements for recovery will have been satisfied.

The original link between the AB pod

losses and the oil spill was circumstantial. The rate of disappearance and likely mortality of killer whales in this well-studied pod in Prince William Sound following the spill far exceeded rates observed for other pods in British Columbia and Puget Sound over the last 20 years. In addition to the effects of the oil spill, there had been concern about the possible shooting of killer whales due to conflicts with long-line fisheries prior to the oil spill. There are no recent indications of such conflicts.

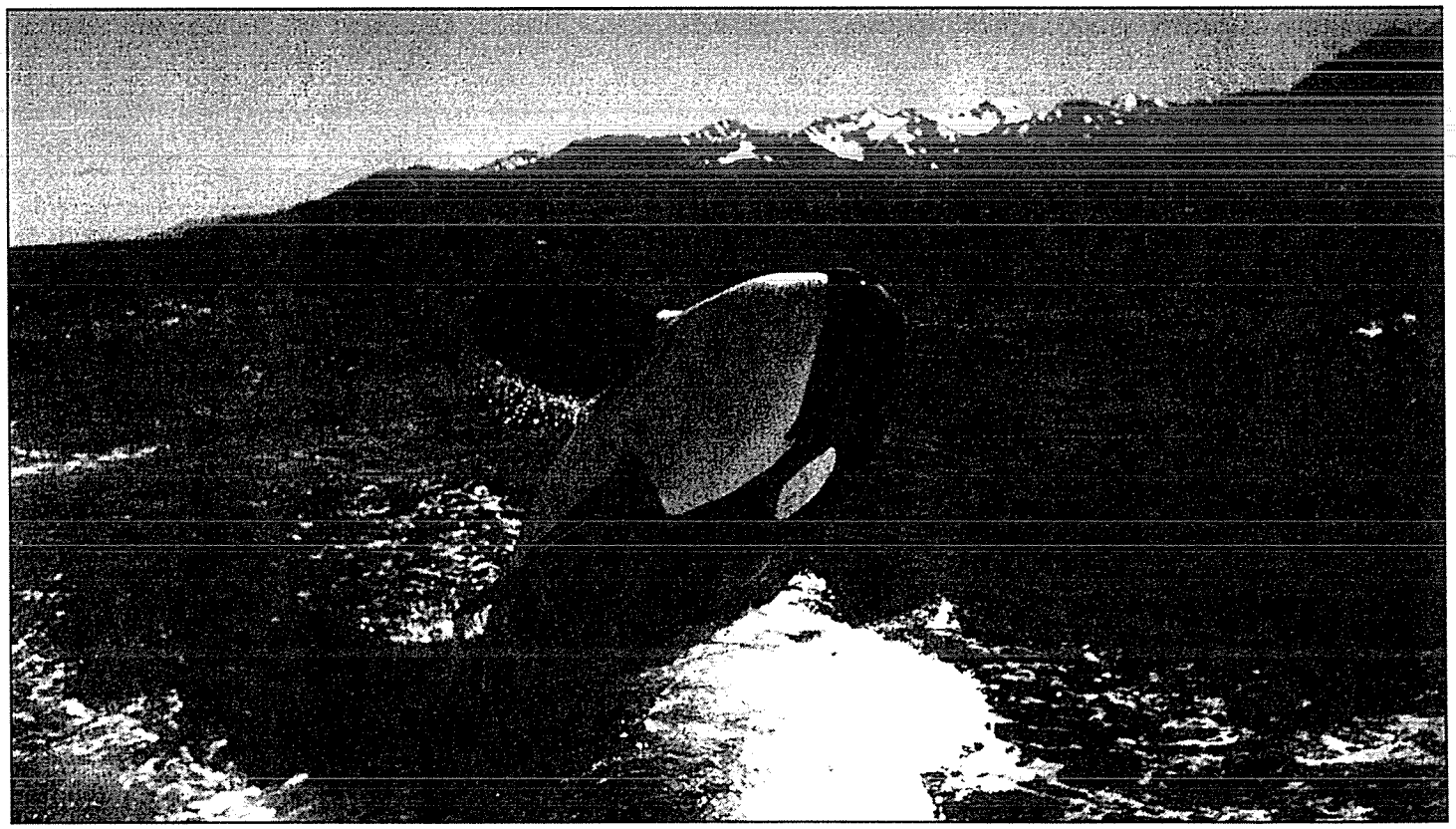
Overall numbers within the major resident killer whale pods in Prince William Sound are at or exceed prespill levels, even though the AB pod may or may not regain its former size. There is concern, however, that a decline in resightings of individuals within the AT1 group of transient killer whales has accelerated following the oil spill. Since 1990 and 1991, 10 individuals have been missing from the AT group and are now almost certainly dead. During that same period there has been no recruitment of calves into this group of transients. Transient killer whales largely prey on marine mammals, and there has been a 60 percent decline in the harbor seal population in the sound over the last two decades. Changes in the availability of such an important prey species could influence killer whale distribution and reproduction.

Trustee Council-sponsored research on contaminants in killer whales in Prince William Sound indicates that some whales are carrying high concentrations of PCBs, DDT, and DDT metabolites in their blubber. The presence of such contaminants is not related to the oil spill. Contaminants are significantly higher in the mammal-eating transients than in the fish-eating residents, consistent with the fact that contaminants bioaccumulate—that is they are more concentrated at higher trophic levels. Concentrations are highest in first-born calves, indicating that contaminants are passed on by nursing females. The high concentrations of contaminants found in the transient whales, including those in the AT1 group, are comparable to those found to cause reproductive problems in other marine mammals, but there is no unequivocal evidence of a link between contaminants and poor reproduction in the AT1 group.

Other work sponsored by the Trustee Council includes a detailed genetic analysis that has shown definitively that resident and transient killer whales in Prince William Sound are genetically distinct. The Trustee Council also has sponsored development of acoustic techniques for identifying and monitoring killer whales. Data on sightings and movements of killer whales indicate that the area around Knight Island and passages to Knight Island are among the most heavily used parts of Prince William Sound by both resident and transient killer whales. Use of the outer Kenai coast, including Resurrection Bay, appears to be increasing.

Recovery Objective

Killer whales in the AB pod will have recovered when the number of individuals in the pod is stable or increasing relative to the trends of other major resident pods in Prince William Sound.



Killer Whale

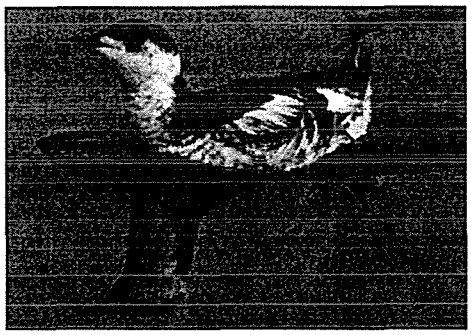
Marbled Murrelets

Injury and Recovery

The northern Gulf of Alaska, including Prince William Sound, is a key area of concentration in the distribution of marbled murrelets. The marbled murrelet is federally listed as a threatened species in Washington, Oregon, and California; it also is listed as threatened in British Columbia.

The marbled murrelet population in Prince William Sound had declined before the oil spill. The causes of the prespill decline are not known for certain, but environmental changes in the late 1970s probably reduced the availability or quality of prey resources. There is, nonetheless, clear evidence that oil caused injury to the marbled murrelet population in the sound. Carcasses of nearly 1,100 *Brachyramphus* murrelets were found after the spill, and about 90 percent of the murrelets that could be identified to the species level were marbled murrelets. Many more murrelets probably were killed by the oil than were found, perhaps as much as 7 percent of the spill area population.

The marbled murrelet population in Prince William Sound is assessed through standard marine bird boat surveys. Based on the boat surveys carried out through 1998, there has been no statistically significant



Marbled Murrelet

increase in the sound's marbled murrelet population since the spill. There also is no evidence of a further decline.

The Trustee Council's recovery objective requires a stable or increasing population for marbled murrelets. Based on the information above, it appears that this species is at least recovering from the effects of the oil spill.

Marbled murrelets have been a major focus of the Trustee Council's restoration program, including both habitat protection and research and monitoring activities. Marbled murrelets are known to nest in large, mossy trees within stands of old-growth forest. Following the oil spill, Trustee Council researchers identified specific habitat types and areas within the spill zone that are especially valuable to nesting murrelets. Much of the 600,000 acres of habitat protected with Trustee Council funds is forested, including significant habitat that is suitable for and used by nesting murrelets (for example, on Afognak Island).

In the area of research and monitoring, the Trustee Council's Alaska Predator Ecosystem Experiment (APEX) project is investigating the relationship between marbled murrelet declines and the availability and abundance of forage fish, such as Pacific herring, sand lance, and capelin. It appears that there is a direct correlation between the availability of forage fish and production of young murrelets, based on the presence of juvenile murrelets on the water in Prince William Sound. Historical trawl data analyzed as part of this project supported a decision by the North Pacific Fishery Management Council to limit bycatch of forage fish in commercial fisheries and to preclude the startup of fisheries targeting forage fish (not including herring).

Recovery Objective

Proposed Revision: Marbled murrelets will have recovered when their populations are stable or increasing. Sustained productivity within normal bounds will be an indication that recovery is underway.

Mussels

Injury and Recovery

Mussels are an important prey species in the nearshore ecosystem throughout the spill area and are locally important for subsistence. Beds of mussels provide physical stability and habitat for other organisms in the intertidal zone and were purposely left alone during *Exxon Valdez* cleanup operations.

In 1991, high concentrations of relatively unweathered oil were found in the mussels and in underlying byssal mats and sediments in certain dense mussel beds. The biological significance of mussel beds that are still oiled is not known precisely, but they are potential pathways of oil contamination for local populations of harlequin ducks, black oystercatchers, river otters, and sea otters, all of which feed to some extent on mussels and other prey in and around mussel beds and which were injured by the oil spill. The Trustee Council's Nearshore Vertebrate Predator project has evidence of possible hydrocarbon exposure in sea otters, river otters, harlequin ducks, and Barrow's goldeneyes in oiled parts of Prince William Sound through 1996 or 1997, but the pathway of such exposure has not been established.

About 30 mussel beds in Prince William Sound still contained *Exxon Valdez* oil residue when last sampled in 1995. Twelve of these beds had been cleaned on an experimental basis in 1994. In 1995, oil hydrocarbon concentrations in mussels at half the treated beds were lower than would have been expected if the beds had not been cleaned. In 1996, however, limited sampling indicated that several of the cleaned beds had been recontaminated from surrounding or underlying oil residue.

Mussel beds along the outer Kenai Peninsula coast, the Alaska Peninsula, and Kodiak Archipelago were surveyed for the presence of oil in 1992, 1993, and 1995. In

1995, hydrocarbon concentrations in mussels and sediments at these Gulf of Alaska sites were generally lower than for sites in Prince William Sound, but at some sites substantial concentrations persist.

While several sites in Prince William Sound still contained high concentrations of oil in 1995, over half the sites surveyed demonstrated significant natural declines that suggest background concentrations should be reached in the next few years. Oil contamination in mussels, however, will likely persist for many years at certain sites that are well protected from wave action or where oil penetrated deeply into underlying sediments.

In 1999, a series of oiled mussel beds will be inspected and monitored to track the recovery of this resource. Comparison of mussel beds cleaned in 1994 to beds that were not cleaned should provide valuable information for planning responses to future oil spills.

Recovery Objective

Mussels will have recovered when concentrations of oil in the mussels and in the sediments below mussel beds reach background levels, do not contaminate their predators, and do not affect subsistence uses.

Pacific Herring

Injury and Recovery

Pacific herring spawned in intertidal and subtidal habitats in Prince William Sound shortly after the oil spill. A significant portion of these spawning habitats as well as herring staging areas in the sound were contaminated by oil. Field studies conducted in 1989 and 1990 documented increased rates of egg mortality and larval deformities in oiled versus unoiled areas. Subsequent laboratory studies confirm that these effects can be caused by exposure to *Exxon Valdez* oil, but the significance of these injuries at a population level is not known.

The 1988 prespill year-class of Pacific herring was very strong in Prince William Sound, and, as a result, the estimated peak biomass of spawning adults in 1992 was at a record level. Despite the record spawning biomass in 1992, the population exhibited a density-dependent reduction in size, and in 1993 there was an unprecedented crash of the adult herring population. A viral disease and fungus were the probable immediate agents of mortality, but such other factors as competition for food may have reduced herring fitness and survival. Laboratory investigations since the population crash have shown that exposure to very low concentrations of *Exxon Valdez* oil can compromise the immune systems of adult herring and lead to expression of the viral disease. The extent to which the exposure to oil contributed to the 1993 disease outbreak is uncertain.

Numbers of spawning herring in Prince William Sound remained depressed through the 1995 season. In 1997 and 1998 there were limited commercial harvests for herring in the sound, but the population has yet to recruit a highly successful year-class, which is fundamental to recovery of this species. Thus, while it is clear that the Pacific herring is in the process of recovering, a full recovery has not been achieved.

Because the Pacific herring is extremely important ecologically and commercially and for subsistence users, the Trustee Council has made a major investment in restoration projects that benefit herring. In the area of habitat protection, Trustee Council funds have acquired more than 1,200 miles of upland shorelines, some of which will help protect water quality in areas used by spawning herring. Research sponsored by the Trustee Council also has identified bays that are important as herring nursery and overwintering areas, and this information will be useful to natural resource managers for decisions about siting facilities or planning responses to future oil spills.

The Trustee Council's Sound Ecosystem Assessment has resulted in new understanding of the importance of body condition in determining overwintering survival of herring and in the influences of the Gulf of Alaska in herring productivity within Prince William Sound. Techniques for improving stock and spawning biomass assessments through spawn deposition surveys and hydroacoustic and aerial surveys also have been supported by the Trustee Council. Ongoing research on herring disease in relation to commercial fishing practices, such as the enclosed "pound" fisheries, have direct implications for management of the herring fishery. Improvements in knowledge about the biology and ecology of herring and in assessment and management tools will enhance conservation and management of this species over the long term.

Recovery Objective

Pacific herring will have recovered when the next highly successful year class is recruited into the fishery and when other indicators of population health are sustained within normal bounds in Prince William Sound.

Pacific Herring

Pigeon Guillemots

Injury and Recovery

Although pigeon guillemots are widely distributed in the north Pacific region, nowhere do they occur in large concentrations. Because guillemots feed in shallow, nearshore waters, the guillemots and the fish on which they prey are vulnerable to oil pollution.

Like the marbled murrelet, there is evidence that the pigeon guillemot population in Prince William Sound declined before the oil spill. The causes of the prespill decline are not known for certain, but environmental changes in the late 1970s probably reduced the availability or quality of prey resources. There is, nonetheless, clear evidence that oil caused injury to the guillemot population in the sound. An estimated 10-15 percent of the spill-area population died immediately following the spill. Boat-based surveys of marine birds before (1984-85) and after the oil spill indicated that the guillemot population declined throughout the oiled portion of the sound. These same surveys indicate that numbers of guillemots remain depressed along oiled shorelines in the sound through 1998, and for this reason the pigeon guillemot is still considered to have not recovered from the effects of the oil spill.

The Trustee Council's Alaska Predator Ecosystem Experiment (APEX) project is investigating the possible link between pigeon guillemot declines and the availability of high-quality forage fish, such as Pacific herring and sand lance. This work has revealed a strong connection between the availability of certain prey fishes, especially sand lance, and guillemot chick growth rates, fledging weights, and nesting population size. Historical trawl data analyzed as part of this project supported a decision by the North Pacific Fishery Management Council to limit bycatch of forage fish in commercial fisheries and to preclude the startup of fisheries targeting forage fish (not including herring).

The Nearshore Vertebrate Predator (NVP) project, also sponsored by the Trustee Council, addresses the possibility that exposure to oil is limiting the guillemot's recovery. Preliminary biochemical data do not indicate that guillemot chicks are being exposed to hydrocarbons.

Pigeon guillemots nest in rock crevices and under tree roots at the tops of rocky cliffs and steep slopes. They have benefited greatly from the habitat protection program, including the acquisition of more than 1,200 miles of marine shoreline. In addition, introduced foxes were eliminated from two of the Shumagin Islands (Simeonof and Chernabura) in the southwestern part of the spill area. Pigeon guillemots were present in low densities on both islands, but in higher densities on nearby fox-free islands. Although the nesting birds have not been surveyed since the foxes were removed in 1995, the elimination of this introduced predator should result in a large increase in the population of nesting guillemots.

Recovery Objective

Pigeon guillemots will have recovered when their population is stable or increasing. Sustained productivity within normal bounds will be an indication that recovery is underway.

Pink Salmon

Injury and Recovery

Certain features of the life history of pink salmon made this species highly vulnerable to damage from the oil spill. As much as 75 percent of wild pink salmon in Prince William Sound spawn in the intertidal portions of streams, where embryos deposited in the gravel could be chronically exposed to hydrocarbon contamination in the water column or leaching from oil deposits on adjacent beaches. When juvenile pink salmon migrate to saltwater they spend several weeks foraging for food in nearshore habitats. Thus, juvenile salmon entering seawater from both wild and hatchery sources could have been exposed to oil as they swam through oiled waters and fed along oiled beaches. Trustee Council-sponsored studies have documented two primary types of injury due to the exposure of these early life stages: First, growth rates in both wild and hatchery-reared juvenile pink salmon from oiled parts of the sound were reduced. Second, there was increased egg mortality in oiled versus unoiled streams.

In the years preceding the spill, returns of wild pink salmon in Prince William Sound varied from a maximum of 23.5 million fish in 1984 to a minimum of 2.1 million in 1988. Since the spill, returns of wild pinks have varied from a high of about 12.7 million fish in 1990 to a low of about 1.9 million in 1992. The decade preceding the oil spill was a time of very high productivity for pink salmon in the sound, and, given the tremendous natural variation in adult returns, it is impractical to measure directly the extent to which wild salmon returns since 1989 were influenced by the oil spill. Based on intensive studies, including mathematical models, carried out following the spill, wild adult pink salmon returns to the sound's Southwest District in 1991 and 1992 were most likely reduced by a total of 11 percent.

Reduced juvenile growth rates in Prince William Sound occurred only in the 1989 season, but higher egg mortality persisted in oiled compared to unoiled streams through 1993. No statistically significant differences in egg mortalities in oiled and unoiled streams were detected in 1994 through 1996, but in 1997 there was again a difference. It is not clear whether the 1997 difference was due to the effects of lingering weathered oil, perhaps newly exposed by storm-related disturbance of adjacent beaches, or due to other factors.

Patches of weathered oil still persist in or near intertidal spawning habitats in a few of the streams used by pink salmon in southwestern Prince William Sound. It is possible that patches of oil may be exposed as winter storms shift stream beds back and forth and result in local

episodes of increased pink salmon egg mortality. The duration, scale, and number of any such events now would be very limited in comparison to the situation that existed in the southwestern sound in 1989-1993. Moreover, the biological impact of exposure to any such lingering oil should not limit pink salmon populations, assuming there are no drastic negative changes in the quality of freshwater habitats and ocean rearing conditions. Thus, with the exception of a few streams with patches of lingering oil in the southwestern sound, there is no longer any basis to suspect that the oil spill is affecting pink salmon populations in the sound. Overall, pink salmon have recovered from the effects of the *Exxon Valdez* oil spill.

The Trustee Council has made a major investment in studying the effects of the oil spill on pink salmon and in improving conservation and management of wild stocks in Prince William Sound. Studies on the effects of oil on pink salmon have led to new insights about how oil can affect salmon, especially in regard to the toxicity of even very small concentrations of weathered oil on early life stages. This information will be useful in evaluating water quality standards for oil in water and in contingency planning for future oil spills.

The Trustee Council has sponsored several projects directed at improved management of pink salmon. One of the most beneficial projects sponsored by the Trustee Council was development and implementation of a thermal mass marking project in Prince William Sound. This project, which is now being sustained by the Alaska Department of Fish and Game and the Prince William Sound Aquaculture Association, puts a unique mark on the otoliths (ear bone) of hatchery-reared fry released in the sound. Technicians can readily identify these fish when they are caught as returning adults. This information is used for in-season adjustments of harvests (times and areas) to better protect wild stocks and to more fully utilize hatchery stocks when doing so does not jeopardize wild stocks of pink salmon. Another project sponsored by the Trustee Council characterized the genetic stock structure of pink salmon in the sound. The results of this project will improve confidence that management actions are adequately protecting the genetic diversity of small wild stocks.

Throughout Alaska there is increasing recognition of the importance of changes in marine ecosystems on the growth and survival of salmon. The Trustee Council has funded the Sound Ecosystem Assessment (SEA) project to explore oceanographic and ecological factors that influence production of pink salmon and Pacific herring in Prince William Sound. These factors include such things as the timing of spring plankton blooms and changes in circulation patterns that link the sound to the Gulf of Alaska. These natural factors are likely to have the greatest influence on year-to-year returns in both wild and hatchery stocks of pink salmon. A final report from the SEA Project is due at the end of FY 1999.

Pink salmon have been major beneficiaries of the Trustee Council's habitat protection program. The more than 600,000 acres of land protected through the Trustee Council program include 280 streams with spawning and rearing habitat for salmon. Wild populations of pink salmon have been enhanced by creating or providing access to additional spawning habitat, such as the Port Dick spawning channel on the outer Kenai coast. This project is expected to result in production of additional pink salmon available for commercial harvest each year.

Recovery Objective

Pink salmon will have recovered when population indicators, such as growth and survival, are within normal bounds and there are no statistically significant differences in egg mortalities in oiled and unoiled streams for two years each of odd- and even-year runs in Prince William Sound.

River Otters

Injury and Recovery

River otters have a low population density in Prince William Sound. Twelve river otter carcasses were found following the spill, but the actual total mortality is not known. Studies conducted during 1989-91 identified several differences between river otters in oiled and unoiled areas in Prince William Sound, including biochemical alterations, reduced diversity in prey species, reduced body size (length-weight), and increased home-range size. Because there were few prespill data, it is not certain that these differences are the result of the oil spill. Although some of the differences (e.g., in blood values) persisted through 1996, there were few differences documented in 1997 and 1998. Thus, there are no indications of possible lingering injury from the oil spill, and the Trustee Council's recovery objective has been met.

The Trustee Council's habitat protection program and research and monitoring projects have benefited spill-area river otters. More than 1,200 miles of marine shoreline and more than 280 streams used by anadromous fish streams have been protected; much of this area provides high-value habitat for river otters.

Through the Nearshore Vertebrate Predator project and other studies, much information has been gathered that will improve long-term conservation and management of river otters. These breakthroughs include development of a new method for live-trapping otters, which will improve the ability of wildlife managers to estimate population sizes for this elusive species, and new insights in the recycling of aquatic nutrients into forest ecosystems at otter latrine sites, which has important implications from a conservation standpoint. In addition, work in progress at the Alaska SeaLife Center on the blood chemistry of river otters in relation to small doses of oil will aid interpretation of biochemical tests for exposure from oil and other contaminants.

Recovery Objective

The river otter will have recovered when biochemical indices of hydrocarbon exposure or other stresses and indices of habitat use are similar between oiled and unoiled areas of Prince William Sound, after taking into account any geographic differences.

Rockfish

Injury and Recovery

Very little is known about rockfish populations (of several species) in the northern Gulf of Alaska. A small number of dead adult rockfish was recovered following the oil spill, and autopsies of five specimens indicated that oil ingestion was the cause of death. Analysis of other rockfish showed exposure to hydrocarbons and probable sublethal effects. In addition, closures to salmon fisheries apparently had the effect of increasing fishing pressures on rockfish, which, in turn, may have adversely affected local rockfish populations. However, the original extent of injury and the current recovery status of this species are unknown.

Because little is known about rockfish abundance and species composition in the spill area and because rockfish are harvested commercially, even basic information about these species could provide a basis for improved management or, at least, the identification of priorities for more targeted research. Accordingly, starting in FY 1998, the Trustee Council sponsored a multi-year study of genetic stock structure in black, dusky, and yelloweye rockfish throughout the spill area and the adjacent Gulf of Alaska. No results from this work are currently available.

Recovery Objective

No recovery objective can be identified.

Sea Otters

Injury and Recovery

By the late 1800s, sea otters had been eliminated from most of their historical range in Alaska due to excessive harvesting by Russian and American fur traders. Surveys of sea otters in the 1970s and 1980s, however, indicated a healthy and expanding population in most of Alaska, including Prince William Sound. Today the only harvests of sea otters are for subsistence purposes.

About 1,000 sea otter carcasses were recovered following the spill, and additional animals probably died but were not recovered. In 1990 and 1991, higher-than-expected proportions of prime-age adult sea otters were found dead in western Prince William Sound, and there was evidence of higher mortality of recently weaned juveniles in oiled areas. By 1992-93, overwintering mortality rates for juveniles had decreased, but were still higher in oiled than in unoiled parts of the sound.

Based on both aerial and boat surveys conducted in western Prince William Sound, there is statistically significant evidence of a population increase following the oil spill (1993-98). Observations by local residents bear out this general increase. However, within the most heavily oiled bays in the western sound, such as those on northern Knight Island, the aerial surveys indicate that recovery may not be complete.

Sea Otter

The Trustee Council's Nearshore Vertebrate Predator project, which was started in 1995, is addressing the lack of recovery in sea otters in the heavily oiled bays of western Prince William Sound. The lack of recovery may reflect the extended time required for population growth for a long-lived mammal with a low reproductive rate, but it also could reflect the effects of continuing exposure to hydrocarbons or a combination of both factors. Through 1997, researchers have continued to find biochemical evidence of oil exposure in sea otters on northern Knight Island. Biochemical samples from 1998 are now being analyzed. An additional hypothesis is that food supplies are limiting recovery, but preliminary evidence does not fully support this idea.

It is clear that sea otter recovery is underway for much of the spill-area, with the exception of populations at the most heavily oiled bays in western Prince William Sound. Researchers sponsored by the Trustee Council continue to explore hypotheses for lack of recovery at these sites.

Sea otters have benefited from many aspects of the Trustee Council's program. Sea otters are found along many miles of the more than 1,200 miles of marine shoreline that has been protected through the habitat protection program. Results of research and monitoring projects have also been valuable. For example, an aerial survey protocol is now being used more widely to monitor sea otter populations, and an improved and validated technique for aging sea otters using their teeth will aid biologists and veterinarians wherever sea otters are found. Another example is new information on age-specific reproductive rates, which is crucial for understanding the effects of subsistence harvests on sea otters. These new techniques and insights will aid sea otter conservation and management over the long term.

Recovery Objective

Sea otters will have recovered when the population in oiled areas returns to its prespill abundance and distribution. An increasing population trend and normal reproduction and age structure in western Prince William Sound will indicate that recovery is underway.

Sediments

Injury and Recovery

Exxon Valdez oil penetrated deeply into cobble and boulder beaches that are common on shorelines throughout the spill area, especially in sheltered habitats. Cleaning and natural degradation removed much of the oil from the intertidal zone, but visually identifiable surface and subsurface oil persists at many locations.

The last comprehensive survey of shorelines in Prince William Sound, conducted in 1993, included 45 areas of shoreline known to have had the most significant oiling. The average location with surface oil residue, asphalt, or mousse was 160 m^2 in size. Based on that survey, it was estimated that heavy subsurface oil had decreased by 65 percent since 1991 and that surface oil had decreased by 50 percent over the same time period.

The shorelines of the outer Kenai and Alaska Peninsula coasts get more wave action than most shorelines within Prince William Sound. These Gulf of Alaska sites tended to be contaminated with oil in the form of mousse, which can persist for long periods in a largely unweathered state. Five of six index beaches on the gulf coast have a heavy boulder "armor," and were last visited in 1993 and 1994. At this time, surface and subsurface oil mousse persisted in a remarkably unweathered state in the armored beaches.

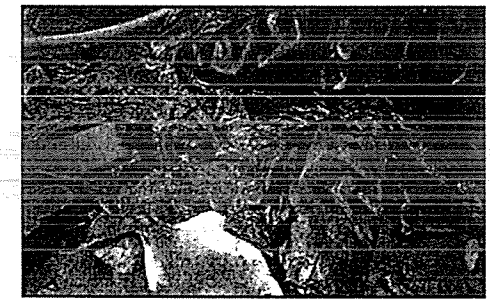
In 1995, a shoreline survey team visited 30 sites in the Kodiak Archipelago that had measurable or reported oiling in 1990 and 1991. The survey team found no oil or only trace amounts at these sites. The oiling in the Kodiak area is not persisting as it is at sites in Prince William Sound due to the higher energy unarmored beaches in the Kodiak area, the state of the oil when it came ashore, and the smaller concentrations of initial oiling relative to the sound.

Following the oil spill, chemical analyses of oil in subtidal sediments were conducted at a small number of index sites in Prince William Sound. At these sites, oil in subtidal sediments was mostly confined to the uppermost 20 meters water depths (below mean low tide), although elevated levels of hydrocarbon-degrading bacteria (associated with elevated hydrocarbons) were detected at depths of 40 and 100 meters in 1990 in Prince William Sound. By 1993, however, there was little evidence of *Exxon Valdez* oil and related elevated microbial activity at most index sites in Prince William Sound, except at those associated with sheltered beaches that were heavily oiled in 1989. These index sites—at Herring, Northwest, and Sleepy bays—are among the few sites at which substantial subtidal oiling is still known to occur.

Based on the information above, sediments are considered to be recovering. However, the presence of surface and subsurface oil continues to compromise wilderness and recreational values, expose and potentially harm living organisms, and offend visitors and residents, especially those who engage in subsistence activities along still-oiled shorelines. Concern on the part of Chenega Bay residents has been particularly strong. In 1997, with support from the Trustee Council, a project was carried out to use a chemical surfactant and other means to remove additional crude oil from 10,000 m^2 of beach on LaTouche and Evans islands in southwestern Prince William Sound. This effort was a partly successful, but a final evaluation of the results is not yet available.

Recovery Objective

Sediments will have recovered when there are no longer residues of *Exxon Valdez* oil on shorelines (both tidal and subtidal) in the oil-spill area. Declining oil residues and diminishing toxicity are indications that recovery is underway.



Oily sediment in 1997

Sockeye Salmon

Injury and Recovery

Commercial salmon fishing was closed in Prince William Sound and in portions of Cook Inlet and near Kodiak in 1989 to avoid any possibility of contaminated salmon being sent to market. As a result, there were higher-than-desirable numbers (i.e., "overescapement") of spawning sockeye salmon entering the Kenai River and also Red and Akalura lakes on Kodiak Island. Research carried out following the spill demonstrated that initially these high escapements produced an overabundance of juvenile sockeye that then overgrazed the zoo-plankton, thus altering planktonic food webs in the nursery lakes. The result was lost sockeye production as shown by reduced growth rates during the freshwater part of the sockeye life history and declines in the returns of adults per spawning sockeye. Although sockeye freshwater growth tended to return to normal within two or three years following the overescapement, there are indications that these systems are less stable for several years after an initial overescapement event.

The negative effects of the 1989 overescapement on sockeye productivity, as measured by return per spawner, in the Kenai River watershed were readily apparent for returns from the brood years 1989-1992. Returns from the 1993-1995 brood years are not complete because some of these fish are still at sea, but returns to date show promise that management efforts have been successful in restoring the returns per spawner to normal levels. The sockeye salmon of the Kenai River watershed are recovering from the effects of the 1989 overescapement.

Production of zooplankton in both Red and Akalura lakes on Kodiak Island has rebounded from the effects of the overescapement at the time of the oil spill. By 1997, Red Lake had responded favorably in terms of smolt and adult production and was at or near prespill production of adult sockeye. At Akalura Lake, however, adult escapements continued to fall below minimum goals through 1997, but the impact of overescapement on return per spawner for Akalura sockeye is not clear. Fortunately, starting in 1993, the production of smolts per adult increased sharply and the smolt sizes and age composition suggested that rearing conditions have improved. Current projections now suggest a significant escapement of adults into Akalura Lake in the 1999 season. The sockeye populations of both Red and Akalura lakes are recovering from the effects of the 1989 overescapement.

There also was concern about overescapement effects in lakes on Afognak Island and on the Alaska Peninsula. However, analysis of sockeye freshwater growth rates of juveniles from Chignik Lake on the Alaska Peninsula did not identify any impacts associated with a 1989 overescapement event.

The Trustee Council has made a major investment in the restoration and management of sockeye salmon, especially in the Kenai River system. Research sponsored by the Trustee Council has documented not only the effects of overescapement events (as described above), but also the mechanism by which the effects are manifested in glacial-lake systems. This work is helping fisheries managers better monitor and predict annual changes in sockeye fisheries. With support from the Trustee Council, genetic stock identification and hydroacoustic stock assessment techniques were developed and are being employed to improve in-season management of the Cook Inlet sockeye fisheries.

Sockeye salmon have benefited greatly from the Trustee Council's habitat protection program throughout the spill area. These acquisitions include streambank, lakeside, and watershed habitats along the Kenai and Moose rivers on the Kenai Peninsula, the Eshamy-Jackpot Bay area of Prince William Sound, the Red and Fraser lakes area on Kodiak Island, and Laura and Pauls lakes on Afognak Island. In addition to habitat acquisition, the Trustee Council sponsored a project to stabilize and restore degraded streambanks on public lands along the Kenai and Russian rivers. This project will restore spawning and rearing habitat important for salmon and enhance recreational fishing, which was a service injured by the oil spill.

Recovery Objective

Proposed Revision: Sockeye salmon in the Kenai River system and Red and Akalura lakes will have recovered when adult returns-per-spawner and other indicators of productivity are within normal bounds.

Subtidal Communities

Injury and Recovery

Shallow subtidal habitats of Prince William Sound, from the lower intertidal zone to depths of about 20 meters, typically have dense stands of kelp or eelgrass and contain numerous polychaete worms, snails, clams, sea urchins, and other invertebrate life. These subtidal communities provide shelter and food for an array of nearshore fishes, birds, and marine mammals.

Oil that was transported down to subtidal habitats, as well as subsequent cleanup activities, apparently caused changes in the abundance and species composition of plant and animal populations below lower tides. Different habitats, emphasizing eelgrass beds and adjacent areas of soft sediment, were compared at oiled and unoiled sites from 1990-1995. It is difficult to draw firm conclusions from this study, because it is hard to distinguish between natural site differences (e.g., percent sand and mud) and those differences actually resulting from the oil spill or cleanup.

Concentrations of hydrocarbons in subtidal sediments were significantly higher at oiled sites than at unoiled reference sites. These concentrations dropped sharply by 1991, but evidence of oil contamination due to *Exxon Valdez* oil persisted at some locations through 1995.

Biologically, negative effects of the oil were most evident for oil-sensitive species of amphipods, which were consistently less abundant at oiled than at unoiled sites. Reduced numbers of eelgrass shoots and flowers may have been due to increased turbidity associated with cleanup activities (e.g., boat traffic). Two species of sea stars and helmet crabs also were less abundant at oiled sites. Some invertebrates living in the sediment, including species in eight families of polychaete worms, two families of snails, and one family of mussels, were greater in numbers at oiled sites. These species are known to be stress-tolerant and probably benefited from the organic enrichment associated with oil. Some of the species that showed increased numbers also may have benefited from reduced competition or predation due to the effects of the spill.

By 1995, there was apparent recovery of most constituents of the eelgrass community. Some amphipod and clam species continued to be less abundant at oiled sites, and there continued to be indications of enhanced numbers of stress-tolerant polychaetes and mussels. These sites have not been revisited since 1995.

Recovery Objective

Subtidal communities will have recovered when community composition in oiled areas, especially in association with eelgrass beds, is similar to that in unoiled areas. Indications of recovery are the return of oil-sensitive species, such as amphipods, and the reduction of opportunistic species at oiled sites.

Human Services

Lost or Reduced Services

The following summaries for lost or reduced services, including commercial fishing, recreation and tourism, and subsistence, are reprinted from the September 1996 *Update on Injured Resources and Services*. The Restoration Office and Trustee agencies are in the process of evaluating the status of these services but are doing so on a schedule that is slightly different from the review of injured resources. Proposed changes in status and updated summaries should be available early in February and will be mailed to recipients of this document. The Trustee Council invites comments or new information on the status of lost or reduced services. **Written comments on lost or reduced services are due February 26, 1999, with an opportunity for public testimony at a Trustee Council meeting tentatively scheduled for March 1.**

Commercial Fishing

Injury and Recovery

Commercial fishing is a service that was reduced through injury to commercial fish species (see individual resources) and also through fishing closures. In 1989, closures affected fisheries in Prince William Sound, lower Cook Inlet, upper Cook Inlet, the outer Kenai coast, Kodiak, and Chignik. Most of these fisheries opened again in 1990. Since then, there have been no spill-related district-wide closures, except for the Prince William Sound herring fishery, which was closed in 1993 and has remained closed since then due to the collapse of the herring population and poor fishery recruitment since 1989. These closures, including the on-going closure of the herring fishery in Prince William Sound, harmed the livelihoods of persons who fish for a living and the communities in which they live. To the extent that the oil spill continues to be a factor that reduces opportunities to catch fish, there is on-going injury to commercial fishing as a service.

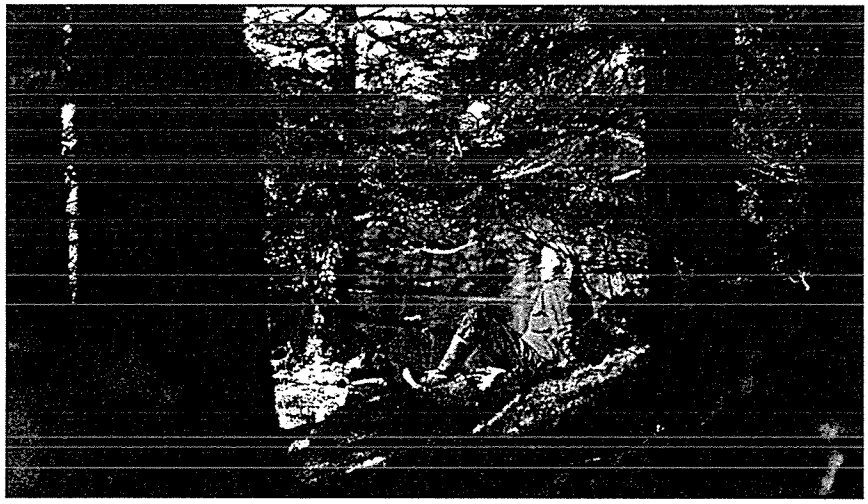
On this basis, the Trustee Council continues to make major investments in projects to understand and restore commercially important fish species that were injured by the oil spill. These projects include: supplementation work, such as fertilizing Coghill Lake to enhance its sockeye salmon run and construction of a barrier bypass at Little Waterfall Creek; development of tools that have almost immediate benefit for fisheries management, such as otolith mass marking of pink salmon in Prince William Sound and in-season genetic stock identification for sockeye salmon in Cook Inlet; and research such as the SEA Project and genetic mapping which will enhance the ability to predict and manage fisheries over the long-term.

Recovery Objective

Commercial fishing will have recovered when the commercially important fish species have recovered and opportunities to catch these species are not lost or reduced because of the effects of the oil spill.

Seining in Prince William Sound

Passive Use



Afognak Island

Injury and Recovery

Passive use of resources includes the appreciation of the aesthetic and intrinsic values of undisturbed areas, the value derived from simply knowing that a resource exists, and other nonuse values. Injuries to passive uses are tied to public perceptions of injured resources. Contingent valuation studies conducted by the State of Alaska for the *Exxon Valdez* oil spill litigation measured substantial losses of passive use values resulting from the oil spill.

Recovery Objective

Passive uses will have recovered when people perceive that aesthetic and intrinsic values associated with the spill area are no longer diminished by the oil spill.

Recreation and Tourism

Injury and Recovery

The spill disrupted use of the spill area for recreation and tourism. Resources important for wildlife viewing and which still are injured by the spill include killer whale, sea otter, harbor seal, and various seabirds. Residual oil exists on some beaches with high value for recreation, and its presence may decrease the quality of recreational experiences and discourage recreational use of these beaches.

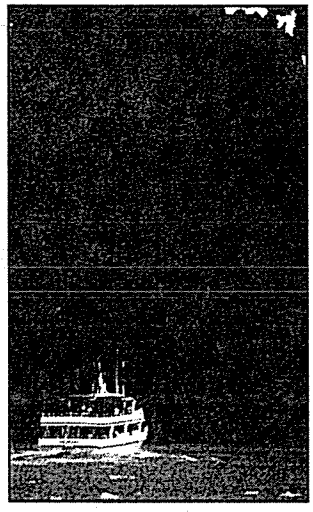
Closures of sport hunting and fishing also affected use of the spill area for recreation and tourism. Sport fishing resources include salmon, rockfish, Dolly Varden, and cutthroat trout. Since 1992, the Alaska Board of Fisheries has imposed special restrictions on sport fishing in parts of Prince William Sound to protect cutthroat trout populations. Harlequin ducks are hunted in the spill area. The Alaska Board of Game restricted sport harvest of harlequin ducks in Prince William Sound in 1991, and those restrictions remain in place.

Recreation was also affected by changes in human use in response to the spill. For example, displacement of use from oiled areas to unoiled areas increased management problems and facility use in unoiled areas. Some facilities, such as the Green Island cabin and the Fleming Spit camp area, were injured by clean-up workers.

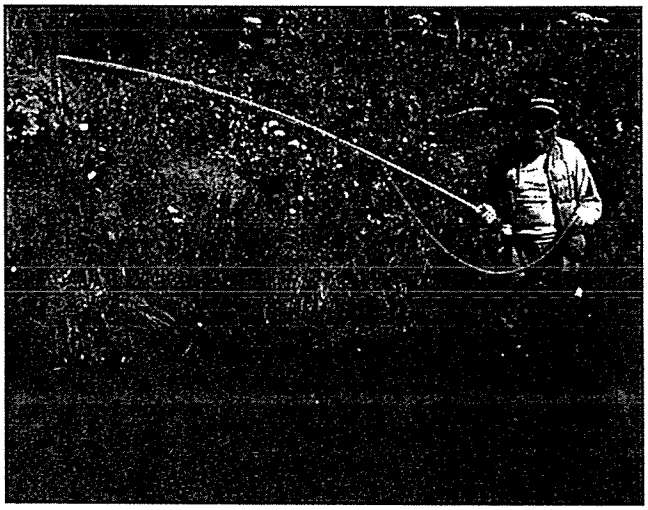
In the years since the oil spill, there has been a general, marked increase in visitation to the spill area. However, there are still locations within the oil-spill area which are avoided by recreational users because of the presence of residual oil.

Recovery Objective

Recreation and tourism will have recovered, in large part, when the fish and wildlife resources on which they depend have recovered, recreation use of oiled beaches is no longer impaired, and facilities and management capabilities can accommodate changes in human use.



Wildlife tours in Kenai Fjords National Park



Recreation includes sport fishing, sport hunting, camping, boating, hiking and other active outdoor pursuits.

Injury and Recovery

Fifteen predominantly Alaskan Native communities (numbering about 2,200 people) in the oil-spill area rely heavily on harvests of subsistence resources, such as fish, shellfish, seals, deer, ducks, and geese. Many families in other communities, both in and beyond the oil-spill area, also rely on the subsistence resources of the spill area.

Subsistence harvests of fish and wildlife in most of these villages declined substantially following the oil spill. The reasons for the declines include reduced availability of fish and wildlife to harvest, concern about possible health effects of eating contaminated or injured fish and wildlife, and disruption of lifestyles due to clean-up and other activities.

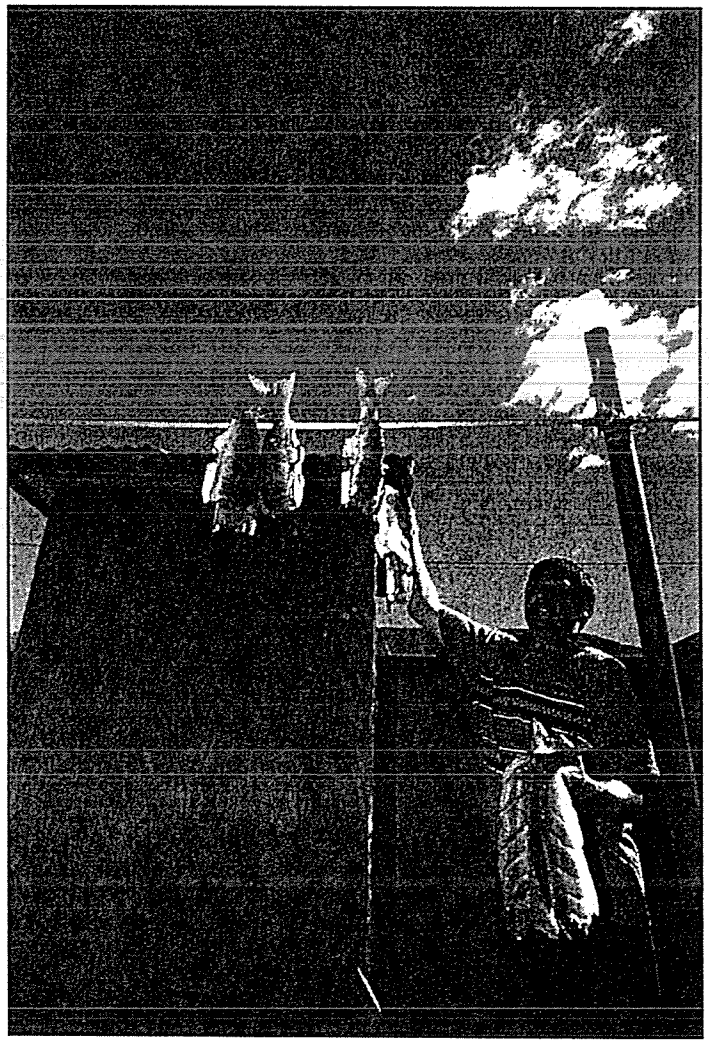
Subsistence foods were tested for evidence of hydrocarbon contamination from 1989-94. No or very low concentrations of petroleum hydrocarbons were found in most subsistence foods. The U.S. Food and Drug Administration determined that eating foods with such low levels of hydrocarbons posed no significant additional risk to human health. Because shellfish can continue to accumulate hydrocarbons, however, the Oil Spill Health Task Force advised subsistence users not to eat shellfish from beaches where oil can be seen or smelled on the surface or subsurface. Residual oil exists on some beaches near subsistence communities. In general, subsistence users remain concerned and uncertain about the safety of fish and other wildlife resources.

The estimated size of the subsistence harvest in pounds per person now appears to have returned to prespill levels in some communities, according to subsistence users through household interviews conducted by the Alaska Department of Fish and Game. These interviews also indicated that the total subsistence harvest began to rebound first in the communities of the Alaska Peninsula, Kodiak Island, and the lower Kenai Peninsula, but that the harvest has lagged behind a year or more in the Prince William Sound villages. The interviews also showed that the relative contributions of certain important subsistence resources remains unusually low. The scarcity of seals, for example, has caused people in Chenega Bay to harvest fewer seals and more salmon than has been customary. Herring have been very scarce throughout Prince William Sound since 1993. Different types of resources have varied cultural and nutritional importance, and the changes in diet composition remain a serious concern to subsistence users. Subsistence users also report that they have to travel farther and expend more time and effort to harvest the same amount as they did before the spill, especially in Prince William Sound.

Subsistence users also point out that the value of subsistence cannot be measured in pounds alone. This conventional measure does not include the cultural value of traditional and customary use of natural resources. Subsistence users say that maintaining their subsistence culture depends on uninterrupted use of fish and wildlife resources. The more time users spend away from subsistence activities, the less likely that they will return to these practices. Continuing injury to natural resources used for subsistence may affect ways of life of entire communities. There is particular concern that the oil spill disrupted opportunities for young people to learn subsistence culture, and that this knowledge may be lost to them in the future.

Recovery Objective

Subsistence will have recovered when injured resources used for subsistence are healthy and productive and exist at prespill levels. In addition, there is recognition that people must be confident that the resources are safe to eat and that the cultural values provided by gathering, preparing, and sharing food need to be reintegrated into community life.



Drying salmon in Old Harbor

Public Hearing

January 21, 1998, 7:00-8:30 p.m.
(to be continued 8:30 a.m. January 22 if neeeded)
Anchorage Restoration Office
and at area Legislative Information Offices

The Trustee Council and Public Advisory Group will jointly host a public hearing to accept public testimony on 1) changes to the Injured Resources list and 2) potential uses of the Restoration Reserve. The two groups will meet January 22 to discuss the two topics.

The joint session between the Trustee Council and its 17-member advisory group will focus primarily on the Restoration Reserve. This $140 million savings account was set aside to finance restoration activities beyond the year 2001 when the last installment from Exxon is received. The Trustee Council will not take action on the updated Injured Resources List or on the Restoration Reserve at the January 22 meeting.

Legislative Information offices in Valdez, Cordova, Seward, Kenai/Soldotna, Homer, Kodiak, Juneau, and Fairbanks will be open 7-8:30 p.m. January 21 for residents of those communities. Residents in remote areas can join via teleconference. Arrangements can be made by contacting Rebecca at 907-278-8012; 800-478-7745 (within Alaska); 800-283-7745 (outside Alaska); or via e-mail: restoration@oilspill.state.ak.us. The public hearing will be continued at 8:30 a.m. January 22 if needed.

Draft Update Deadline
Written comments on the draft update will be accepted no later than February 5.

Restoration Reserve Deadline
Written comments on the Restoration Reserve will be accepted no later than February 12.

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Room 401
Anchorage, AK 99501-3451

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PROPOSED SUBSTANTIVE CHANGES IN THE JANUARY 1999 DRAFT *UPDATE ON INJURED RESOURCES AND SERVICES*

pp. 2-3 (inside front cover and facing page): Remove "Dear Reader" letter and substitute new "Introduction." This introduction discusses the purposes of the List of Injured Resources and Services, background information on updates to the List, and ecosystem perspective and recovery.

p. 4: Replace Table of Resources and Services with new version. The new version includes brief descriptions of what the different categories mean (e.g., Not Recovering, Recovering). Visually, the new version of the table tries to convey the concept that although we use discrete categories to describe the recovery status of an individual resource, recovery actually is something that occurs along a continuum ranging from Not Recovering to Recovered.

p. 5: Updates Archaeological Resources text to indicate commitment of funds for a repository and local display facility for Prince William Sound and lower Cook Inlet.

p. 6: Drop words "Proposed Revision" with reference to the Common Loon recovery objective, since it will no longer be proposed once it is adopted by the Trustee Council.

p. 7: Clarifies text regarding Clams to more clearly describe progress toward recovery, but also to emphasize that full recovery has not been achieved.

p. 9: Added mention of a wilderness study area in the Chugach National Forest to the examples of oiled wilderness areas.

p.10: Drop words "Proposed Revision" with reference to the Harlequin Duck recovery objective since it will no longer be proposed once it is adopted by the Trustee Council.

p. 14: Substitute new text for marbled murrelet account, sticking with original rather than new recovery objective. Purpose of changes in the text is to clarify that murrelets are neither stable nor increasing, which is what was required by original objective. There is evidence, however, that some recovery has occurred and is underway, hence the recommendation that the marbled murrelet be placed in the Recovering category.

p. 15: Substitute new text for Pacific herring. Clarifies that the species is showing signs of recovery, but clearly herring are not fully Recovered.

pp. 16-17: Substitute new text for pink salmon. Indicates that pink salmon are recovering, but that the species is not fully recovered since the original recovery objective (2 odd and 2 even years of no differences in egg mortality in oiled and unoiled streams) has not been satisfied. It is possible that the current very specific recovery objective is unlikely to be satisfied (and very costly to assess). Staff recommends that the Trustee Council revisit the pink salmon recovery objective in the future and consider a revised objective that incorporates concern about both the overall population status of pink salmon and problems with local exposure to oil.

pp. 19-20: Substitute new text for sockeye salmon, incorporating new information that was not available when the text was drafted. Use original not new recovery objective. This recovery objective should be revisited and probably broadened slightly at the same time as the pink salmon recovery objective is revisited.

RESPONSES TO PUBLIC COMMENTS

Thus far, five public comments from four individuals have been received.

Riki Ott, Cordova, testified that pink salmon should remain as recovering rather than recovered, and that sea otters and Pacific herring should remain as not recovering rather than recovering. Action: *Pink salmon are now proposed as recovering, since the current recovery objective has not been achieved. However, sea otters and Pacific herring*

are still proposed as recovering, based on clear progress toward recovery objectives.

Danny Carpenter, Cordova, also testified that pink salmon should not be considered as recovered. Action: *see above.*

Kim Sundberg, Seward, indicated in an oral statement and in a letter that projects on several injured species (river otters, harbor seals, pigeon guillemots, pink salmon, and rockfish) are being carried out at the Alaska SeaLife Center and that preliminary findings are consistent with the status assessments in the *Recovery Update.* Action: *none proposed.*

Nancy Lethcoe, Valdez, wrote a letter expressing concern that the use of undated photos in the *Recovery Update* (e.g., oiled beaches and cleanup operations in 1989) suggests to the public that these are conditions that prevail today. Action: *photos will be dated and captioned appropriately.*

[substitute inside front cover and facing page]

Introduction

History and Purposes of the List

In November 1994, the Trustee Council adopted an official List of Injured Resources and Services as part of the *Restoration Plan*. This list serves three main purposes:

1. It is representative of injuries caused by the oil spill and cleanup efforts and helps the Trustees and the public track the status of important fish, wildlife, and other resources and services. The fish and wildlife species on this list include ones that are thought to have suffered population-level or sublethal injuries, but it does not include every species or resource that suffered some degree of injury. For example, carcasses of about 90 different species of oiled birds were recovered in 1989, but only 10 species of birds are on the list of injured species.

2. It helps guide priorities for implementation of the *Restoration Plan*. This was especially important in 1994 when the plan was first adopted, but the list still serves to highlight resources that are in need of attention. For example, what additional work can be undertaken to clarify the status of Recovery Unknown resources, or what can be done, if anything, to help move resources from Not Recovering to Recovering or from Recovering to Recovered?

3. Finally, when taken as a whole, the list of injured resources helps the Trustees and the public track recovery of the overall ecosystem and the functions and human services that the ecosystem provides. For example, neither the ecosystem nor the service of commercial fishing can be judged to have recovered from the effects of the oil spill until keystone resources, such as Pacific herring, are themselves fully recovered. (See below.)

Chapter 4 of the *Restoration Plan* indicates that the List of Injured Resources and Services will be reviewed periodically and updated to reflect what is learned from scientific studies and other sources of information, such as from traditional and local knowledge. Each time the list is reviewed, a resource's progress or lack of progress toward recovery is evaluated with reference to its recovery objective that is as concrete and measurable as possible. Sometimes the recovery objectives themselves are changed to reflect new insights about the nature of the injury and the best ways to evaluate recovery status. The table on page _ includes brief descriptions of what each recovery category means.

The List of Injured Resources and Services was first updated in September 1996. At that time, for example, the bald eagle was upgraded from Recovering to Recovered. In 1999, 10 years after the oil spill, several more changes have been made. One new resource, river otter, is now considered to be Recovered, and five resources--black oystercatcher, clams, marbled murrelet, Pacific herring, sea otter--are upgraded to Recovering. One resource, common loon, is moved from Recovery Unknown to Not Recovering. Five resources remain as Recovery Unknown.

The List of Injured Resources and Services can be updated at any time that new information becomes available. It is likely, however, that the next evaluation of changes in recovery status for all injured resources and lost or reduced services will be in 2001, 10 years after the 1991 settlement between the governments and Exxon and initiation of the restoration program.

Ecosystem Perspective and Recovery

The List of Injured Resources consists mainly of single species and resources, but, as noted above, it provides a basis for evaluating the recovery of the overall ecosystem, its functions, and the services that it provides to people. In fact, through the *Restoration Plan*, the Trustee Council adopted an ecological approach to restoration, and the studies and projects it sponsored have been increasingly ecological in character.

Page 35 of the *Restoration Plan* defines ecosystem recovery as follows:

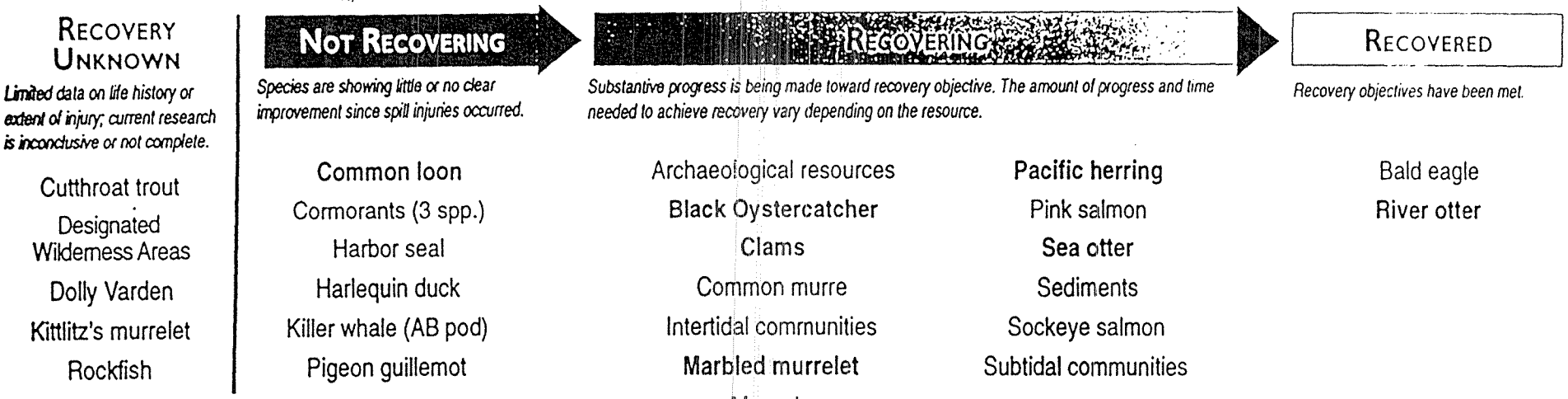
> Full ecological recovery will have been achieved when the population of flora and fauna are again present at former or prespill abundances, healthy and productive, and there is a full complement of age classes at the level that would have been present had the spill not occurred. A recovered ecosystem provides the same functions and services as would have been provided had the spill not occurred.

Using this definition, the coastal and marine ecosystem in the oil-spill region has not recovered from the effects of the oil spill. Keystone species, such as Pacific herring and harbor seals, have not fully recovered, nor has the composition of biological communities, such as in intertidal habitats. Although full ecological recovery has not been achieved, the spill-area ecosystem is still largely intact and functioning and on the way to recovery 10 years after the *Exxon Valdez*.

It also is important to understand that ecosystems are dynamic and would have changed even in the absence of the oil spill. Baseline data describing fish and wildlife populations, to say nothing of complex intertidal and subtidal communities, were generally poor. For this reason, it was and is difficult to evaluate injury to individual resources and the ecosystem in general, and an inability to document injury because of poor baseline data does not mean that injury did not exist. It also is important to note that as the time since the oil spill grows longer, it is more and more difficult to separate what may be lingering effects of the spill from changes that are natural or caused by factors unrelated to the oil spill. In fact, what we see is often an interaction between oil effects and natural changes, such as the effects of the 1998 El Niño on common murres in the Barren Islands.

Status of Injured Resources and Services

FEBRUARY 10, 1999



Resources in boldface have each moved on this Recovery Line during the most recent update (February 9, 1999)

DRAFT

ARCHAEOLOGICAL RESOURCES

Injury and Recovery

The oil-spill area is believed to contain more than 3,000 sites of archaeological and historical significance. Twenty-four archaeological sites on public lands are known to have been adversely affected by cleanup activities or looting and vandalism linked to the oil spill. Additional sites on both public and private lands were probably injured, but damage assessment studies were limited to public land and not designed to identify all such sites.

Documented injuries include theft of surface artifacts, masking of subtle clues used to identify and classify sites, violation of ancient burial sites, and destruction of evidence in layered sediments. In addition, vegetation was disturbed, which exposed sites to accelerated erosion. The effect of oil on soil chemistry and organic remains may reduce or eliminate the utility of radiocarbon dating in some sites.

Assessments of 14 sites in 1993 suggested that most of the archaeological vandalism that can be linked to the spill occurred early in 1989, before adequate constraints were put into place over the activities of oil spill clean-up personnel. Most vandalism took the form of "prospecting" for high yield sites. Once these problems were recognized, protective measures were implemented and successfully limited additional injury. In 1993, only two of the 14 sites visited showed signs of continued vandalism. In 1996, there was evidence of vandalism at five sites, but only at one site in 1997. Natural erosion is the major agent of degradation at the sites, and the erosion draws the attention of looters to the exposed artifacts. Nine years after the oil spill it is difficult to attribute the recent cases of vandalism to discovery of these sites at the time of the oil spill.

Oil was visible in the intertidal zones of two of the 14 sites monitored in 1993, and hydrocarbon analysis has shown that the oil at one of the sites was from the *Exxon Valdez* spill. Hydrocarbon concentrations at the second site were not sufficient to permit identification of the source or sources of the oil. The presence of oil in sediment samples taken from four sites in 1995 did not appear to have been the result of re-oiling by *Exxon Valdez* oil.

In 1993, the Trustee Council provided part of the construction costs for the Alutiiq Archaeological Repository in Kodiak. This facility now houses Kodiak-area artifacts that were collected during the time of spill response. Artifacts recovered from injured sites in lower Cook Inlet and Prince William Sound currently are stored at the University of Alaska Fairbanks or elsewhere. ~~The~~In 1999, however, the Trustee Council ~~continues to consider appropriate options for storing or displaying these~~approved funding for an archaeological repository and local display facilities for artifacts from Prince William Sound and lower Cook Inlet.

Two sites in Prince William Sound were so badly damaged by oiling and erosion that they were partly documented, excavated, and stabilized by professional archaeologists in 1994-1997. It appears that the two sites were intermittently occupied for periods of 2,000 and 3,000 years. Most of the cultural deposits are prehistoric in nature.

Starting in 1996, the Trustee Council funded a project to involve local residents in monitoring

and protecting vulnerable sites in the Kenai, Homer, Seldovia, Kodiak, and Chignik areas. This project was based on the premise that successful long-term stewardship depends on community support and involvement. A report on this project is due in 1999. **Based on the apparently low rate of spill-related vandalism and progress in the preservation of artificats and scientific data on archaeological sites and artifacts, archaeological resources are considered to be recovering.**

Recovery Objective

Archaeological resources are nonrenewable: they cannot recover in the same sense as biological resources. Archaeological resources will be considered to have recovered when spill-related injury ends, looting and vandalism are at or below prespill levels, and the artifacts and scientific data remaining in vandalized sites are preserved (e.g., through excavation, site stabilization, or other forms of documentation).

CLAMS

Injury and Recovery

The magnitude of immediate impacts on clam populations varied with the species of clam, degree of oiling, and location. Data from the lower intertidal zone on sheltered beaches suggested that littleneck clams and, to a lesser extent, butter clams were killed and suffered slower growth rates as a result of the oil spill and cleanup activities.

Since the original damage assessment work on clams in 1989 and 1990, the Trustee Council has not sponsored additional studies focused specifically on clam injury and recovery. Some insights are available from projects carried out by the NOAA Hazardous Materials Division and others on intertidal and subtidal communities in relation to oil and shoreline treatments. In general, these studies indicate that intertidal fauna dwelling in soft sediments, including various clam species, had rebounded within one-three years after 1989 on oiled-but-untreated shorelines. On these shorelines, abundances or trends in abundance of intertidal fauna were parallel or similar to those at unoiled, untreated sites. One study documented that concentrations of hydrocarbons in littleneck clam tissues at oiled and unoiled sites were not significantly different by 1993. These results indicate that recovery is underway.

Clearly, however, full recovery has not been achieved, especially on shorelines that were oiled and treated by hot-water washes. For example, one study found that densities of littleneck and butter clams were depressed through 1996 on oiled, treated mixed-sedimentary shores where fine sediments had been washed downslope during pressured water treatments. Comparing oiled study sites on Knight Island with unoiled sites on Montague Island, researchers in the Nearshore Vertebrate Predator project found a full range of size classes of clams at the oiled sites, as well as more large clams. However, oiled sites also had fewer juvenile clams and lower numbers of several species. **Based on all of the evidence summarized above, clams are recovering, but are not yet fully recovered from the effects of the oil spill.**

rewritten

In communities on the Kenai Peninsula, Kodiak Island, the Alaska Peninsula and in Prince William Sound there are lingering concerns about the effects of the oil spill on clams. The Trustee Council sponsored a project to help restore subsistence uses of clams (see subsistence).

Recovery objective

Clams will have recovered when populations and productivity have returned to levels that would have prevailed in the absence of the oil spill, based on comparisons of oiled and unoiled sites.

DESIGNATED WILDERNESS AREAS

Injury and Recovery

The oil spill delivered oil in varying quantities to the waters and tidelands adjoining eight areas designated as wilderness areas and wilderness study areas by Congress or the Alaska State Legislature. Oil also was deposited above the mean high-tide line at these locations. During the intense clean-up seasons of 1989 and 1990, thousands of workers and hundreds of pieces of equipment were at work in the spill zone. This activity was an unprecedented imposition of people, noise, and activity on the area's undeveloped and normally sparsely occupied landscape. Although activity levels on these wilderness shores have probably returned to normal, at some locations there is still residual oil.

Among the affected areas were designated wilderness in the Katmai National Park, ~~a~~ wilderness study ~~area in the~~areas in the Chugach National Forest and Kenai Fjords National Park, and Kachemak Bay Wilderness State Park. Six moderately to heavily oiled sites on ~~these two~~ the Kenai and Katmai coasts were last surveyed in 1994, at which time some oil mousse persisted in a remarkably unweathered state on boulder-armored beaches at five sites. These sites will be visited again in 1999. **Pending completion of these visits, and additional visits to oiled shorelines in western Prince William Sound, the recovery status of designated wilderness remains unknown.**

Recovery Objective

Designated wilderness areas will have recovered when oil is no longer encountered in them and the public perceives them to be recovered from the spill.

[substitute for MAMU account on p. 14]

MARBLED MURRELETS

Injury and Recovery

The northern Gulf of Alaska, including Prince William Sound, is a key area of concentration in the distribution of marbled murrelets. The marbled murrelet is federally listed as a threatened species in Washington, Oregon, and California; it also is listed as threatened in British Columbia.

The marbled murrelet population in Prince William Sound had declined before the oil spill. The causes of the prespill decline are not known for certain, but environmental changes in the late 1970s probably reduced the availability or quality of prey resources. There is, nonetheless, clear evidence that oil caused injury to ~~the~~ marbled ~~murrelet population~~murrelets in the sound. Carcasses of nearly 1,100 Brachyramphus murrelets were found after the spill, and about 90 percent of the murrelets that could be identified to the species level were marbled murrelets. Many more murrelets probably were killed by the oil than were found, perhaps as much as 7 percent of the spill area population.

The recovery of the marbled murrelet population in Prince William Sound is assessed primarily through standard marine bird boat surveys. Based on ~~the~~a recent analysis of data from boat surveys carried out ~~through 1998, there has been no statistically significant increase in the sound~~since July for most years from 1989-1998, densities of marbled ~~murrelet population since the spill~~murrelets increased substantially in oiled parts of the sound during 1990-1993, but declined again in 1996 and 1998. ~~There~~Densities of murrelets in unoiled parts of the sound also ~~is no evidence of a further decline~~ declined in 1996 and 1998, so the reason for the recent declines in both oiled and unoiled areas is probably due to some factor other than the oil spill.

The Trustee Council's recovery objective requires a stable or increasing population for marbled murrelets; stable or increasing productivity would indicate that recovery is underway. ~~Based on the information above~~The marbled murrelet population is not now stable nor increasing, ~~it appears that this species is at least recovering~~but the increase in oiled areas from ~~the effects of the oil spill~~1990-1993 is a positive sign.
In addition, marbled murrelet productivity, as measured by surveys of adults and juveniles on the water in Prince William Sound, appears to be within normal bounds. **On these bases, it appears that the marbled murrelet is at least recovering from the effects of the oil spill.**

Marbled murrelets have been a major focus of the Trustee Council's restoration program, including both habitat protection and research and monitoring activities. Marbled murrelets are known to nest in large, mossy trees within stands of old-growth forest. Following the oil spill, Trustee Council researchers identified specific habitat types and areas within the spill zone that are especially valuable to nesting murrelets. Much of the 600,000 acres of habitat protected with Trustee Council funds is forested, including significant habitat that is suitable for and used by nesting murrelets (for example, on Afognak Island).

In the area of research and monitoring, the Trustee Council's Alaska Predator Ecosystem

Experiment (APEX) project is investigating the relationship between marbled murrelet declines and the availability and abundance of forage fish, such as Pacific herring, sand lance, and capelin. It appears that there is a direct correlation between the availability of forage fish and production of young murrelets, based on the presence of juvenile murrelets on the water in Prince William Sound. Historical trawl data analyzed as part of this project supported a decision by the North Pacific Fishery Management Council to limit bycatch of forage fish in commercial fisheries and to preclude the startup of fisheries targeting forage fish (not including herring).

Recovery Objective

~~Proposed Revision:~~ Marbled murrelets will have recovered when their populations are stable or increasing. ~~Sustained~~Stable or increasing productivity ~~within normal bounds~~ will be an indication that recovery is underway.~~–~~

[substitute for PAHE account on p. 15]

PACIFIC HERRING

Injury and Recovery

Pacific herring spawned in intertidal and subtidal habitats in Prince William Sound ~~shortly~~ after the oil spill. A significant portion of these spawning habitats as well as herring staging areas in the sound were contaminated by oil. Field studies conducted in 1989 and 1990 documented increased rates of egg mortality and larval deformities in oiled versus unoiled areas. Subsequent laboratory studies confirm that these effects can be caused by exposure to Exxon Valdez oil, but the significance of these injuries at a population level is not known.

The 1988 prespill year-class of Pacific herring was very strong in Prince William Sound, and, as a result, the estimated peak biomass of spawning adults in 1992 was ~~at a record level~~ very high. Despite the ~~record~~ large spawning biomass in 1992, the population exhibited a density-dependent reduction in size, and in 1993 there was an unprecedented crash of the adult herring population. A viral disease and fungus were the probable immediate agents of mortality, but such other factors as competition for food may have reduced herring fitness and survival. Laboratory investigations since the population crash have shown that exposure to very low concentrations of *Exxon Valdez* oil can compromise the immune systems of adult herring and lead to expression of the viral disease. The extent to which the exposure to oil contributed to the 1993 disease outbreak is uncertain.

Numbers of spawning herring in Prince William Sound remained depressed through the 1995 season. In 1997 and 1998 ~~there were limited commercial harvests for herring in the sound, but the population has yet to recruit a highly successful year-class, which is fundamental to recovery~~ the spawning biomass was about double that of ~~this species~~ 1994, the season following the crash, and there were limited commercial harvests for herring in the sound. ~~Thus, while it is clear that the Pacific herring is in the process of recovering, a full recovery~~ The increased biomasses in 1997 and 1998 are signs that recovery has begun. Unfortunately, the population has ~~not been achieved~~ yet to recruit a highly successful year-class, which is fundamental to recovery of this species. **Thus, a full recovery has not been achieved, and the Pacific herring can only be considered to be recovering.**

Because the Pacific herring is extremely important ecologically and commercially and for subsistence users, the Trustee Council has made a major investment in restoration projects that benefit herring. In the area of habitat protection, Trustee Council funds have acquired more than 1,200 miles of upland shorelines, some of which will help protect water quality in areas used by spawning herring. Research sponsored by the Trustee Council also has identified bays that are important as herring nursery and overwintering areas, and this information will be useful to natural resource managers for decisions about siting facilities or planning responses to future oil spills.

The Trustee Council's Sound Ecosystem Assessment has resulted in new understanding of the importance of body condition in determining overwintering survival of herring and in the

influences of the Gulf of Alaska in herring productivity within Prince William Sound. Techniques for improving stock and spawning biomass assessments through spawn deposition surveys and hydroacoustic and aerial surveys also have been supported by the Trustee Council. On-going research on herring disease in relation to commercial fishing practices, such as the enclosed "pound" fisheries, have direct implications for management of the herring fishery. Improvements in knowledge about the biology and ecology of herring and in assessment and management tools will enhance conservation and management of this species over the long term.

Recovery Objective

Pacific herring will have recovered when the next highly successful year class is recruited into the fishery and when other indicators of population health are sustained within normal bounds in Prince William Sound.

[substitute for PISA account on pp. 16-17]

PINK SALMON

Injury and Recovery

Certain features of the life history of pink salmon made this species highly vulnerable to damage from the oil spill. As much as 75 percent of wild pink salmon in Prince William Sound spawn in the intertidal portions of streams, where embryos deposited in the gravel could be chronically exposed to hydrocarbon contamination in the water column or leaching from oil deposits on adjacent beaches. When juvenile pink salmon migrate to saltwater they spend several weeks foraging for food in nearshore habitats. Thus, juvenile salmon entering seawater from both wild and hatchery sources could have been exposed to oil as they swam through oiled waters and fed along oiled beaches. Trustee Council-sponsored studies have documented two primary types of injury due to the exposure of these early life stages: First, growth rates in both wild and hatchery-reared juvenile pink salmon from oiled parts of the sound were reduced. Second, there was increased egg mortality in oiled versus unoiled streams.

In the years preceding the spill, returns of wild pink salmon in Prince William Sound varied from a maximum of 23.5 million fish in 1984 to a minimum of 2.1 million in 1988. Since the spill, returns of wild pinks have varied from a high of about 12.7 million fish in 1990 to a low of about 1.9 million in 1992. The decade preceding the oil spill was a time of very high productivity for pink salmon in the sound, and, given the tremendous natural variation in adult returns, it is impractical to measure directly the extent to which wild salmon returns since 1989 were influenced by the oil spill. Based on intensive studies, including mathematical models, carried out following the spill, wild adult pink salmon returns to the sound's Southwest District in 1991 and 1992 were most likely reduced by a total of 11 percent.

Reduced juvenile growth rates in Prince William Sound occurred only in the 1989 season, but higher egg mortality persisted in oiled compared to unoiled streams through 1993. No statistically significant differences in egg mortalities in oiled and unoiled streams were detected in 1994 through 1996, but in 1997 there was again a difference. It is not clear whether the 1997 difference was due to the effects of lingering weathered oil, perhaps newly exposed by storm-related disturbance of adjacent beaches, or due to other factors. Patches of weathered oil still persist in or near intertidal spawning habitats in a few of the streams used by pink salmon in southwestern Prince William Sound. It is possible that patches of oil may be exposed as winter storms shift stream beds back and forth and result in local episodes of increased pink salmon egg mortality. The duration, scale, and number of any such events now would be ~~very~~ limited in comparison to the situation that existed in the southwestern sound in 1989-1993. Therefore, the biological impact of exposure to any such lingering oil ~~should not~~ is unlikely to limit pink salmon populations, assuming there are no drastic negative changes in the quality of freshwater habitats and ocean rearing conditions.

~~Thus, with the exception of~~ Since the Trustee Council's recovery objective specifically requires a ~~few streams with patches~~ sequence of ~~lingering oil in the southwestern sound, there is no longer any basis to suspect that the oil spill is affecting pink salmon populations in the sound~~ two

years each of odd- and even-year runs without differences in egg mortality, this recovery objective clearly has not been met. ~~Overall,~~**Thus, the Trustee Council continues to find that** pink salmon ~~have recovered~~ **are recovering from the effects of the** ~~Exxon Valdez~~ **oil spill, but that full recovery has not been achieved.**

The Trustee Council has made a major investment in studying the effects of the oil spill on pink salmon and in improving conservation and management of wild stocks in Prince William Sound. Studies on the effects of oil on pink salmon have led to new insights about how oil can affect salmon, especially in regard to the toxicity of even very small concentrations of weathered oil on early life stages. This information will be useful in evaluating water quality standards for oil in water and in contingency planning for future oil spills.

The Trustee Council has sponsored several projects directed at improved management of pink salmon. One of the most beneficial projects sponsored by the Trustee Council was development and implementation of a thermal mass marking project in Prince William Sound. This project, which is now being sustained by the Alaska Department of Fish and Game and the Prince William Sound Aquaculture Association, puts a unique mark on the otoliths (ear bone) of hatchery-reared fry released in the sound. Technicians can readily identify these fish when they are caught as returning adults. This information is used for in-season adjustments of harvests (times and areas) to better protect wild stocks and to more fully utilize hatchery stocks when doing so does not jeopardize wild stocks of pink salmon. Another project sponsored by the Trustee Council characterized the genetic stock structure of pink salmon in the sound. The results of this project will improve confidence that management actions are adequately protecting the genetic diversity of small wild stocks.

Throughout Alaska there is increasing recognition of the importance of changes in marine ecosystems on the growth and survival of salmon. The Trustee Council has funded the Sound Ecosystem Assessment (SEA) project to explore oceanographic and ecological factors that influence production of pink salmon and Pacific herring in Prince William Sound. These factors include such things as the timing of spring plankton blooms and changes in circulation patterns that link the sound to the Gulf of Alaska. These natural factors are likely to have the greatest influence on year-to-year returns in both wild and hatchery stocks of pink salmon. A final report from the SEA Project is due at the end of FY 1999.

Pink salmon have been major beneficiaries of the Trustee Council's habitat protection program. The more than 600,000 acres of land protected through the Trustee Council program include 280 streams with spawning and rearing habitat for salmon. Wild populations of pink salmon have been enhanced by creating or providing access to additional spawning habitat, such as the Port Dick spawning channel on the outer Kenai coast. This project is expected to result in production of additional pink salmon available for commercial harvest each year.

Recovery Objective

Pink salmon will have recovered when population indicators, such as growth and survival, are within normal bounds and there are no statistically significant differences in egg mortalities in oiled and unoiled streams for two years each of odd- and even-year runs in Prince William Sound.

[substitute for SOSA account on p. 19-20]

SOCKEYE SALMON

Injury and Recovery

Commercial salmon fishing was closed in Prince William Sound and in portions of Cook Inlet and near Kodiak in 1989 to avoid any possibility of contaminated salmon being sent to market. As a result, there were higher-than-desirable numbers (i.e., "overescapement") of spawning sockeye salmon entering the Kenai River and also Red and Akalura lakes on Kodiak Island. Research carried out following the spill demonstrated that initially these high escapements produced an overabundance of juvenile sockeye that then overgrazed the zoo-plankton, thus altering planktonic food webs in the nursery lakes. The result was lost sockeye production as shown by reduced growth rates during the freshwater part of the sockeye life history and declines in the returns of adults per spawning sockeye. Although sockeye freshwater growth tended to return to normal within two or three years following the overescapement, there are indications that these systems are less stable for several years after an initial overescapement event.

The negative effects of the 1989 overescapement on sockeye productivity, as measured by return per spawner, in the Kenai River watershed were readily apparent for returns from the brood years 1989-1992. Returns from the 1993-1995 brood years are not complete because some of these fish are still at sea, but returns to date show promise that management efforts have been successful in restoring the returns per spawner to normal levels. **The sockeye salmon of the Kenai River watershed are recovering from the effects of the 1989 overescapement.**

Production of zooplankton in both Red and Akalura lakes on Kodiak Island has rebounded from the effects of the overescapement at the time of the oil spill. By 1997, Red Lake had responded favorably in terms of smolt and adult production and was at or near prespill production of adult sockeye. At Akalura Lake~~, however, adult escapements continued to fall below minimum goals through 1997~~ there were low juvenile growth rates in freshwater during the period 1989-92, ~~but the impact~~and these years of ~~overescapement on return per spawner for Akalura sockeye is not clear~~low growth correspond to low adult escapements during the period 1994-97. ~~Fortunately, starting~~Starting in 1993, however, the production of smolts per adult increased sharply and the smolt sizes and age composition suggested that rearing conditions have improved. ~~Current projections now suggest~~This improvement is reflected in a strong adult escapement in 1998; a significant escapement of adults into Akalura Lake ~~in the~~ is also projected in 1999~~ season~~. **The sockeye populations of both Red and Akalura lakes are recovering from the effects of the** 1989 overescapement.

There also was concern about overescapement effects in lakes on Afognak Island and on the Alaska Peninsula. However, analysis of sockeye freshwater growth rates of juveniles from Chignik Lake on the Alaska Peninsula did not identify any impacts associated with a 1989 overescape-ment event.

The Trustee Council has made a major investment in the restoration and management of sockeye salmon, especially in the Kenai River system. Research sponsored by the Trustee Council has

documented not only the effects of overescapement events (as described above), but also the mechanism by which the effects are manifested in glacial-lake systems. This work is helping fisheries managers better monitor and predict annual changes in sockeye fisheries. With support from the Trustee Council, genetic stock identification and hydroacoustic stock assessment techniques were developed and are being employed to improve in-season management of the Cook Inlet sockeye fisheries.

Sockeye salmon have benefited greatly from the Trustee Council's habitat protection program throughout the spill area. These acquisitions include streambank, lakeside, and watershed habitats along the Kenai and Moose rivers on the Kenai Peninsula, the Eshamy-Jackpot Bay area of Prince William Sound, the Red and Fraser lakes area on Kodiak Island, and Laura and Pauls lakes on Afognak Island. In addition to habitat acquisition, the Trustee Council sponsored a project to stabilize and restore degraded streambanks on public lands along the Kenai and Russian rivers. This project will restore spawning and rearing habitat important for salmon and enhance recreational fishing, which was a service injured by the oil spill.

Recovery Objective

~~Proposed Revision:~~ Sockeye salmon in the Kenai River system and Red and Akalura lakes will have recovered when adult returns-per-spawner ~~and other indicators of productivity~~ are within normal bounds.

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

TRUSTEE COUNCIL MEETING ACTIONS

January 22, 1999 @ 8:30 a.m

By Molly McCammon
Executive Director

DRAFT

Trustee Council Members Present:

Dave Gibbons, USFS	*Frank Rue, ADF&G
•Glenn Elison, USDOI	•Dan Easton, ADEC
Steve Pennoyer, NMFS	•Craig Tillery, ADOL

* Chair
In Anchorage: Gibbons, Elison, Pennoyer, Rue, Easton, and Tillery.

• Alternates:
Glenn Elison served as an alternate for Bob Anderson for the entire meeting.
Dan Easton served as an alternate for Michele Brown for the entire meeting.
Craig Tillery served as an alternate for Bruce Botelho for the entire meeting.

Meeting convened at 8:43 a.m.

Public comments received from ten individuals from Anchorage.

1. Approval of the Agenda

APPROVED MOTION: Unanimously approved the Agenda.

2. Approval of the Meeting Minutes

APPROVED MOTION: Approved the December 15 and December 30, 1998, Trustee Council meeting notes. Motion by Tillery, second by Pennoyer.

3. Kodiak Small Parcels

APPROVED MOTION: Authorized U.S. Department of the Interior, Fish & Wildlife Service to offer the appraised values of $72,000 for 40 acres known as KAP-126 and $72,300 for 80 acres known as KAP-124. Both parcels are located in Three Saints Bay on Kodiak Island. Motion by Elison, second by Tillery.

4. Archaeological Repository

APPROVED MOTION: Authorized proceeding with the proposal submitted by Chugachmiut, for a total of $2.8 million, plus a reasonable amount of funding for project management to be reviewed and approved by the Trustee Council at a later date. Motion by Pennoyer, second by Tillery.

5. Blondeau PWS-1056

APPROVED MOTION: Authorized the State of Alaska to offer $626,800 for PWS-1056 known as the Blondeau parcel, consisting of 100 acres in Valdez. Motion by Tillery, second by Pennoyer.

6. Project 99250

APPROVED MOTION: Authorized $12,700 to the Alaska Department of Environmental Conservation to cover unbudgeted project management costs primarily associated with implementation of the Kodiak Island Borough Master Waste Management Plan (99304). Motion by Pennoyer, second by Tillery.

Meeting adjourned at 4:30 p.m.

raw

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax: 907/276-7178

MEMORANDUM

TO: Trustee Council

THROUGH: Molly McCammon
Executive Director

FROM: Traci Cramer
Administrative Officer

DATE: January 27, 1999

RE: Financial Report as of December 31, 1998

Attached is the Statement of Revenue, Disbursements and Fees, and accompanying notes for the *Exxon Valdez* Joint Trust Fund for the period ending December 31, 1998.

The following is a summary of the information incorporated in the notes and contained on the statement.

Liquidity Account Balance	$48,117,048	
Less: Current Year Adjustments (Note 5)	-23,424,792	
Plus: Other Adjustments (Note 6)	4,540,804	
Uncommitted Fund Balance		$29,233,060
Plus: Future Exxon Payments (Note 1)	$140,000,000	
Less: Remaining Reimbursements (Note 3)	-7,500,000	
Less: Remaining Commitments (Note 7)	-77,331,567	
Total Estimated Funds Available		$84,401,493
Restoration Reserve (Note 8)		$80,153,796

If you have any questions regarding the information provided please do not hesitate to give me a call at 586-7238.

Attachments

cc: Agency Liaisons
Bob Baldauf

STATEMENT OF REVENUE, DISBURSEMENT, AND FEES
EXXON VALDEZ OIL SPILL JOINT TRUST FUND
As of December 31, 1998

	1996	1997	1998	To Date 1999	Cumulative Total
REVENUE:					
Contributions: (Note 1)					
Contributions from Exxon Corporation	70,000,000	70,000,000	70,000,000	0	690,000,000
Less: Credit to Exxon Corporation for Deposit of Maturing Securities				9,261,490	(39,913,688)
Total Contributions	70,000,000	70,000,000	70,000,000	9,261,490	659,347,802
Interest Income: (Note 2)					
Exxon Corporation escrow account					831,233
Joint Trust Fund Account	3,963,073	2,971,070	2,673,585	578,047	21,602,441
Total Interest	3,963,073	2,971,070	2,673,585	578,047	22,433,674
Total Revenue	**73,963,073**	**72,971,070**	**72,673,585**	**9,839,537**	**681,781,476**
DISBURSEMENTS:					
Reimbursement of Past Costs: (Note 3)					
State of Alaska	3,291,446	5,000,000	3,750,000	0	95,309,288
United States	0	0	0	0	69,812,045
Total Reimbursements	3,291,446	5,000,000	3,750,000	0	165,121,333
Disbursements from Liquidity Account:					
State of Alaska	43,340,950	17,846,130	15,686,600	29,520,000	217,997,928
United States	31,047,824	60,101,802	39,468,461	(300)	200,072,483
Transfer to the Restoration Reserve	35,996,231	12,449,552			48,445,783
Total Disbursements	110,385,004	90,397,484	55,155,061	29,519,700	466,516,194
FEES:					
U.S. Court Fees (Note 4)	396,307	254,221	199,946	48,571	2,026,902
Total Disbursements and Fees	**114,072,758**	**95,651,705**	**59,105,007**	**29,568,271**	**633,664,429**
Increase (decrease) in Liquidity Account	**(40,109,685)**	**(22,680,635)**	**13,568,578**	**(19,728,734)**	**48,117,047**
Liquidity Account Balance, beginning balance	117,067,523	76,957,839	54,277,204	67,845,782	
Liquidity Account Balance, end of period	76,957,839	54,277,204	67,845,782	48,117,047	
Current Year Adjustments: (Note 5)					(23,424,792)
Other Adjustments: (Note 6)					4,540,805
Uncommitted Liquidity Account Balance					**29,233,060**
Future Exxon Payments (Note 1)					140,000,000
Remaining Reimbursements (Note 3)					(7,500,000)
Remaining Commitments: (Note 7)					(77,331,567)
Total Estimated Funds Available					**84,401,493**
Restoration Reserve					**80,153,796**

NOTES TO THE STATEMENT OF REVENUE, DISBURSEMENTS AND FEES
FOR THE *EXXON VALDEZ* JOINT TRUST FUND
As of December 31, 1998

1. Contributions - Pursuant to the agreement Exxon is to pay a total of $900,000,000.

Received to Date	$690,000,000
Current Year	$70,000,000
Future Payments	$140,000,000

2. Interest Income - In accordance with the MOA, the funds are deposited in the United States District Court, Court Registry Investment System (CRIS). All deposits with CRIS are maintained in United States government treasury securities with maturities of 100 days or less. Total earned since the last report is $130,269.

3. Reimbursement of Past Costs - Under the terms of the agreement, the United States and the State are reimbursed for expenses associated with the spill. The remaining reimbursements represent that amount due the State of Alaska.

4. Fees - CRIS charges a fee of 10% for cash management services. Total paid since the last report is $13,027.

5. Current Year Adjustments – Includes the current year payment (less reimbursements), outstanding deposits to the Restoration Reserve (see note 8) and proceeds of the 1998 securities (see note 8), $2,064,300 associated with the 1999 Work Plan, plus the following land payments.

Seller	Amount	Due
Afognak Joint Venture	$22,357,990	October 1999
Shuyak	$4,000,000	October 1999
Eyak	$13,000,000	February 1999
Eyak	$14,000,000	September 1999

6. Other Adjustments - Under terms of the Agreement, both interest earned on previous disbursements and prior years unobligated funding or lapse are deducted from future court requests. Unreported interest and lapse is summarized below.

	Interest	Lapse
United States	$343,211	$1,965,541
State of Alaska	$1,432,223	$799,829

7. Remaining Commitments - Includes the following land payments.

Seller	Amount	Due
Afognak Joint Venture	$23,025,833	October 2000
Eyak	$18,000,000	September 2000 through 2002
Shuyak	$8,000,000	October 2000 through 2001
Shuyak	$11,805,734	October 2002
Koniag, Incorporated	$16,500,000	September 2002

8. Restoration Reserve - The amount reported includes funds previously transferred, plus

accrued interest less fees - $54,996,296. Although the 1998 and 1999 payments have not been formally transferred from the Liquidity Account to the Restoration Reserve, pursuant to Trustee Council action the payments have been included in the balance along with accrued interest at a rate of 5%. This includes the $12,000,000 transfer approved for Fiscal Year 1998, plus $775,000 in interest accrued since September 15, 1997, and the $12,000,000 transfer approved for Fiscal Year 1999, plus $175,000 in interest accrued since September 15, 1998. The proceeds from the securities that matured on November 15, 1998 have also been included. This includes $9,095,002, plus $46,081 in interest, less $5,069 in fees. Also included in an adjust of $166,488 for fees.

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax:907/276-7178

MEMORANDUM

TO: Trustee Council Members

FROM: Sandra Schubert
Project Coordinator

THROUGH: Molly McCammon
Executive Director

DATE: February 18, 1999

RE: Quarterly Project Status Summary -- December 31, 1998

This memorandum summarizes the status of reports for the quarter ending December 31, 1998, for all restoration projects funded by the Trustee Council during 1992, 1993, 1994, 1995, 1996, 1997, and 1998. The memorandum also includes progress updates for 1999 projects and the status of the 22 NRDA reports that were not final at the time the settlement agreement was reached.

Attachment A summarizes the status of project reports (including NRDA reports) by agency.

Attachment B lists the reports that are significantly behind schedule. Reports are on this list if (1) they have not yet been submitted to the Chief Scientist, (2) they were reviewed by the Chief Scientist, returned to the PI for revision longer ago than six months, and have not been revised and resubmitted to the Chief Scientist, or (3) they were submitted to the Chief Scientist for peer review more than six months ago and have not yet been peer reviewed.

Attachment C summarizes activities conducted during the October-December quarter for all projects underway in FY 99.

As of December 31, 1998, a total of 268 restoration project reports had been peer reviewed and accepted by the Chief Scientist (this is up from 258 reports accepted as of September 30, 1998). Once accepted by the Chief Scientist, reports are submitted to the Alaska Resources Library and Information Services (ARLIS). As of December 31, 225 reports were available to the public through ARLIS and other libraries around the state (this is up from 220 reports available as of September 30, 1998). Please contact the Restoration Office or ARLIS if you would like a list of the reports currently available to the public.

Status of 1992 Project Reports as of December 31, 1998

A total of 75 reports are being produced on projects funded in the 1992 Work Plan. These reports are considered "final" reports and are subject to peer review and approval by the Chief Scientist. (NOTE: Reports "in progress" are in peer review, are under revision by the PI in response to peer reviewer comments, or have been revised and are undergoing a second review by the Chief Scientist.)

Reports Available to Public at ARLIS	Reports Accepted by Chief Scientist but Not Yet Available to Public	Reports in Progress	No Report Yet Submitted
69	4	2	0

Status of FY 93 Project Reports as of December 31, 1998

A total of 28 final reports are being produced on projects funded in the 1993 Work Plan.

Reports Available to Public at ARLIS	Reports Accepted by Chief Scientist but Not Yet Available to Public	Reports in Progress	No Report Yet Submitted
23	3	1	1

Status of FY 94 Project Reports as of December 31, 1998

A total of 37 final reports are being produced on projects funded in the FY 94 Work Plan.

Reports Available to Public at ARLIS	Reports Accepted by Chief Scientist but Not Yet Available to Public	Reports in Progress	No Report Yet Submitted
34	3	0	0

Status of FY 95 Project Reports as of December 31, 1998

A total of 53 reports are being produced on projects funded in the FY 95 Work Plan. Beginning with the FY 95 project year, "annual" reports are required for continuing projects. Annual reports, although peer reviewed, are not required to be rewritten in response to peer review comments. Rather, the peer review comments are to be used to guide future work on the project.

Reports Available to Public at ARLIS	Reports Accepted by Chief Scientist but Not Yet Available to Public	Reports in Progress	No Report Yet Submitted
46	0	5	0

Status of FY 96 Projects as of December 31, 1998

A total of 51 reports are being produced on projects funded in the FY 96 Work Plan.

Reports Available to Public at ARLIS	Reports Accepted by Chief Scientist but Not Yet Available to Public	Reports in Progress	No Report Yet Submitted
41	5	2	2

Status of FY 97 Projects as of December 31, 1998

A total of 55 reports are being produced on projects funded in the FY 97 Work Plan.

Reports Available to Public at ARLIS	Reports Accepted by Chief Scientist but Not Yet Available to Public	Reports in Progress	No Report Yet Submitted
12	28	10	5

Status of FY 98 Projects as of December 31, 1998

A total of 53 reports are being produced on projects funded in the FY 98 Work Plan. Most of these reports are due April 15, 1999

Status of FY 98 Projects as of December 31, 1998

A project-by-project summary of activities conducted during the October-December quarter is presented in **Attachment C**.

Status of NRDA Reports as of December 31, 1998

A total of 22 NRDA reports that were not final at the time the settlement agreement was reached are in the process of being finalized. A complete description of tasks and expenses associated with completion of each NRDA report is available from the Restoration Office.

Reports Available to Public at ARLIS	Reports Accepted by Chief Scientist but Not Yet Available to Public	Reports in Progress	No Report Yet Submitted
11	8	1	2

ATTACHMENT A

Summary of Project Report Status as of December 31, 1998

1992 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at ARLIS
ADEC	2	0	0	2	2
ADFG	26	0	2	24	22
ADNR	1	0	0	1	1
DOI	33	0	0	33	32
NOAA	11	0	0	11	11
USFS	2	0	0	2	1
TOTAL	**75**	**0**	**2**	**73**	**69**

1993 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at ARLIS
ADEC	2	0	0	2	1
ADFG	12	1	1	10	10
ADNR	0	0	0	0	0
DOI	9	0	0	9	8
NOAA	3	0	0	3	3
USFS	2	0	0	2	1
TOTAL	**28**	**1**	**1**	**26**	**23**

1994 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at ARLIS
ADEC	1	0	0	1	1
ADFG	19	0	0	19	19
ADNR	2	0	0	2	2
DOI	6	0	0	6	4
NOAA	5	0	0	5	5
USFS	4	0	0	4	3
TOTAL	**37**	**0**	**0**	**37**	**34**

ATTACHMENT A

Summary of Project Report Status as of December 31, 1998

1995 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at ARLIS
ADEC	4	0	0	3	4
ADFG	27	0	3	23	24
ADNR	1	0	0	1	1
DOI	7	0	0	7	6
NOAA	8	0	1	7	7
USFS	6	0	1	5	4
TOTAL	**53**	**0**	**5**	**46**	**46**

1996 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at ARLIS
ADEC	1	0	0	1	0
ADFG	27	2	2	23	23
ADNR	3	0	0	3	3
DOI	4	0	0	4	3
NOAA	9	0	0	9	8
USFS	7	0	0	6	4
TOTAL	**51**	**2**	**2**	**46**	**41**

1997 WORK PLAN

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at ARLIS
ADEC	2	0	0	2	2
ADFG	29	3	7	19	3
ADNR	4	0	0	4	1
DOI	6	0	1	5	1
NOAA	8	2	0	6	5
USFS	6	0	2	4	0
TOTAL	**55**	**5**	**10**	**40**	**12**

ATTACHMENT A

Summary of Project Report Status as of December 31, 1998

NRDA REPORT COMPLETION

AGENCY	NUMBER OF REPORTS	Not Yet Submitted to Chief Sci.	In Progress	Peer Rev'd/ Accepted by Chief Scientist	Available to Public at ARLIS
ADEC	1	0	0	1	1
ADFG	17	1	1	15	7
DOI	2	1	0	1	1
NOAA	2	0	0	2	2
TOTAL	**22**	**2**	**1**	**19**	**11**

ATTACHMENT B
Overdue Reports (as of 2/18/99)

Agency	Project Number	PI	Final or Annual	Project Title	Status of Report
ADFG	93033-1	Rothe	Final	Harlequin duck - Afognak habitat assessment/PWS production	Peer reviewed; returned to PI for revision 11/14/95; most recent due date was 7/1/98
ADFG	93033-2	Rothe	Final	Harlequin duck restoration	Never submitted; most recent due date was 7/1/98
ADFG	96258A-1	Tarbox	Final	Sockeye: Kenai	Never submitted; was due 1/1/98 (with manuscript), then expected 10/1/98, now expected 6/30/99
ADFG	96258A-2	Swanton	Final	Sockeye: Kodiak	Never submitted; was due 10/30/97
ADFG	97139A1	Honnold	Final	Little Waterfall barrier bypass improvement	Never submitted; was due 9/30/98
ADFG	97191A-2	Seeb	Annual	Oil-related embryo mortality: genetics	Never submitted; was due 4/15/98
ADFG	98325-3	Highsmith	Ms.	Rocky intertidal	Never submitted; was due 9/30/98
ADFG	98325-4	Highsmith	Ms.	Limpets	Never submitted; was due 9/30/98
DOI	98286	Henrichs	Final	Elders/Youth Conference	Never submitted; was due 9/30/98
NOAA	97163C	Sturdevant	Final	Diet overlap	Never submitted; was due 12/30/98
NOAA	98329	Rice	Mono-graph	Pink salmon synthesis	First draft of monograph was due 12/31/98
ADEC	98291	See	Final	Chenega shoreline cleanup	Never submitted; was due 12/31/98

The following reports were submitted to the Chief Scientist for peer review more than 6 months ago:

NONE

DRAFT

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Proj.No.	Project Title	Proposer	Lead Agency
99007A	**Archaeological Index Site Monitoring**	**D. Reger/ADNR**	**ADNR**

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Work on annual report
Jan-March
UNDERWAY-Work on annual report
April-June
-Submit annual report
-Finalize arrangements for field work
July-Sept
-Complete fieldwork
-Submit charcoal and sediment samples for analysis

99012A-BAA	**Comprehensive Killer Whale Investigation in Prince William Sound**	**C. Matkin/North Gulf Oceanic Society**	**NOAA**

Project Tasks to be Completed this Quarter

Oct-Dec
ALL UNDERWAY:
-Input 1998 data into GIS system
-Write report
-Analyze photos from 1998 fieldwork
-Complete contaminant analysis of 1998 samples
-Conduct acoustic analysis of killer whale calls from previous year
-Continue winter recordings from remote hydrophones
Jan - March
-Submit report (Jan. 5)
April-June
-
July-Sept
-Submit genetic papers
-Submit paper on acoustic separation of resident pods
-Conduct fieldwork

DRAFT

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Proj.No.	Project Title	Proposer	Lead Agency
99025-CLO	**Mechanisms of Impact and Potential Recovery of Nearshore Vertebrate Predators (NVP)**	**L. Holland-Bartels, et al/USGS-BRD**	**DOI**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Meeting of all PIs
UNDERWAY-Begin final analysis for Final Report
Jan-March
-Prepare for *10 Years After* symposium presentation
April-June
-Internal draft of final report to Project Lead Scientist
July-Sept
-Submit draft final report to Trustee Council's Chief Scientist

99043B-CLO	**Monitoring of Cutthroat Trout and Dolly Varden Habitat Improvement Structures**	**D. Gillikin/USFS**	**USFS**

Project Tasks to be Completed this Quarter

Oct-Dec
-
Jan-March
-Complete data analysis
April-June
-Submit final report (April 15)

DRAFT

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Proj.No.	Project Title	Proposer	Lead Agency
99052A	Community Involvement	P. Brown- Schwalenberg/CRRC	ADFG

Project Tasks to be Completed this Quarter

Each month: Coordinator send newsletter to Community Facilitators
Each month: Community Facilitators submit monthly report to Coordinator

Oct-Dec
DONE-Renew contract between ADFG and CRRC
DONE-Renew subcontracts between CRRC and communities
DELAYED; EXPECT TO SELECT INTERNS BY 1/28/99 AND BEGIN WORK IN FEBRUARY-Kodiak interns begin work
DONE (1/28/99)-Training workshop/orientation for Community Facilitators
8 OF 10 COMPLETE; OTHERS UNDERWAY-Community Facilitators update local resource inventories
EXPECT TO DISTRIBUTE END OF JANUARY-Coordinator compile local resource inventories for distribution to PIs
Jan-Mar
-Coordinator coordinate participation of Community Facilitators in 10 Years After Symposium
-Coordinator coordinate provision of technical assistance to villages by EVOS and agency staff to develop project proposals
April-June
-Coordinator review community involvement component of FY 99 proposals; make recommendations to Executive Director and inform Community Facilitators of proposals that would involve their communities
-Interns' end-of-year projects due
July-Sept
-

99052B	Traditional Ecological Knowledge	P. Brown- Schwalenberg/CRRC, H. Huntington	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Renew contract between ADFG and CRRC
DONE-Renew subcontract beween CRRC and TEK Specialist
DONE-Identify community interest in and priorities for Information Workshops
UNDERWAY-Initiate contact with PIs regarding their participation in Information Workshops
Jan-March
-Attend 10 Years After Symposium; make contacts with PIs about including TEK in their FY 00 proposals
April-June
-Review FY 00 proposals and make recommendations to Executive Director regarding TEK
July-Sept.
-

ALSO:
-Hold 4 Information Workshops
-Hold 1 Technical Workshop

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Proj.No.	Project Title	Proposer	Lead Agency
99064	**Monitoring, Habitat Use, and Trophic Interactions of Harbor Seals in Prince William Sound**	K. Frost/ADFG	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Analyze FY 98 aerial survey data
UNDERWAY-Analyze SDR tag data
UNDERWAY-Update"user friendly" population model
DELAYED; PRESENT INFO. AT ANHSC MEETING JANUARY 1999-Distribute Harbor Seal Update
DELAYED TO MAY OR JUNE; FIRST DRAFT PREPARED-Submit final report (masters thesis) on fish distribution/seal diving
Jan-March
-Retrieve 1998 Argos SDR data
-Attend 10 Years After Symposium
-Coordination meeting for ADFG and NOAA harbor seal studies
-Order materials, arrange logistics
-Analyze FY 98 seal/prey fatty acid samples; continue model development
April-June
-Submit annual report
July-Sept
-Satellite tag and sample seals in PWS
-Bayesian reanalysis of survey data
-Conduct aerial surveys in PWS during molting
-Retrieve Argos SDR data

PUBLICATIONS (titles and journals not determined)
June 1999 - PWS seal movements
July 1999 - Fatty acids work

Proj.No.	Project Title	Proposer	Lead Agency
99090	**Monitoring of Oiled Mussel Beds in Prince William Sound**	P. Harris, C. Brodersen/NOAA	NOAA

Project Tasks to be Completed this Quarter

Oct-Dec
-
Jan-Mar
-Arrange logistics
April-June
-Collect samples from PWS
July-Oct
-Hydrocarbon analyses

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Proj.No.	Project Title	Proposer	Lead Agency
99100	**Administration, Science Management, and Public Information**	**All Trustee Council Agencies**	**ALL**

Project Tasks to be Completed this Quarter

One component of Project 99100 is OSPIC/ARLIS. During the quarter ending December 31, 1998, ARLIS staff received 4,694 visitors and 913 incoming calls; responded to 2,797 requests for in-depth information (468 of which were EVOS questions); processed 1,739 interlibrary loans (103 of which were for EVOS materials). No marine ecosystem posters were sold. ARLIS staff reviewed, approved, and distributed 7 final reports and 12 annual reports, and updated the Bibliography of Trustee Council Funded Research, which now includes 227 citations. The OSPIC web page is still active and this past quarter 23,917 people used this page.

99126	**Habitat Protection and Acquisition Support**	**C. Fries/ADNR, D. Gibbons/USFS, G. Elison/DOI**	**ADNR**

Project Tasks to be Completed this Quarter

Project tasks completed 10/1/98-12/31/98
-AJV first closing
-Eyak purchase agreement signed

99127	**Tatitlek Coho Salmon Release**	**G. Kompkoff/Tatitlek IRA Council**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Dismantle/store net pens
DONE-Repair/maintain equipment
Jan-March
-
April-June
-Transport smolt to Boulder Bay and place in net pens (May 20-25)
-Release smolt into Boulder Bay (June 3-8)
July-Sept
-

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Proj.No.	Project Title	Proposer	Lead Agency
99131	Chugach Native Region Clam Restoration	P. Brown- Schwalenberg/ CRRC	ADFG

Project Tasks to be Completed this Quarter

NOTE: FUNDING APPROVED 12/15/98

Oct-Dec
UNDERWAY-Continue installing equipment and working the bugs out of new hatchery facility
UNDERWAY-Develop more nutritious and more palatable algae culture for feeding to littleneck clams at various stages of development
UNDERWAY-Develop techniques for producing 5mm broodstock in hatchery
Jan-Mar
-Submit for peer review new seeding and analysis protocol (by 3/15/99)
-Transfer 5 mm seed to hatchery pre-nursery and FLUPSY (Mar.-July)
April-June
-Continue transfer 5mm seed to hatchery pre-nursery and FLUPSY
-Develop techniques for producing 10-15mm seed for growout
-Seed growout beaches
-Survey growout beaches to determine growth and survival of previous years' seed
July-Sept
-Seed growout beaches
-Survey growout beaches to determine growth and survival of previous years' seed

Conferences
-Pacific Northwest Shellfish Conference

Proj.No.	Project Title	Proposer	Lead Agency
99139A2	Port Dick Creek Tributary Restoration and Development	W. Bucher/ADFG	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Download data from field instruments and analyze data
Jan-March
Prepare field equipment; arrange logistics
April-June
-Submit annual report (April 15)
-Estimate spawning success through estimation of egg to fry survival from the primary and secondary tributaries
-Perform stream stability and hydrologic field work
July-Sept
-Conduct ground surveys to estimate spawning escapement
-Evaluate fry survival data from springtime emigration
-Perform stream stability and hydrologic field work

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Proj.No.	Project Title	Proposer	Lead Agency
99144A	**Common Murre Population Monitoring**	D. Roseneau/USFWS	DOI

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-FY 98 data analysis
Jan-March
-Arrange logistics and hire personnel
April-June
-Submit annual report (April 15)
-Purchase supplies
July-Sept
-Collect data at BarrenIslands
-Data entry

99145-CLO	**Cutthroat Trout and Dolly Varden: Relation Among and Within Populations of Anadromous and Resident Forms**	G. Reeves/USFS, K. Currens/Northwest Indian Fisheries Commission	USFS

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Continue genetic and meristic analysis of FY97 data
Jan-Mar
-Attend 10th Anniversary Symposium
April-June
-
July-Sept
-Submit final report

99149-CLO	**Archaeological Site Stewardship**	D. Reger/ADNR	ADNR

Project Tasks to be Completed this Quarter

Oct-Dec
-
Jan-March
-
April-June
-Submit Final Report (April 15)
July-Sept
-

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Proj.No.	Project Title	Proposer	Lead Agency
99159	**Surveys to Monitor Marine Bird Abundance in Prince William Sound During Winter and Summer: Report and Publication Writing**	B. Lance, D. Irons/USFWS	DOI

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Conduct data analysis
Jan-Mar
-Prepare draft report of 1998 surveys
April-June
-Submit annual report
July-Sept
-Submit trends paper to journal (7/1/99)

PUBLICATIONS
July 1 - Marine bird population trends since the oil spill (Condor)

99162A	**Investigation of Disease Factors Affecting Declines of Pacific Herring Populations: Manuscripts/Conference Attendance (Part A)**	R. Kocan/Univ. Washington	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DELAYED TO NEXT QUARTER; NEARLY COMPLETE-Submit manuscript on VHSV survival in seawater
IN ADDITION, manuscript on Ichthyophonus hoferi in juvenile herring published Dec. 1998
Jan-Mar
-Submit manuscript on natural history of VHSV in juvenile herring
-Submit manuscript on antibody production in wild herring
April-June
-Submit manuscript on age-related immunity to VHS in herring
July-Sept
MANUSCRIPT ACCEPTED DEC. 1998-Submit net-pen related disease studies in herring

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Proj.No.	Project Title	Proposer	Lead Agency
99162B	**Investigations of Disease Factors Affecting Declines of Pacific Herring Populations: Manuscripts/Conference Attendance (Part B)**	**C. Kennedy/Simon Fraser Univ.**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec

MANUSCRIPT COMPLETED-Submit manuscript on effects of oil-water dispersion on swimming performance and exercise recovery in juveniles

MANUSCRIPT IN PROGRESS-Submit manuscript on stress responses in juveniles exposed to oil-water dispersion

Jan-March

-Presentation at 10 Years After symposium

-Submit manuscript on alterations in immunocompetence and disease resistance of juveniles exposed to oil-water dispersion

-Submit manuscript on I*chthyophonus hoferi* and VHS in herring: effects on biochemistry and immunology

April-June

-

July-Sept

-Presentation at AFS meeting (Aug.)

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Proj.No.	Project Title	Proposer	Lead Agency
99163	APEX: Alaska Predator Ecosystem Experiment in Prince William Sound and the Gulf of Alaska	D. Duffy/Paumanok Solutions	NOAA

Project Tasks to be Completed this Quarter

Oct-Dec

-

Jan-March

-10 Year Symposium presentation (E, G, I, L, M, Q, R)

April-June

-Submit annual report (April 15)

July-Sept

-

Publications:

B: Distribution of potential sand lance habitat within PWS as determined through interpretation of hydroacoustic bottom data

E: (1) Interannual variability in diet/foraging effort of kittiwakes in relation to prey abundance
(2) Population dynamics of kittiwakes in PWS
(3) Leg noose for capturing nesting birds

G: (1) Diet and reproduction in pigeon guillemots from PWS and Kachemak Bay
(2) Diet and reproduction in black-legged kittiwakes from PWS
(3) Parental energy expenditure of black-legged kittiwakes in relation to diet/foraging
(4) Effects of diet quality on reproductive success of piscivorous seabirds
(5) Prey exploitation by piscivorous seabirds in PWS: bioenergetics approach

J: (1) Changes in murre population numbers at the Barren Islands colonies
(2) Changes in murre nesting chronology at the Barren Islands colonies

L: (1) Long-term changes in the GOA marine ecosystem
(2) Early life history and dynamics of sand lance: Lower Cook Inlet and Shelikof Strait
(3) Long-term shifts in benthic commercial fishery species: a case study
(4) Pandalid shrimp declines in GOA: forage fish regime shift

S: (1) Aggregations of jellyfish in PWS: Prevalence, characteristics, and associations of juvenile fishes
(2) Trends in scyphomedusae abundance in GOA: peak abundance in 1980

Professional Conferences:

I: Pacific Seabird Group, Waterbird Society, and Society for Conservation Biology
J: Pacific Seabird Group
L: Int'l Pandalid Shrimp Symposium
Q: Pacific Seabird Group
R: Pacific Seabird Group
S: American Society of Limnology and Oceanography

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Proj.No.	Project Title	Proposer	Lead Agency
99169	**A Genetic Study to Aid in Restoration of Murres, Guillemots, and Murrelets in the Gulf of Alaska**	**V. Friesen/Queen's Univ., J. Piatt/USGS-BRD**	**DOI**

Project Tasks to be Completed this Quarter

Oct-Dec
-Submit manuscript for publication
UNDERWAY-Screen FY 98 samples for variation in mitochondrial control region
Jan-March
-Screen FY 98 samples for variation at 8 microsatellite loci
April-June
-Arrange logistics for FY 99 collections
-Screen FY 98 samples for variation at 10 introns
July-Sept
-Collect blood, feather, and tissue samples

Conferences
Society for Conservation Biology, Society for Study of Evolution, and/or American Ornithological Union

Publication
Congdon, B.C., J.F. Piatt, K. Martin, and V.L. Friesen. Rapid population expansion and peripheral isolation in marbled murrelets: Historical vs. contemporary evolutionary processes. Submitted July 1998 to Evolution.

99180	**Kenai Habitat Restoration and Recreation Enhancement**	**A. Weiner/ADNR, K. Kromrey/USFS**	**ADNR**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Pile driving contract for all boardwalks
Jan-March
-
April-June
-Receive materials for all boardwalks, trails, and interpretive node
-Construct boardwalks, trails, and interpretive node
July-Sept
-Monitor resources in area through summer during high use periods

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Proj.No.	Project Title	Proposer	Lead Agency
99188-CLO	**Otolith Thermal Mass Marking of Hatchery Reared Pink Salmon In Prince William Sound**	**T. Joyce/ADFG**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Apply thermal marks to BY 98 embryos
Jan-March
DONE-Estimate harvest stock composition for BY 96
UNDERWAY-Evaluate quality of estimation procedure for BY 96
April-June
-Evaluate thermal mark quality for BY 98
July-Sept
-Submit final report

99190	**Construction of a Linkage Map for the Pink Salmon Genome**	**F. Allendorf/Univ. Montana**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
-Continue screening of DNA polymorphisms to test for Mendelian inheritance and joint segregation
UNDERWAY-Place allozyme, microsatellite, and other codominant markers on the map
DONE-Perform genetic analysis of adults used in experimental matings
Jan-March
-
April-June
73 FAMILIES OF PINK SALMON FROM LIKES CREEK CURRENTLY BEING INCUBATED-Rear experimental progeny at Alaska SeaLife Center
July-Sept
-Perform genetic analysis of progeny produced in experimental matings
-Begin experiments at ASLC to test for adaptive significance and major phenotypic effects of the loci in pink salmon genome in odd-year fish

Conferences
-

Publications
Planned for FY 99 - Haploid linkage map (Journal of Heredity)

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Proj.No.	Project Title	Proposer	Lead Agency
99191A-CLO	**Field Examination of Oil-Related Embryo Mortalities in Pink Salmon Populations in Prince William Sound**	**M. Willette/ADFG**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Assemble data from previous years' sampling
Jan-March
UNDERWAY-Conduct statistical analyses
April-June
-Submit final report (April 15)

Publications
-Evidence of damage to pink salmon populations inhabiting PWS: final perspectives (Transactions of American Fisheries Society)

Conferences
-

Proj.No.	Project Title	Proposer	Lead Agency
99195	**Pristane Monitoring in Mussels**	**J. Short, P. Harris/NOAA**	**NOAA**

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Analyze 1998 hydrocarbon data
CANCELED (NO TIME) -Revise brochure
DONE-Commence fall sampling
Jan-March
-Commence spring sampling
April-June
-Submit annual report (April 15)
-Prepare report for public and high schools
July-Sept
-Continue collecting samples
-Analyze 1999 samples for pristane

Publications
-Expect to complete 2 in FY 99 (titles not provided)

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Proj.No.	Project Title	Proposer	Lead Agency
99196-CLO	**Genetic Structure of Prince William Sound Pink Salmon**	**C. Habicht/ADFG**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
CANCELED; WILL PRESENT AT PINK AND CHUM WORKSHOP IN MARCH AND EVOS 10-YEAR SYMPOSIUM-Present even-year results at Western Division AFS
DONE-Standardize allozyme alleles across labs
Jan-March
-Statistically analyze all collections
April-June
-Submit final report (April 15)
July-Sept
-

99210	**Youth Area Watch**	**R. Sampson/Chugach School District**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-School site orientations
DONE-Select students for participation in Youth Area Watch program, including students in new communities of Port Graham, Nanwalek, and Seldovia
DONE-Provide protocol training to site teachers
DONE-Student orientation and training
DONE-Prepare weather station at each site
DONE-Students submit proposals for local restoration projects
Jan-March
-Project coordinator send data to PIs
-Site teacher follow-up training
April-June
-Project coordinator send data to PIs
-Students complete project reports
July-Sept
-

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Proj.No.	Project Title	Proposer	Lead Agency
99225	Port Graham Pink Salmon Subsistence Project	E. Anahonak/Port Graham IRA Council	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
CANCELED; THE HEAT TREATMENT EQUIPMENT WAS NOT INSTALLED IN THE TEMPORARY INCUBATION FACILITY SOON ENOUGHTO PERMIT OTOLITH MARKING-Heat-treat incubators containing the lots intended for extended rearing and heated water rearing, to produce a separate otolith mark for each lot
UNDERWAY-After eye-up, eggs from the lot intended to reach 1 gram by late May are put on a heated water regimen
Jan-March
-Fish in lots with ambient water temperature incubation will hatch and fish in lot on heated water incubation will emerge
April-June
-Release heated-water-rearing lot into zooplankton bloom (May)
-Release standard-treatment-rearing lot into zooplankton bloom (May)
July-Sept
-Release extended-rearing lot (late June, early July)
-Monitor pink salmon return to Port Graham
-Capture hatchery broodstock
-Egg take

Conferences
DONE-Alaska Hatchery Manager's Workshop
-Native American Fish and Wildlife Society

Proj.No.	Project Title	Proposer	Lead Agency
99245	Community-Based Harbor Seal Management and Biological Sampling	J. Fall/ADFG, M. Riedel/Alaska Harbor Seal Commission	ADFG

Project Tasks to be Completed this Quarter

Ongoing
UNDERWAY-Biological sample collection
Oct-Dec
DONE-Update contract with ANHSC
DONE-Hire community technicians
DONE (SELDOVIA, PORT GRAHAM, AND NANWALEK HUNTERS IN A SESSION HELD IN SELDOVIA; EYAK HUNTERS)-Hold training sessions for biological sampling for new technicians
ALSO: Riedel gave presentation to Rural Governance Commission, taught 2 Cordova High School marine biology classes the harbor seal biosampling methods, gave a presentation to 5th graders at Cordova Elementary School, sent newsletters to the biosamplers, and traveled to Yakutat to help coordinate a biosampling effort in Southeast Alaska
Jan-Mar
DONE-ANHSC workshop
April-June
-Distribute proceedings report
July-Sept
-

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Proj.No.	Project Title	Proposer	Lead Agency
99247	Kametolook River Coho Salmon Subsistence Project	J. McCullough, L. Scarbrough/ADFG	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Install net holding pens and seine coho salmon to keep in pens
DONE-Conduct stream surveys
DONE-Conduct escapement surveys
DONE-Perform coho salmon egg take
DONE-Sample salmon for genetic and pathology tests
DONE-Consult with teachers and set up school aquarium
Jan-March
DONE-Attend Chignik State Board of Fish meeting
DONE-Transport eyed eggs to the aquarium
-Analyze subsistence and commercial harvest data
-Attend Chignik RPT meeting and provide status report
-Submit Fish Transport permit request to ADFG
April-June
-Review meeting with assessment team to evaluate the project
-Fry release from egg boxes
-Perryville students release aquarium fry (May)
-Monitor monthly thermograph and incubation boxes
July-Sept
-Monitor monthly thermograph and incubation boxes
-Conduct stream surveys

99250	Project Management	All Trustee Council Agencies	ALL

Project Tasks to be Completed this Quarter

Not applicable

99250(am)	Project Management	ADEC	ALL

Project Tasks to be Completed this Quarter

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Proj.No.	Project Title	Proposer	Lead Agency
99252	Investigations of Genetically Important Conservation Units of Rockfish and Walleye Pollock	J. Seeb, L. Seeb/ADFG	ADFG

Project Tasks to be Completed this Quarter

NOTE: DPD NOT APPROVED AS OF 12/31/98

Oct-Dec
-
Jan-March
-
April-June
-
July-Sept
-

Conferences
-

Proj.No.	Project Title	Proposer	Lead Agency
99256B	Sockeye Salmon Stocking at Solf Lake	D. Gillikin/USFS, P. Shields/ADFG	USFS

Project Tasks to be Completed this Quarter

Oct-Dec

Jan-March
-
April-June
-Award logistics contracts (USFS)
-Release second year of sockeye fry at Solf Lake (PWSAC)
July-Sept
-Conduct limnological sampling and prepare report (ADFG)
-Conduct egg take for FY 2000 stocking at Solf Lake (PWSAC)
December 1999 (FY 2000)
-Complete survey and final design of fishway (USFS)

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Proj.No.	Project Title	Proposer	Lead Agency
99263	**Assessment, Protection and Enhancement of Salmon Streams in Lower Cook Inlet**	**W. Meganack, Jr./Port Graham Corporation**	ADFG

Project Tasks to be Completed this Quarter

NOTE: PROJECT APPROVED 12/15/98

Oct-Dec
-Monitor Windy Creek Left rearing ponds; conduct maintenance as needed
-Monitor Port Graham River fish pass; conduct maintenance as needed
Jan-March
-Develop final enhancement plans
-Field review projects
April-July
-Maintain fish pass
-Plant willow and alders around rearing ponds and add woody debris
-Monitor use of rearing ponds by coho fry and smolt
-Conduct salmon run surveys on Port Graham River (July-Oct.)
Aug-Sept
-

99273	**Surf Scoter Life History and Ecology: Linking Satellite Technology with Traditional Knowledge to Conserve the Resource**	**D. Rosenberg/ADFG**	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Coordinate and plan community involvement, Youth Area Watch, and TEK
DONE-Update scoter GIS database
DONE-Submit grants for additional satellite transmitter
DONE-Design configuration and order transmitter
Jan-March
-Attend synthesis workshops in local communities
-Meet with local subsistence harvesters
-Prepare for field season
April-June
-Conduct reconnaissance surveys for scoter concentrations
-Capture birds and implant radios
July-Sept
-Monitor satellite transmitters
-Conduct surveys and field work and nesting and molting areas

Conferences
-The Non-Breeding Biology of Diving Ducks: An International Conference (March 1999)

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Proj.No.	Project Title	Proposer	Lead Agency
99278	**Development of an Ecological Characterization and Site Profile for Kachemak Bay/Lower Cook Inlet**	**G. Seaman/ADFG**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Hire habitat biologist
DONE-Develop questionnaire to use in interviews
UNDERWAY-Begin interviews
DELAYED UNTIL NEXT QUARTER-Start digitizing new spatial data
Jan-March
-Continue interviews
-Distribute draft sections in project outline for review
-Provide draft materials to CSC for review and comment
April-June
-Complete interviews
Complete capture, digitizatoin, and manipulations of GIS data
July-Sept
-Complete CSC review of products
-Finalize all spatial and narrative products

Conferences
-Coastal Zone 99

Proj.No.	Project Title	Proposer	Lead Agency
99289-BAA	**Status of Black Oystercatchers in Prince William Sound**	**S. Murphy/ABR, Inc.**	**NOAA**

Project Tasks to be Completed this Quarter

Oct-Dec
-
Jan-March
-Present poster at 10 Years After symposium
April-June
-Submit final report
-Prepare white-literature publication
July-Sept
-

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Proj.No.	Project Title	Proposer	Lead Agency
99290	**Hydrocarbon Data Analysis, Interpretation, and Database Maintenance**	**J. Short, B. Nelson/NOAA**	**NOAA**

Project Tasks to be Completed this Quarter

Ongoing
-Store samples
-Analyze data

April-June
-Submit annual report in the form of updated release of hydrocarbon data software (April 15)

Conferences
-Quality Assurance/Quality Control Annual Meeting

99291-CLO	**Chenega Shoreline Residual Oiling Reduction: Final Report Writing**	**M. See/ADEC**	**ADEC**

Project Tasks to be Completed this Quarter

Oct-Dec
DELAYED-Submit final report (12/31/98)
Jan-March
DELAYED-Presentation to community of Chenega Bay (February)

99300	Synthesis of the Scientific Findings from the *Exxon Valdez* Oil Spill Restoration Program	**R. Spies/Applied Marine Sciences**	**ADNR**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Finalize list of invitees to food-web modeling workshop (sponsored under Project 98330)
UNDERWAY-Submit synthesis papers to scientific journals
Jan-March
DONE-Finalize agenda for food-web modeling workshop
DONE-Conduct food web modeling workshop
-Prepare synopsis of types of data systems currently in use by large-scale monitoring programs around the nation
April-June
-
July-Sept
-Submit to Executive Director a draft report describing a long-term research and monitoring program for integrating science and management

Publications
3 papers are expected to be submitted early in FY 99

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Proj.No.	Project Title	Proposer	Lead Agency
99304	Kodiak Island Borough Master Waste Management Plan	J. Selby/Kodiak Island Borough	ADEC

Project Tasks to be Completed this Quarter

PROJECT REQUIRES SIGNIFICANT WORK ON MOU WITH KODIAK ISLAND BOROUGH TO ESTABLISH PROJECT MANAGEMENT SYSTEM. ADEC ANTICIPATES THAT AN ADDITIONAL 2 MONTHS WILL BE REQUIRED TO REVISE AND RENEGOTIATE MOU WITH AN ANTICIPATED PROJECT START DATE OF APRIL 1999.

Oct-Dec
-Design burn boxes
Jan-March
-Advertise/bid upgraded incinerators
-Design used oil and HHW sheds
-Advertise/bid used oil heat-recovery burners
-Advertise/bid smart ash incinerator
April-June
-Obtain supplies to consolidate scrap
-Advertise/bid burn boxes
-Prepare O&M manuals
-Training: contracting
-Training: coordinate scrap marshalling
-Advertise/bid used oil and HHW sheds
-Order parts to upgrade used oil burner feed
-Order antifreeze collection drums, fish totes
-Order safety and spill equipment
-Develop operations plan for used oil and HHW
-Develop spill response plan for minor spills of used oil and HHW
-Order spill response equipment
July-Sept
-Design landfill drainage
-Design blasting/excavating
-Complete scrap consolidation
-Receive and install burn boxes
-Purchase and install signs
-Training: burn boxes
-Training: consolidate/cover existing materials
-Train/install incinerator upgrades
-Trainees meet with ADEC: solid waste
-Training: used oil and HHW

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Proj.No.	Project Title	Proposer	Lead Agency
99306	**Ecology and Demographics of Pacific Sand Lance in Lower Cook Inlet**	**J. Piatt/USGS-BRD**	**DOI**

Project Tasks to be Completed this Quarter

Oct-Dec
POSTPONED TO MAY-Submit masters thesis
-Publish manuscripts on sand lance maturity, spawning, and growth
-Submit for publication report on sand lance energetics
Jan-March
-Analyze historical trawl database for larval sandlance
April-June
-Begin field season
-Submit annual report
July-Sept
-Complete field season

Proj.No.	Project Title	Proposer	Lead Agency
99311	**Pacific Herring Productivity Dependencies in the Prince William Sound Ecosystem Determined with Natural Stable Isotope Tracers**	**T. Kline/PWSSC**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Prepare new samples for mass spectrometry
UNDERWAY (LAST SAMPLES AT UAF)-Data integration and synthesis
Jan-March
-
April-June
-Submit final report
July-Sept
-Complete data synthesis and assessment

Publications
BEING REVISED (MAY BE NEW TITLE)-Fall isotopic and somatic energy signatures of young of the year Pacific herring in PWS: implications for trophic studies

Conferences
National meeting such as AFS, ASLO, or AGU

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Proj.No.	Project Title	Proposer	Lead Agency
99314	**Homer Mariner Park Habitat Assessment and Restoration Design**	**J. Cushing/City of Homer**	**ADNR**

Project Tasks to be Completed this Quarter

Oct-Dec
POSTPONED-Collect historic information and data
POSTPONED-Conduct community involvement component of project
CONTRACT AWARD MUST BE APPROVED BY CITY COUNCIL; SCHEDULED 2/22/99-Award contracts
Jan-March
-Winter field surveys
-Analyze historic information and data
April-June
-
July-Sept
-Spring, summer, and fall field efforts
-Produce EA

99320-CLO	**Sound Ecosystem Assessment (SEA)**	**T. Cooney, et al/UAF**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE (OCT. 24-25)-Review rough draft of all synthesis/summary manuscripts at SEA synthesis workshop
Jan-March
-Review second drafts of all manuscripts at SEA synthesis workshop
-Block out final report format
-Prepare manuscripts and final reports in final form
-Presentation at EVOS 10-Year Symposium
April-June
-Submit SEA final report to Trustee Council and Fisheries Oceanography (April 15)
-Submit SEA synthesis volume to Trustee Council and Fisheries Oceanography (April 15)
July-Sept
-Respond to revisions to final report and synthesis volume

Conferences
E: Sea Grant workshop on ecosystem considerations in fisheries management
CANCELED - G: ASLO meeting (February, Santa Fe) (2 people)
R: ERIM Coastal Remote Sensing
AGU
T: AFS (4 people)

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Proj.No.	Project Title	Proposer	Lead Agency
99320M-CLO	**Sound Ecosystem Assessment (SEA): Observational Oceanography in Prince William Sound and the Gulf of Alaska**	**S. Vaughan/PWSSC**	**NOAA**

Project Tasks to be Completed this Quarter

Oct-Dec
-
Jan-March
-
April-June
-Submit final SEA report (April 15)
July-Sept
-

99320N-BAA	**Acoustic Assessment of Pink Salmon Predators, Macrozooplankton Prey and Juvenile Herring in Prince William Sound**	**G. Thomas/PWSSC**	**NOAA**

Project Tasks to be Completed this Quarter

Oct-Dec
-Analyze field data
Jan-March
-
April-June
--Submit final SEA report (April 15)
July-Sept
-

99325-BAA	**Assessment of Injury to Intertidal and Nearshore Subtidal Communities Following EVOS: Preparation of Manuscripts for Publication**	**T. Dean/Coastal Resources Associates, Inc.**	**NOAA**

Project Tasks to be Completed this Quarter

Publications (review drafts to be submitted by 3/31/99)
1) Algal community function following EVOS
2) Summary of impacts of EVOS on nearshore subtidal communities

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Proj.No.	Project Title	Proposer	Lead Agency
99327	**Pigeon Guillemot Restoration Research at the Alaska SeaLife Center**	**D. Roby/Oregon State Univ.**	**DOI**

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Examine sources of variability in hatching success
UNDERWAY-Analyze growth rates and fledging characteristics
DONE-Submit blood samples to UAF for analysis
Jan-March
-Attend 10 Years After symposium
April-June
-Install artificial nest sites, decoys, and playback sound equipment at ASLC
-Annual report due April 15
July-Sept
-Raise guillemot nestlings in captivity
-Release captive-reared fledglings
-Conduct captive rearing experiments
-Collect field data on use of artificial nest sites
-Collect samples for dose-response experiment
-Complete feeding trials

99328	**Synthesis of the Toxicological and Epidemiological Impacts of the Oil Spill on Pacific Herring**	**M. Carls/NOAA**	**NOAA**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Author meeting -- assign writing
Jan-March
UNDERWAY-Toxicological section complete for review by other authors (Jan.)
-Disease section complete for review by other authors (Feb.)
-Presentation at 10 Years After symposium (March)
April-June
-Complete internal review (May)
-Submit manuscript to peer reviewed journal (June)
July-Sept
-Return revised manuscript to journal for publication (target Canadian Jounral of Fisheries and Aquatic Sciences)

Conferences
SETAC (?)

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Proj.No.	Project Title	Proposer	Lead Agency
99329	**Synthesis of the Toxicological Impacts on Pink Salmon**	S. Rice/NOAA	NOAA

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-First draft of monograph complete
Jan-March
-Complete Murphy stream sediment paper and final report; submit by March
-Complete second draft of manuscript
-Presentation at 10 Years After symposium
April-June
-Submit synthesis monograph to journal for publication (April)
July-Sept
-

99330-BAA	**Mass-Balance Models of Trophic Fluxes in EVOS-Impacted Areas**	D. Pauly/UBC, S. Pimm/U. Tenn	NOAA

Project Tasks to be Completed this Quarter

Oct-Dec
REPLACED BY ECOSYM MODEL BECAUSE EXPLICIT SEASONAL INFORMATION DATA NOT AVAILABLE-Incorporate explicit seasonal information into PWS Ecopath model
(1) IN PRESS, LOWELL WAKEFIELD SYMPOSIUM. MASS BALANCE MODEL OF TROHPIC FLOWS IN PWS: DECOMPARTMENTALIZING ECOSYSTEM KNOWLEDGE; (2) TROPHIC MASS BALANCE MODEL OF ALASKA'S PWS ECOSYSTEM FOR THE POST-SPILL PERIOD 1994-96. FISHERIES CENTER RES. REPORTS 1998. VOL6, #2-Submit scientific papers on above
Jan-March
-Hold PWS model specification workshop (Jan.)
-Complete CD-ROM containing PWS Ecopath model and graphic simulation scenarios, an Alaska Fish database, and other databases
-Presentation at 10 Years After symposium
April-June
-Submit scientific papers documenting key features and behavior of trophic mass-balance models including Ecospace
July-Sept
-Final dissemination of project results and products (Sept.)

Conferences
-Lowell Wakefield Fisheries Symposium, Anchorage, 9/30/98

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Proj.No.	Project Title	Proposer	Lead Agency
99338	**Survival of Adult Murres and Kittiwakes in Relation to Forage Fish Abundance**	J. Piatt/USGS-BRD	DOI

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Analysis of re-sighting data collected in FY 98
DONE-Process FY 98 banding data and submit to USFWS banding lab
Jan-Mar
-Attend 10th Anniversary
April-June
-Arrange logistics
-Begin field work (re-sighting effort at Gull and Chisik islands)
-Submit annual report (April 15)
July-Sept
-Band new birds and Gull and Chisik islands
-Compile resighting results; conduct data analysis

Conferences
Feb 24-28, 1999: Annual Meeting of the Pacific Seabird Group

99339	**Western Prince William Sound Human Use and Wildlife Disturbance Model**	K. Murphy, L. Suring/USFS	USFS

Project Tasks to be Completed this Quarter

Oct-Dec
DELAYED UNTIL MARCH-Analyze survey data
DELAYED UNTIL MARCH-Evaluate and adjust existing use model
Jan-March
-Synthesize literature on disturbance into draft management recommendations
April-June
-Identify future use projections and apply to model
-Finalize management recommendations
July-Sept
-Prepare final report and model

Conferences
-Annual GIS
-Wildlife Society

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Proj.No.	Project Title	Proposer	Lead Agency
99340	**Toward Long-Term Oceanographic Monitoring of the Gulf of Alaska Ecosystem**	**T. Weingartner/UAF**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Purchase mooring equipment
DONE-Deploy mooring equipment
DID OCTOBER AND DECEMBER SURVEYS; CANCELED NOVEMBER DUE TO POOR WEATHER AND BREAKDOWN OF THE SURVEY VESSEL-Monthly CTD surveys
DELAYED PENDING FINAL CALIBRATION INFORMATION ON THE CTD DATA (EXPECT END OF FEBRUARY) AND MOORING DATA (EXPECT MARCH)-Update homepage
Jan-March
-Monthly CTD surveys
-Update homepage
April-June
-Monthly CTD surveys
-Update homepage
July-Sept
-Monthly CTD surveys
-Update homepage

Conferences
American Geophysical Union (?)

99341	**Harbor Seal Recovery: Controlled Studies of Health and Diet**	**M. Castellini/UAF**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Trial 1 of staggered feeding protocol (Sept.-Dec.)
DONE-Assimilation efficiency experiments
DONE-Begin frequency studies on separate group of two
Jan-March
-Trial 2 of staggered feeding protocol (Jan.-April)
-Assimilation efficiency experiments
-Continue frequency trials
April-June
-Trial 3 of staggered feeding protocol (May-Aug.)
-Assimilation efficiency experiments
-Continue frequency trials
July-Sept
-Assimilation efficiency experiments
-Continue frequency trials

Conferences
Experimental Biology Meeting (April)

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Proj.No.	Project Title	Proposer	Lead Agency
99346	**Publication of an Indexed Bibliography of the Genus Ammodytes (Sand Lance)**	**R. Armstrong/UAA, M. Willson/USFS, H. Robards/DOI**	**USFS**

Project Tasks to be Completed this Quarter

Oct-Dec
-Submit publication for peer review
Spring 1999
-Publish (General Technical Report, USFS)

99347	**Fatty Acid Profile and Lipid Class Analysis for Estimating Diet Composition and Quality at Different Trophic Levels**	R. Heintz/NOAA	NOAA

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Complete sample processing for spatial variability of FA
DELAYED-Begin analysis of temporal variability samples
DELAYED-Complete statistical analysis of data from spatial variability samples
Jan-March
-
April-June
-
July-Sept
-Complete sample processing for temporal variability of FA

Conferences
National Meeting of American Fisheries Society (Sept.)

Publications
Spatial variation of FA profiles and lipid class compositions in herring, sand lance, and their prey in PWS (submit to journal Jan. 1999)

99348	**Responses of River Otters to Oil Contamination: A Controlled Study of Biological Stress Markers**	**M. Ben-David, T. Bowyer, L. Duffy/UAF**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Conduct experiments at ASLC (June 1998-Feb. 1999)
Jan-March
-Release animals to the wild
April-June
-
July-Sept
-Data entry, analysis, and write-up

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Proj.No.	Project Title	Proposer	Lead Agency
99361-BAA	**Dynamic Graphical Techniques for Ecosystem Synthesis, Communication and Product Delivery**	**J. Allen/PWSSC, T. Cooney/UAF**	**NOAA**

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec
-Complete draft storyboard
-Draft core model animations
Jan-March
-Final content approved by SEA team
-Present electronic synthesis at 10 Years After symposium
April-June
-Begin analog video production
-Pre-review of storyboard by Restoration Office (by May 15)
-Script and media clip list finalized with video production services
-Pre-review of script and some media clips by Restoration Office (by July 30)
July-Sept
-SEA video mastering

99366	**Improved Saimon Escapement Enumeration Using Remote Video and Time-Lapse Recording Technology**	**E. Otis/ADFG**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Purchase video equipment and materials
Jan-March
-Fabricate strongbox for video eqiupment
-Arrange logistics
April-June
-Deploy video equipment
-Operate weir camp (June-Aug)
Aug-Sept
-Evaluate camera's performance against weir counts

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Proj.No.	Project Title	Proposer	Lead Agency
99367	**Synthesis and Publication of Fisheries Research**	**M. Willette/ADFG**	**ADFG**

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Assemble data for analysis

Submit June 1: Physical and biological factors affecting growing of Pacific herring in PWS

Submit July 15: Comparison of ground and aerial survey estimates of Pacific salmon spawners

Submit Sept. 1 - Homing and straying patterns of coded-wire tagged pink salmon in PWS

Submit Sept. 30 - Factors affecting maring survival of wild pink salmon in PWS

99368	**Maps Depicting Environmentally Sensitive Areas in Prince William Sound (Summary Seasonal Maps Only)**	**J. Whitney/NOAA**	**NOAA**

Project Tasks to be Completed this Quarter

Oct-Dec
POSTPONED TO FEBRUARY-Begin data collection and evaluation
POSTPONED TO APRIL-Classify shorelines
Jan-March
POSTPONED TO SEPTEMBER-Send out draft maps for review
April-June
POSTPONED TO NOVEMBER-Review maps returned for final editing
POSTPONED TO DECEMBER-Complete digital data
July-Sept
POSTPONED TO FEBRUARY 2000-Color separates completed and approved
POSTPONED TO FEBRUARY 2000-Printing of maps advertised for bids
POSTPONED TO MARCH 2000-Printed maps and digital data delivered (Sept. 30)

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Proj.No.	Project Title	Proposer	Lead Agency
99371	**Effects of Harbor Seal Metabolism on Stable Isotope Ratio Tracers**	D. Schell/UAF	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Begin analysis of standard amino acid samples from seal tissues
DELAYED; MACHINE UNAVAILABLE FOR NEW DEVELOPMENT AT THIS TIME-Protocol development for fatty acid analysis
Jan-March
-Establish methodology and protocols for the isolation and identification of amino acids from harbor seal blood proteins
-Begin isotopically labeled feeding experiments
April-June
-Analytical work
-Continue feeding experiments
July-Sept
-Analytical work
-Continue feeding experiments

99375	**Effect of Herring Egg Distribution and Ecology on Year-Class Strength and Adult Distribution**	E. Brown, B. Norcross/UAF	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DONE; ALL SPAWN LOCATIONS FOR ALL YEARS DIGITIZED FOR GIS ANALYSIS-Complete documentation of variability of herring spawn and year-class strength
UNDERWAY; EXPERIMENTING WITH CHANGING DISPLAY FORMAT TO TIME-SERIES CORRELATIONS INSTEAD-Finish correlation between spawn and year-class strength
Jan-March
HAVE DEFINED VARIABLES FOR SELECTION BUT WILL DELAY COMPLETION UNTIL APRIL AT REQUEST OF PWSSC (CONTRACTOR) IN ORDER TO PARTICIPATE FULLY IN EVOS 10TH ANNIVERSARY SYMPOSIUM-Define oceanographic regions with accompanying data sets
-Initial run of GAM
April-June
-Statistical analysis completed
July-Sept
- Publication finalized
-Attend AFS meeting

Conferences
AFS, Alaska Chapter

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Proj.No.	Project Title	Proposer	Lead Agency
99379	**Assessment of Risk Caused by Residual Oil in Prince William Sound Using P450 Activity in Fishes**	S. Jewett/UAF	ADFG

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec

-

Jan-March

-Analyze 1998 P450 samples

-Arrange logistics for June cruise

April-June

-Collect samples (sediment and fish)

July-Sept

-Analyze P450 and sediment hydrocarbon samples

Proj.No.	Project Title	Proposer	Lead Agency
99381	**Status of Seabird Colonies in Northeastern Prince William Sound**	M. Bishop/USFS	USFS

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec

-

Jan-March

-

April-June

-Coordinate with Youth Area Watch program

-Conduct surveys and colony counts

July-Sept

-Prepare report, distribute data

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Proj.No.	Project Title	Proposer	Lead Agency
99391	**Cook Inlet Information Management/Monitoring System**	J. Hock/ADEC, C. Fries/ADNR	ADNR

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Establish written contact with user community
DONE-Schedule preliminary Cook Inlet Coalition Meeting to introduce project
DONE-Develop cooperative agreement with EPA
DONE-Distribute list of available datasets to user community
DONE-Conduct User Needs Analysis Workshop
UNDERWAY-Receive results of User Needs Analysis Workshop from contractor
Jan-March
DRAFT USER NEEDS ANALYSIS SENT TO ALL-Cook Inlet Coalition review user analysis
-Begin development of prototype
April-June
-
July-Sept
-Prototype evaluation initiated through Cook Inlet Coalition
-Initiate agency staff training for prototype evaluation
-Develop system specifications

Proj.No.	Project Title	Proposer	Lead Agency
99393-BAA	**Prince William Sound Food Webs: Structure and Change**	T. Kline/PWSSC	NOAA

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec
-Participate in Ecopath workshop
-Prepare archived samples for mass spectrometry (Oct-April)
Jan-March
-Mass spectrometry at UAF (Jan-Oct)
April-June
-Process new isotope data (June-Oct)
July-Sept
-

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Proj.No.	Project Title	Proposer	Lead Agency
99401	**Assessment of Spot Shrimp Abundance in Prince William Sound**	**C. Hughey/ Valdez Native Tribe, C. O'Clair/ NOAA**	**NOAA**

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec
-
Jan-March
DONE-NOAA consult with Valdez Native Tribe shrimpers and ADFG
April-June
-Arrange logistics for sampling cruise in spring/summer 1999
-Conduct preliminary, exploratory cruise to assess new sampling sites
July-Sept
-Arrange logistics for sampling cruise in Oct. 1999

Proj.No.	Project Title	Proposer	Lead Agency
99405	**Port Graham Salmon Hatchery Reconstruction**	**E. McMullen/Port Graham Village Council**	**ADFG**

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec
-Select engineering and design firm
-Design approved
-Permits applied for
-Hatchery construction put out for bid
Jan-March
-Bid awarded
April-June
-Site preparation
-Hatchery construction (June-Nov.)
July-Sept
-Construction
Oct-Dec
-Contractor demobilization

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Proj.No.	Project Title	Proposer	Lead Agency
99423	Pattern and Processes of Population Change in Sea Otters	J. Bodkin/USGS-BRD, T. Dean/Coastal Resource Associate	DOI

Project Tasks to be Completed this Quarter

Oct-Dec

-

Jan-March

-Plan surveys and community involvement
-Select transects for aerial surveys
-Select sites for urchin collections

April-June

-Conduct aerial sea otter surveys and prey surveys (June-Aug)

July-Sept

-Data analysis and report preparation
-Coordinate with local communities

99424	Restoration Reserve	All Trustee Council Agencies	ALL

Project Tasks to be Completed this Quarter

An additional $12 million was approved by the Trustee Council August 13, 1998 for deposit to the Restoration Reserve during FY 99.

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Proj.No.	Project Title	Proposer	Lead Agency
99434	**East Amatuli Island Remote Video Link**	**M. O'Meara/Pratt Museum**	DOI

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec
-
Jan-March
-Customize and specialize system for Barren Islands use
-Modify Pratt Museum exhibits to accommodate receiver station
April-June
-Assemble transmitter and receiver station at Pratt
-Install relay station; establish two-way link
-Install video system at East Amatuli site
-Travel to East Amatuli; inspect and perform necessary maintenance on remote camera system
July-Sept
-Education programs at Pratt
-Remove system from East Amatuli (9/15/99)

Conferences
Association of Science-Technology Centers or National Marine Educators Association

99441	**Harbor Seal Recovery: Effects of Diet on Lipid Metabolism and Health**	**R. Davis/Texas A&M Univ.**	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Set up fatty acid analysis and muscle lipid and enzyme analysis
DONE-Trial 1 of staggered feeding protocol at ASLC (Sept-Dec)
SAMPLES TAKEN; ANALYSIS UNDERWAY-Obtain and analyze blubber and muscle biopsies
Jan-March
-Trial 2 of staggered feeding protocol (Jan-April)
-Obtain and analyze blubber and muscle samples
April-June
-Trial 3 of staggered feeding protocol (May-Aug)
-Obtain and analyze blubber and muscle samples
-Obtain blubber and muscle samples from wild harbor seals in PWS in conjunction with biosampling program
July-Sept
-

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Proj.No.	Project Title	Proposer	Lead Agency
99459	**Residual Oiling of Armored Beaches and Mussel Beds in the Gulf of Alaska**	G. Irvine/USGS-BRD, D. Mann/UAF, J. Short/NOAA	DOI

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec
-
Jan-March
-Arrange logistics
April-June
-Field work (May-Aug.)
July-Sept
-Analyze field data

99462	**Effect of Disease on Pacific Herring Population Recovery in Prince William Sound**	G. Marty/Univ. of California Davis	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Collect fall samples
DONE-Scale analysis of fall samples complete
Jan-March
DONE-Virology and bacteriology of fall samples complete
April-June
-Collect spring samples
July-Sept
-Statistical analysis of fall samples complete
-Scale analysis of spring samples complete
-Virology and bacteriology of spring samples complete

99466	**Recovery Status of Barrow's Goldeneyes**	D. Esler/USGS-BRD	DOI

Project Tasks to be Completed this Quarter

NOTE: PROJECT NOT APPROVED UNTIL DECEMBER 1998

Oct-Dec
-
Jan-March
-
April-June
-
July-Sept
-

DRAFT

Exxon Valdez Oil Spill Project Status Summary
FY 99 Work Plan
Quarter Ending December 31, 1998

Proj.No.	Project Title	Proposer	Lead Agency
99468-BAA	**FEATS: Fundamental Estimations of Acoustic Target Strength**	J. Kirsch, G. Thomas/PWSSC	NOAA

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Field experiments (non-spawning herring)
DONE-Preliminary results/equation available
Jan-March
-In-situ data aligned
-Field experiments (pre-spawning herring)
April-June
-
July-Sept
-Field experiments (sand lance)
-Results available, final report written

Conferences -- Will present results:
UAF seminar (Aug. 1999)
Professional meeting (Sept. 1999)

99470	**10 Year Symposium and Related Events and Materials**	Restoration Office	ALL

Project Tasks to be Completed this Quarter

Oct-Dec
UNDERWAY-Develop schedule of venues for traveling exhibit
DONE-Contract with graphic artist for status report layout and artwork
DONE-Publish advertisements and announcements for symposium
DONE-Second mailing of Program and Registration Information brochure
DONE-Send symposium abstract book to be printed
Jan-March
-Finalize text, photos, and layout for status report
-Status report to printer
-Print symposium program
-Install exhibit at Egan Center (from ASLC)
-Hold symposium
-Distribute symposium program, abstract book, and other materials
April-June
-Follow-up as required
July-Sept
-

DRAFT

Exxon Valdez Oil Spill Project Status Summary
FY 99 Work Plan
Quarter Ending December 31, 1998

Proj.No.	Project Title	Proposer	Lead Agency
99471	**Updating the Status of Services Reduced or Lost Due to the Oil Spill**	Restoration Office	ADFG

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Conduct subsistence fieldwork (ADFG)
DONE-Complete coding and entry of subsistence data (ADFG)
DONE-Contract with fisheries economist RE commercial fishing (RO)
DONE-Commercial fishing contractor submit report (RO)
DONE-Conduct telephone interviews with recreation/tourism key informants (RO)
Jan-March
DONE-Subsistence data review workshop (ADFG)
-Complete final subsistence report (ADFG)
-Complete evaluation of status of subsistence, commercial fishing, recreation (RO)
April-June
-Any necessary follow-up (ADFG, RO)
July-Sept
-

99476	**Effects of Oiled Incubation Substrate on Pink Salmon Reproduction**	R. Heintz/NOAA	NOAA

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Set up exposure apparatus and take eggs
UNDERWAY-Evaluate effects of oil incubation on survival to eyed embryo stage
DONE-Collect samples for quantifying exposure levels
Jan-March
-
April-June
-Mark and release surviving fry from the control and expsoed groups
July-Sept
-

DRAFT

Exxon Valdez Oil Spill Project Status Summary
FY 99 Work Plan
Quarter Ending December 31, 1998

Proj.No.	Project Title	Proposer	Lead Agency
99479	Effects of Food Stress on Survival and Reproductive Performance of Seabirds	J. Piatt/USGS-BRD, A. Kitaysky/Univ. of Washington	DOI

Project Tasks to be Completed this Quarter

Oct-Dec
DONE-Analysis of FY 98 samples collected in pilot work
UNDERWAY-Plan for FY 99 fieldwork
Jan-March
-Prepare for field work, hire personnel
April-June
-Blood sampling during pre-incubation stage
-Set study plots for experimental work
July-Sept
-Blood sampling during chick-rearing stage, colony work
-Implant birds with hormonal implants
-Monitor parental feeding rates and chick survival
-Begin chick rearing in captivity at Kasitsna Bay lab

99514	Lower Cook Inlet Waste Management Plan	M. See/ADEC	ADEC

Project Tasks to be Completed this Quarter

AS OF 2/1/99, CONTRACT IS WITH CONTRACTOR FOR SIGNATURE. REMAINING SCHEDULE IS TO BE ADJUSTED TO REFLECT 2-MONTH DELAY IN PROJECT START-UP.

Oct-Dec
DONE-Select contractor (environmental engineer) to conduct assessment
-Conduct site visits
-Conduct community meetings
-Conduct environmental assessments
Jan-March
-Complete waste management plan
-Submit final report to EVOS Chief Scientist
April-June
-
July-Sept
-

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax: 907/276-7178

MEMORANDUM

TO: Trustee Council

THROUGH: Molly McCammon
Executive Director

FROM: Traci Cramer
Administrative Officer

DATE: January 27, 1999

RE: Financial Report as of December 31, 1998

Attached is the Statement of Revenue, Disbursements and Fees, and accompanying notes for the *Exxon Valdez* Joint Trust Fund for the period ending December 31, 1998.

The following is a summary of the information incorporated in the notes and contained on the statement.

Liquidity Account Balance	$48,117,048	
Less: Current Year Adjustments (Note 5)	-23,424,792	
Plus: Other Adjustments (Note 6)	4,540,804	
Uncommitted Fund Balance		$29,233,060
Plus: Future Exxon Payments (Note 1)	$140,000,000	
Less: Remaining Reimbursements (Note 3)	-7,500,000	
Less: Remaining Commitments (Note 7)	-77,331,567	
Total Estimated Funds Available		$84,401,493
Restoration Reserve (Note 8)		$80,153,796

If you have any questions regarding the information provided please do not hesitate to give me a call at 586-7238.

Attachments

cc: Agency Liaisons
Bob Baldauf

STATEMENT OF REVENUE, DISBURSEMENT, AND FEES
EXXON VALDEZ OIL SPILL JOINT TRUST FUND
As of December 31, 1998

	1996	1997	1998	To Date 1999	Cumulative Total
REVENUE:					
Contributions: (Note 1)					
Contributions from Exxon Corporation	70,000,000	70,000,000	70,000,000	0	690,000,000
Less: Credit to Exxon Corporation for Deposit of Maturing Securities				9,261,490	(39,913,688)
Total Contributions	70,000,000	70,000,000	70,000,000	9,261,490	659,347,802
Interest Income: (Note 2)					
Exxon Corporation escrow account					831,233
Joint Trust Fund Account	3,963,073	2,971,070	2,673,585	578,047	21,602,441
Total Interest	3,963,073	2,971,070	2,673,585	578,047	22,433,674
Total Revenue	**73,963,073**	**72,971,070**	**72,673,585**	**9,839,537**	**681,781,476**
DISBURSEMENTS:					
Reimbursement of Past Costs: (Note 3)					
State of Alaska	3,291,446	5,000,000	3,750,000	0	95,309,288
United States	0	0	0	0	69,812,045
Total Reimbursements	3,291,446	5,000,000	3,750,000	0	165,121,333
Disbursements from Liquidity Account:					
State of Alaska	43,340,950	17,846,130	15,686,600	29,520,000	217,997,928
United States	31,047,824	60,101,802	39,468,461	(300)	200,072,483
Transfer to the Restoration Reserve	35,996,231	12,449,552			48,445,783
Total Disbursements	110,385,004	90,397,484	55,155,061	29,519,700	466,516,194
FEES:					
U.S. Court Fees (Note 4)	396,307	254,221	199,946	48,571	2,026,902
Total Disbursements and Fees	**114,072,758**	**95,651,705**	**59,105,007**	**29,568,271**	**633,664,429**
Increase (decrease) in Liquidity Account	**(40,109,685)**	**(22,680,635)**	**13,568,578**	**(19,728,734)**	**48,117,047**
Liquidity Account Balance, beginning balance	117,067,523	76,957,839	54,277,204	67,845,782	
Liquidity Account Balance, end of period	76,957,839	54,277,204	67,845,782	48,117,047	
Current Year Adjustments: (Note 5)					(23,424,792)
Other Adjustments: (Note 6)					4,540,805
Uncommitted Liquidity Account Balance					**29,233,060**
Future Exxon Payments (Note 1)					140,000,000
Remaining Reimbursements (Note 3)					(7,500,000)
Remaining Commitments: (Note 7)					(77,331,567)
Total Estimated Funds Available					**84,401,493**
Restoration Reserve					**80,153,796**

NOTES TO THE STATEMENT OF REVENUE, DISBURSEMENTS AND FEES
FOR THE *EXXON VALDEZ* JOINT TRUST FUND
As of December 31, 1998

1. Contributions - Pursuant to the agreement Exxon is to pay a total of $900,000,000.

Received to Date	$690,000,000
Current Year	$70,000,000
Future Payments	$140,000,000

2. Interest Income - In accordance with the MOA, the funds are deposited in the United States District Court, Court Registry Investment System (CRIS). All deposits with CRIS are maintained in United States government treasury securities with maturities of 100 days or less. Total earned since the last report is $130,269.

3. Reimbursement of Past Costs - Under the terms of the agreement, the United States and the State are reimbursed for expenses associated with the spill. The remaining reimbursements represent that amount due the State of Alaska.

4. Fees - CRIS charges a fee of 10% for cash management services. Total paid since the last report is $13,027.

5. Current Year Adjustments – Includes the current year payment (less reimbursements), outstanding deposits to the Restoration Reserve (see note 8) and proceeds of the 1998 securities (see note 8), $2,064,300 associated with the 1999 Work Plan, plus the following land payments.

Seller	Amount	Due
Afognak Joint Venture	$22,357,990	October 1999
Shuyak	$4,000,000	October 1999
Eyak	$13,000,000	February 1999
Eyak	$14,000,000	September 1999

6. Other Adjustments - Under terms of the Agreement, both interest earned on previous disbursements and prior years unobligated funding or lapse are deducted from future court requests. Unreported interest and lapse is summarized below.

	Interest	Lapse
United States	$343,211	$1,965,541
State of Alaska	$1,432,223	$799,829

7. Remaining Commitments - Includes the following land payments.

Seller	Amount	Due
Afognak Joint Venture	$23,025,833	October 2000
Eyak	$18,000,000	September 2000 through 2002
Shuyak	$8,000,000	October 2000 through 2001
Shuyak	$11,805,734	October 2002
Koniag, Incorporated	$16,500,000	September 2002

8. Restoration Reserve - The amount reported includes funds previously transferred, plus

accrued interest less fees - $54,996,296. Although the 1998 and 1999 payments have not been formally transferred from the Liquidity Account to the Restoration Reserve, pursuant to Trustee Council action the payments have been included in the balance along with accrued interest at a rate of 5%. This includes the $12,000,000 transfer approved for Fiscal Year 1998, plus $775,000 in interest accrued since September 15, 1997, and the $12,000,000 transfer approved for Fiscal Year 1999, plus $175,000 in interest accrued since September 15, 1998. The proceeds from the securities that matured on November 15, 1998 have also been included. This includes $9,095,002, plus $46,081 in interest, less $5,069 in fees. Also included in an adjust of $166,488 for fees.

Revision 7-10-98
Approved TC 8-13-98

Cook Inlet Information Management/Monitoring System

Project Number:	99391
Restoration Category:	Monitoring
Proposer:	J. Hock/ADEC, C. Fries/ADNR
Lead Trustee Agency:	ADNR
Cooperating Agencies:	~~ADNR~~ ADEC
Alaska SeaLife Center:	No
New or Continued:	New
Duration:	1st yr. 2 yr. project
Cost FY 99:	$335.0
Cost FY 2000:	
Cost FY 01:	$0.0
Cost FY 02:	$0.0
Geographic Area:	Cook Inlet/Prince William Sound
Injured Resource/Service:	All

ABSTRACT

This project will develop an integrated data base containing digital environmental and spatial data for the Cook Inlet watershed. The system will facilitate access to data from a wide variety of sources about the resources and services injured by the spill as well as base data sets important to understanding the environment of the watershed. This database will support monitoring, management, and restoration. The system will provide access through the Internet to the public and private sectors. Water quality data sets derived from the watershed will provide the cornerstone of this system thereby facilitating monitoring of both baseline parameters and chronic sources of marine pollution. From both public policy and natural resources management perspectives, this project will protect the governments' investment in restoration by making information derived from restoration activities and water quality monitoring programs available for management of the watershed in a manner that will promote the recovery of the injured resources and services.

INTRODUCTION

Monitoring populations of injured resources/services and effective management of their habitats that will facilitate their recovery requires a watershed-based management approach that encompasses entire ecosystems. This approach requires managers and scientists to "distinguish between natural and human-induced changes in the marine ecosystem" (Spies 1997). Pollution-caused water quality degradation, for example, could impact sensitive species or their habitats thereby exacerbating the injury and adversely affecting recovery. Toxic levels of contaminants can make fish and shellfish unfit for human consumption. Even the presence of pollutants below toxic levels can affect the public's perception of quality and safety, thereby affecting their purchasing habits for fish and shellfish. "Toxic materials can damage or stop the biological processes occurring in the aquatic ecosystems, including long-term inhibition of growth, reproduction, and migration of organisms, and have adverse effects on the rate of degradation of biodegradable contaminants" (Novotny and Olem 1994).

Although watershed-based management can be an effective strategy, implementation includes the review, integration and multivariate analysis of large volumes of data. Moreover, management and planning for development within these large areas calls for participation by federal, state and local governments as well as the public. Multiple stakeholders and scientists from many disciplines may be involved and need access to relevant data used in management and policy decisions.

This project proposes creation of an information management and monitoring system that will provide easy access to significant amounts of disparate data from a wide variety of sources about the resources and services injured by the *Exxon Valdez* oil spill as well as base datasets important to understanding the environment of the Cook Inlet watershed. The system will be a useful tool for monitoring species populations, ecological processes and predicting changes that may affect recovery of injured resources. This tool will contribute to the EPA Cook Inlet Watershed Clearinghouse and could serve as a template for other watersheds within Alaska.

The proposed project will facilitate recovery monitoring of *Exxon Valdez* oil spill injured resources/services, monitoring of water quality, tracking of pollution, and management and planning in the Cook Inlet watershed. The system will be designed around a hardware/software mix that contains a relational database and a geographic information system (GIS)[1]. It will allow users to access and review large amounts of data, assess current conditions, and analyze trends. The system will contain or be linked to datasets that provide information needed to monitor:

- recovery of injured resources/services,
- baseline physical and biological parameters,
- chronic pollution sources.

The system, which will be designed to be "user-friendly" and Internet accessible, will allow information about injured resources to be considered during resource agency permitting and regulatory functions and planning for petroleum and petrochemical development, mining, timber harvest and urban development. In addition, monitoring and data collection partnerships with *Exxon Valdez* oil spill project principle investigators, agency, industry and public stakeholders will be established through project team participation in the Cook Inlet Watershed Clearinghouse, Kachemak Bay National Estuarine Research Reserve, USGS Cook Inlet Watershed Study, meetings with EVOS project principle investigators, and other initiatives.

Potential users of the system include Federal, State, borough, and municipal government agencies, industry, scientists, the environmental community, and public oversight groups with an interest or mandate to manage the watershed. Many of these entities have already generated datasets relevant to management of the watershed that would be considered for inclusion in the system. The

[1] GIS as a Decision Making Tool; Appendix A.

Alaska Natural Heritage Program has cataloged 461 datasets relevant to Alaska watersheds. A subset of these datasets relevant to Cook Inlet has been identified. In addition, the Alaska Geospatial Data Clearinghouse has compiled a suite of GIS coverages and is currently embarked on a project to catalog existing spatial data within Alaska in cooperation with ADNR. This project will establish a National Geospatial Data Clearinghouse node at the Alaska Department of Natural Resources for state data. Other examples include: studies funded by the Trustee Council, e.g., Research & Restoration Information database, Petroleum Hydrocarbon database, Sound Ecosystem Assessment Project (SEA); ADEC's Contaminated Site Remediation Program database that contains information from more than 2,300 contaminated sites; Federal agency databases including EPA's Storage and Retrieval System for Water and Biological Monitoring Data (STORET); USGS stream flow gauging database; and Cook Inlet RCAC Environmental Monitoring Results. In addition, considerable amounts of relevant monitoring data have been and are currently being collected by various government and private sector entities for compliance with National Pollution Discharge Elimination System (NPDES) regulations and ADEC's water quality program.

Currently, there is no mechanism in place that relates these diverse datasets in a manner that gives managers a comprehensive picture of marine and upland, health, activities, and pollution issues in Cook Inlet.

NEED FOR THE PROJECT

Statement of Problem

The Cook Inlet watershed is a large and complex ecosystem containing a diverse and abundant biota subject to intense physical forces as well as increasing human influences. A majority of Alaska's population lives, works, and recreates in and adjacent to this watershed. Cook Inlet is an area where leasing, exploration, development, and production of oil and gas resources are on going and important activities. In 1996 the Minerals Management Service offered about 1.98 million acres for leasing (MMS 1996). In the same year, the State of Alaska, Dept. of Natural Resources, offered for lease approximately 1,063,423 acres of State-owned onshore and offshore land for petroleum exploration and development (ADNR 1996). Timber harvest, mining, commercial, sport, personal-use and subsistence fishing and urban development are also taking place within this watershed. This area is exceptionally important to both Alaska residents and tourists for recreation.

Communities and industry operating in the watershed generate waste streams that may be entering, degrading, and affecting the recovery of resources/services. Examples of these waste streams include used oil from vessels and other sources, bilge discharges, petroleum spills, surface runoff, sewage discharges, household hazardous wastes, and windblown garbage and/or leachate from community landfills. While some of these activities may be individually permitted, there is no system for the regional assessment of their cumulative impacts, These sources of pollution not only potentially hinder full recovery of the marine environment but could also impact the quality of the recreational experience in these areas.

Each year, industry, government, the scientific community and citizen watchdog groups generate and use large quantities of information about these areas and its resources. Typically this information is used to focus on a single resource, issue, or problem and data management techniques are used that are specific to that need. Watershed management, on the other hand, has a scope that requires evaluation of a much broader spectrum of factors within a defined geographic area. In most large, intensively used and managed watersheds, such as Cook Inlet, some stakeholders collect and analyze samples and generate data, while others rely on data to monitor resources, conduct research, or make management and policy decisions. The flow of information between these groups is often non-existent or hindered by incompatible information transfer software and hardware.

For example, information used to evaluate impacts to water quality may be derived and analyzed in a fragmentary fashion that makes a comprehensive assessment of actions affecting water resources in Cook Inlet time consuming and difficult. Projects and required individual project permits may be evaluated independently of other projects or permitted actions. This project will facilitate assessment of cumulative risk to Cook Inlet water quality by enabling an integrated analysis of disparate datasets residing in different formats.

Information and data management problems are not unique to Cook Inlet; similar issues have been recognized for other watersheds across the nation. For example, information management concerns identified as part of the Chesapeake Bay Program (SAIC 1996) include:

- Users or potential users find it difficult or impossible to access needed data. Many participants obtain and manage data for different purposes, in different formats, and on different platforms making transfer of text and data files difficult. There are no defined procedures for obtaining information.
- Documentation of data (metadata) is often insufficient or lacking entirely. There is no documentation of collection or analytical methods thereby diminishing confidence in the quality of data.
- Desired data types are not available and/or up-to-date. Data requests are not coordinated leading to duplicative data acquisition efforts.
- Available data are often too geographically broad. Information is not available at local and sub-watershed levels.
- Environmental indicators are difficult and inefficient to produce.
- There is an important unmet need for integration of different types of data in order to undertake complex analyses.

Projects that are characterized by complex data relationships, such as recovery monitoring of species populations and ecological processes, need efficient data access, integration and analysis. This is also true of ecosystem-level research projects, watershed management and monitoring, and planning and regulation of development activities conducted over large geographic areas. These activities become more efficient when relevant data is related and integrated. Managers are more likely to make decisions which benefit injured resources and services and their associated habitats if they can access and visualize the relationships between variables and proposed development. Data management increases in importance for long-term and broad-scale comparative studies in which scientists from numerous disciplines may be involved for long periods of time in addressing a complex series of questions or hypotheses, requiring increased attention to metadata, QA/QC, archiving, and methods standardization (Michener 1997).

B. Rationale/Link to Restoration

"Realistic ecological assessment" of the recovery of resources/services injured by the *Exxon Valdez* oil spill "requires long-term monitoring of salient patterns and processes at appropriate spatial and temporal scales using sound sampling design and statistical analyses" (Michener 1997). This strategy was echoed by the Chief Scientist (Spies 1997) in his description of a "...permanent, adaptive, interdisciplinary monitoring and research program that would track, and eventually help predict ecosystem changes and provide a basis and mechanism for long-term restoration, enhancement, and wise management of marine resources in the northern Gulf of Alaska."

This plan is supported by the Trustee Council's increased emphasis on "integration and synthesis of what has been and is being learned from various restoration projects and the earlier work conducted during the damage assessment phase." As Stated in the Ecosystem Synthesis section of the 1999 RFP (Trustee Council 1999): "The integration and synthesis of project results will enable

the Council, the scientific community, and the public to view the effects of the oil spill and the long-term restoration and management of injured resources/services from broad, multi-project and ecosystem-level perspectives. This will provide an improved framework for development of long-term restoration, research, monitoring, and management plans."

The contribution of the proposed project toward recovery of the Exxon Valdez oil spill injured resources and services is facilitation of management and planning within the Cook Inlet watershed. The proposed information management/monitoring system will improve access to and analysis of information on injured resources/services and their habitats in the Inlet by making Trustee Council funded research readily available to resource managers. It will facilitate access to these datasets and allow managers, scientists and planners to visualize relationships between variables, integrate datasets and project trends.

In the context of water quality management, unacceptable contaminant levels have the potential for affecting entire aquatic ecosystems including injured resources, commercial fisheries, sport fisheries and recreation. Although the project will not directly reduce marine pollution, it will provide information to help regulators control and prevent waste discharges containing toxic pollutants that can adversely affect the integrity of a waterbody and its constituent food webs.

In general, the proposed system would help achieve this strategy by:

- Tracking recovery and providing information to help minimize additional injury,
- Improving data integration and enabling complex analyses which facilitate the evaluation of cumulative impacts,
- Depicting information in GIS formats to provide clear presentation of complex issues and alternatives,
- Providing more complete information to decision-makers and the public.

The proposed information management/monitoring system will help recovery of the injured resources/services by facilitating monitoring efforts as follows:

1. Define and track baseline parameters and eventually help predict changes that would be used to manage injured resources/services and their habitats.
2. Identify and track pollution that might have adverse impacts upon injured resources/services. Most of the communities and development projects in the Cook Inlet watershed are located in coastal areas. Consequently, many of the wastes generated have the potential to enter the nearshore marine environment and affect recovery of injured resources/services.
3. Provide injured resources and services data for oil and gas leasing.
4. Help to distinguish between natural and human-induced changes in the Cook Inlet watershed.
5. Provide data to researchers who are studying ecological processes and who are modeling physical and biological factors to improve management of fishery resources in the Cook Inlet watershed.
6. Provide maps of injured species' habitats, movement corridors and environmentally sensitive areas.
7. Provide EVOS researchers and agency resource managers the ability to view and analyze multiple datasets, i.e., data layers, simultaneously through GIS capability.
8. Provide information to regulators to help them review permit applications with recovery of injured resources/services in mind.

C. Location

Design and development components of the project will take place in Juneau and Anchorage. Project benefits will be realized throughout the Cook Inlet watershed. Communities that may be affected by the project include Anchorage, Homer, Kenai, Nanwalek, Nikiski, Ninilchik, Port Graham, Seldovia, Soldotna, and Tyonek.

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

Despite the wealth of information from studies following the *Exxon Valdez* oil spill and other research efforts, most of the information used to plan developments and to evaluate impacts to water quality and other resources in Cook Inlet is derived and analyzed in a fragmentary fashion. Permit decisions for development projects are based upon disparate datasets that reside in formats not conducive to integrated analyses or public understanding of the issues.

To ensure that the proposed system will deliver the appropriate information in a format useful to stakeholders in the watershed, participation of municipal, environmental and private industry stakeholders will be solicited and welcomed through the existing Cook Inlet Coalition chaired by EPA. The Cook Inlet Coalition is an organization facilitated by EPA to facilitate the exchange of information and coordinate management and research efforts in Cook Inlet. Various agency processes have previously identified stakeholders in this watershed.

Although this project does not specifically address traditional ecological knowledge (TEK), TEK products that have a geo-referenced, digital database could be incorporated into the system. Data standards and QA/QC protocols will be made available to the TEK coordinator. The TEK coordinator could work with TEK projects collecting data to make researchers aware of the requirements for system compliance.

PROJECT DESIGN

A. Objectives

a) Create an information management/monitoring system.

b) Populate or link the system with data relevant to recovery monitoring of injured resources/services, water quality monitoring, management and planning of the Cook Inlet watershed.

c) Provide access, integration and analysis of information that will enhance regulatory agencies abilities to identify, track and regulate, and reduce sources of pollution that might adversely affect recovery of injured resources/services and their habitats.

d) Create access to the system for watershed stakeholders.

B. Methods

The proposed approach for creating and implementing an information management/ monitoring system includes the following steps:

Step 1:	Establish Project Team, Preliminary identification of users and data.
Step 2.	Identify user needs and functional requirements.
Step 3:	Identify and prioritize data needed to support watershed management including that related to injured resources and services and reduction of marine pollution.
Step 4:	Evaluate existing computing infrastructure.
Step 5:	Design database, GIS, and network access.
Step 6:	Develop data standards, data transfer, & QA/QC protocols.
Step 7:	Integrate existing databases and metadata.
Step 8:	Develop a long range implementation, training, and maintenance plan.

Project implementation will focus on Cook Inlet. Inclusion of the Prince William Sound watershed in the system will follow if funding becomes available.

Step 1. Establish Project Team, Preliminary User and Data Identification

The project team will consist of ADEC and ADNR staff, the technical consultant and representatives from EPA, USGS, and USFS on an as needed basis. The project team will have demonstrated expertise in database management technology, GIS, the *Exxon Valdez* restoration program, the Cook Inlet watershed, and agency responsibilities therein. The project team will initially be responsible for coordinating the User Needs Analysis Workshop, initiating contact with the contractor, identifying and contacting potential system users and other participants and compiling a preliminary list of available data. The project team will represent the project at meetings of the Cook Inlet Coalition, an existing organization that will be used to address stakeholders, project participants and other interested parties.

Step 2. Identify User Needs and Functional Requirements

The Cook Inlet Coalition met at EPA in Anchorage Alaska on January 29, 1998. At this meeting the need for a system similar to that proposed in this project was discussed as well as data needs, system functionality, and practical applications. A summary of the results of this meeting is included as Appendix B.

It is our intent to build on information gathered at the Cook Inlet Coalition January 29th meeting. During Phase I of the Cook Inlet Information Management/Monitoring Project, a comprehensive User Needs Analysis will be conducted (Schedules and Milestones, Pages 15-17).

Input will be solicited from among the following entities, which have been selected on the basis of location, land ownership, management or other responsibilities, or ongoing activities, e.g. research, in the Cook Inlet watershed:

- University (UAA & UAF)
- Government Agencies (Federal, State, Local)
- Private Sector Companies
- Native Corporations

- Environmental Organizations
- EVOS Principal Investigators.

The user base is expected to be both large and diverse. The Cook Inlet Coalition[2], a subgroup of the Watershed Working Group, has already identified numerous potential users of the proposed system. These include federal and state resource agencies, environmental interest groups, UAA, Native corporations, engineering firms, the oil and gas industry, local governments, and others. The DNR sponsored Cook Inlet Area Wide Lease Sale process identified Stakeholders, many of whom are potential users of this proposed system. Stakeholder representatives who participated in this lease sale process included: Alaska Oil and Gas Association, CIRI, commercial fishing, sportfishing, tourism, Trustees for Alaska, Alaska Support Industry Alliance, Native Tribal Councils and private land owners. Agencies and organizations that have expressed a direct interest in participating include EPA, USGS, USFS, ADF&G, MMS and the Cook Inlet RCAC.

For more detail regarding identified organizations within these categories and members of the Cook Inlet Coalition and Lease Sale Stakeholders please refer to Appendix C (Potential Users, Contributors and Other Participants). Organizations will be contacted and invited to participate in this project. The project will be described and an expression of interest requested. It is expected that a meeting of the Cook Inlet Coalition will be held prior to the User Needs Analysis Workshop to introduce the project and encourage participation. Follow up to the initial contact will be based upon the response to the invitation to participate in the project and attendance at Cook Inlet Coalition meetings.

Subsequently, a two-day User Needs Analysis Workshop will be held in Anchorage, facilitated by the consultant, to solicit input from potential users on available datasets, data priorities, needs, functionality, maintenance, hardware/software and data standards. A sample outline providing a more detailed description of the structure/goals/output of the user requirements workshop is included in Appendix D (Sample Outline for User Requirements Workshop). The User Needs Analysis Workshop will be a highly structured, facilitated session that follows a systematic approach to identifying user needs. Results of this workshop will be summarized and submitted to participants for their review and comment. Based upon the results of this workshop and other information from the user community, an initial set of system specifications for the Cook Inlet information management/monitoring system will be prepared. These specifications will address data management considerations, hardware and software requirements, data standards, user interface, maintenance, and initial functionality of the system.

Step 3. Identify And Prioritize Data Needed To Support Watershed Management Including That Related To Injured Resources And Services And Reduction Of Marine Pollution.

Datasets will be identified by relative priority in the User Needs Analysis. The project will focus on making the highest priority information available first to the user community. This process will also be used to identify incomplete or missing datasets and those that need to be converted or reprocessed. The Project Team will evaluate data sources for ease of use and relevance to the project. Data gaps will be identified with suggestions for filling these gaps. A revised, prioritized list will be developed which takes into account:

- status of data,
- importance of data to success of the project,
- accuracy,
- scale,

[2] Cook Inlet Coalition Attendees: EPA, ADF&G, UAA, USGS, BLM, UAF Coop Extension Service, Nature Conservancy, AK Natural Heritage Program, ADEC, CIRCAC.

- currency,
- QA/QC,
- format,
- organization of the data,
- integrity of the data,
- adherence to data standards,
- duplication and redundancy,
- resources needed to acquire the data,
- effort required to incorporate data into system, and
- update requirements.

Some of the data analysis has been completed. Preliminary identification of datasets has been done by DEC through contract with ESRI[3] and EPA through a contract with the University of Alaska, Anchorage[4] (Reference Appendix E). This information will provide the basis for discussions regarding available data during the User Needs Analysis Workshop. A final prioritized list of datasets will be shared with project participants and included in the system design document.

Regional base data layers[5] that are readily available include:

Roads
Populated Places
General Land Status
Legislatively Designated Areas
Conservation System Unit Boundaries
Alaska Coastline
Major Rivers
Rivers
Lakes
Glaciers
Kenai Peninsula Land Status and Easements
State Boundary
Borough Boundaries
City Locations
Road Networks
Railroad Network
Hydrography

A compilation of available data will be produced by this project at the end of Phase I. This compilation may not conform to FGDC metadata standards referenced in Step 6. However, information included in this compilation will include a description, format, availability, contact information and any restrictions or limitations associated with the data.

All user needs cannot be met by this project due to limiting factors such as funding; quality, availability, and compatibility of data.

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[3] Environmental Systems Research Institute, "Geographic Information Systems User Needs Assessment Composite Report – Final," Alaska Department of Environmental Conservation, Juneau, AK. 1994

[4] Boggs, K. Et al., "Information Management for Use in Watershed Planning for Alaska," Alaska Natural Heritage Program, University of Alaska Anchorage, Anchorage, AK, 1997.

[5] LRIS, Division of Support Services, Alaska Department of Natural Resources. "Geographic Information Systems Database Summary." 1995 and http://www.dnr.state.ak.us/ssd/gisdata/index.htm.

Step 4. Evaluate Existing Computing Infrastructure

Hardware, software and network configurations used in the system will be chosen on the basis of user needs, capability, and compatibility with existing systems. Much of the data accessible through the system will be referenced geographically. A geographic information system (GIS) will be used to visualize these data and discover new relationships, especially as they relate to detection of cumulative impacts, conduct spatial analyses using analytical algorithms, and generate maps that are easily understood by decision makers and the general public. Various database and GIS options will be considered that embody needed capacity, compatibility, technical support and user-friendliness.

Most State and Federal agencies are using either Arc/Info or ArcView or both to view and manage geographic information. It is expected that ArcView will be used as a prototyping tool. However, various tools including Map Objects and Internet Map Server (both developed by ESRI) as well as a variety of programming languages are available for internet deployment and the tool or tools of choice will depend upon results of User Needs Analysis, beta testing of the prototype, and further analysis of user functionality requirements.

Step 5. Design Database, GIS and Network Access

Once hardware and software requirements are identified, an object based design effort will document the essential system components. A prototype will then be developed based upon specifications delineated in the User Needs Analysis, prioritized list of datasets, the system design, and the recommended hardware software, and network configurations.

The design and development of the prototype will include a review and evaluation of systems that have been created to meet similar needs. This review will include systems developed for the Chesapeake Bay (Chesapeake Information Management System), states of Montana (Montana View) and Colorado (Colorado Watershed Data Integration System), and the country of Jordan (Water Quality Improvement and Conservation Project, Water Monitoring System). This review and evaluation will also include a suite of EPA databases including the STORET Modernization Effort, the Environmental Monitoring and Assessment Program (EMAP) Phase II, the Spatial Data Library System (ESDLS), BASINS (The Better Assessment Science Integrating Point and Non-point Sources), and ENVIROFACTS.

It is expected that the prototype will contain a relational database designed to accommodate tabular data associated with permitting and regulatory activities. This component of the project will be developed in close coordination with ADEC regulatory staff in order to capture all pertinent water quality information. The relational database will be linked to a GIS decision making tool utilizing base map information to depict relationships between physical, biological, and cultural features of the watershed. The initial prototype will be populated with a subset of readily available datasets from the prioritized list of datasets.

The prototype will integrate the GIS and relational databases although it will not contain all datasets. Additional datasets will be identified and evaluated on an "as needed" basis. The prototype and needs analysis will provide the basis for a detailed full system design document.

The prototyping cycle is an iterative process that introduces the prototype to project participants and allows the Project Team to observe use patterns and solicit additional input from potential users. Initial review of the prototype will result in a preliminary analysis of training and access needs for various user groups. The development and evaluation of the prototype will require numerous reviews by project participants. Throughout this iterative process, deficiencies will be identified and enhancements incorporated.

The prototyping process will include criteria for measuring success. Some of the criteria or evaluation questions include:

- Can the information system effectively and efficiently address Cook Inlet monitoring/management goals?
- Is a geographically distributed database feasible in the Cook Inlet area where there is a multitude of users and contributors operating under different circumstances?
- Is the system feasible given the hardware, software and telecommunications capabilities of Cook Inlet stakeholders?
- Is the system easily accessible to users?

Results of this prototype evaluation will be used to refine the system and produce specifications for implementation of a full data integration system. The final product, which will be based on the prototype and its evaluation, will enable users to access data through the Internet; browse, select, integrate, and analyze different types of data from disparate sources including geo-referenced spatial data. Part of the design and development process will be the creation of a user-friendly, menu driven graphical user interface.

The Internet is currently the preferred means for distributing information and data within State and Federal agencies working on this project. For example, the DNR Database Summary posted on DNR's web pages[6] provides public access to metadata and a process for ordering data. The Alaska Geospatial Data Committee Home Page[7] provides access to metadata and data on line. DNR is currently implementing a State Geospatial Clearinghouse project that will provide additional capacity for the discovery and distribution of data and metadata on line.

The system must also be able to access external sources of information. Internet connectivity will allow access to external databases including the EPA STORET database, USGS Stream Flow data and the EPA Envirofacts database. Once this connectivity is in place linkage to other systems such as SEA is desirable and possible. Connectivity to external information reduces the amount of storage capacity required at the user's desktop and reduces costs associated with maintenance and updating of data. Various tools including Map Objects and Internet Map Server (both developed by ESRI) as well as a variety of programming languages are available for internet deployment and the tool or tools of choice will depend upon results of beta testing of the prototype and analysis of user functionality requirements. Compatibility with the ARC/INFO and ArcView data format will be required.

It is desirable for the project to provide access to the following external water quality datasets:

a) EPA STORET (surface and ground water data) (5936 surface water stations and 2410 ground water stations in Alaska)

b) STOREX: This is program on the EPA mainframe that extracts data from STORET and builds three comma delimited ASCII text files, which are compatible with ArcView. The program extracts data by HUC. The three files listed below are then downloaded from the mainframe and loaded into ArcView and converted into shapefiles and dBase files.

c) USGS CD-ROM DDS-37: Data from Selected U.S. Geological Survey National Stream Water-Quality Monitoring networks (13 stations in Alaska)

d) EPA Permits Compliance System: Municipal and Industrial discharge limits and discharge monitoring reports) (574 Alaska facilities in PCS)

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[6] http://www.dnr.state.ak.us/ssd/gisdata/index.htm

[7] http://agdc.usgs.gov/

e) PCSEX: This is a program on the EPA mainframe program that extracts all data from the Permits Compliance System. Three comma delimited ASCII text files are generated. These files are downloaded from the mainframe, loaded into ArcView, and converted into shapefiles and dBase files.

f) USGS Water Resources Division web site: Stream Flow data will be extracted and stored as dBase files with Flow station header stored as a point coverage of gage locations) (450 stream gages in Alaska).

g) Envirofacts database: 1848 regulated facilities in Alaska.

h) BASINS: The Better Assessment Science Integrating Point and Non-point Sources system that integrates a GIS, national watershed datasets and state-of-the-art watershed assessment and modeling tools.

Step 6. Develop Data Standards, Data Transfer & QA/QC Protocols

Based upon user needs and input, project staff will adopt standards for process and content as required to meet user needs. These standards will set a target for data generators to meet. Current standards will be used where they already exist. Standards will be communicated via technical reference or the project data dictionary.

Although a variety of standards exist, all potential users and contributors have not adopted a comprehensive standard. Identification and adoption of standards by all users is a contentious issue because it affects all levels of data collection, analysis and reporting. Since data brought into this system will come from a myriad of sources it is important to develop project specific standards that will facilitate access and use of the system. Data standards will include basic geospatial, temporal, and name standards and, in the case of chemical data, the point of collection in time and space and the analytical methods used.

Geospatial standards will be discussed at the User Needs Analysis Workshop and will likely conform to commonly used statewide practices. DNR, for example, maintains all geospatial data in a format compatible with ARC/INFO, UNIX software system published by Environmental Systems Research Institute of Redlands, California. Data for statewide themes and section grids are stored in Alber's Equal Area Conic Projection with a central meridian of 154 degrees. Other parameters are specified with each coverage. Data provided at the 1:63,360 quad level for hydrography are stored in the respective state plane coordinates for that quad. All data will be referenced (Map Projection) in the North American Datum, 1927 (NAD27) unless otherwise noted in the metadata. These standards have evolved over time and are the basis for the routine exchange and distribution of data to other agencies, municipalities, and the public upon request. It is expected that for this project geospatial data will be stored in a format accessible by ArcInfo or ArcView including shapefiles, dbase files, ARC/INFO coverages, supported image formats (GIF, tif., etc) and ASCII text files. Related databases will, by virtue of ArcView and ARC/INFO specifications, conform to the Open Database Connectivity (ODBC) standard. This includes relational databases developed and maintained in applications such as Informix, Oracle, Microsoft Access, Microsoft SQL Server etc. It is expected that ArcView may be used as a prototyping tool because of its widespread use within the state.

FGDC (Federal Geographic Data Committee) standards will be used for metadata. See *Content Standards for Digital Geospatial Metadata Workbook*[8] for details. A project goal is that FGDC compliant metadata accompany all data included in this application. This will assure compliance

[8] Federal Geographic Data Committee. "Content Standards for Digital Geospatial Metadata Workbook (Describes the June 8, 1994 version of the metadata standard) Workbook Version 1.0, March 1995.

with Internet search and discovery standards for geospatial data. Water quality data will be documented in this format for consistency.

A data dictionary will be developed that will summarize all of the data standards utilized by the project. A data dictionary is a file that details the attributes for a database and individual data elements and defines their relevant characteristics. The data dictionary will facilitate consistent reporting, nomenclature for transfer of data and definitions among disparate data providers.

The degree to which datasets conform to a set of standards depends in part upon how tightly integrated the data needs to be with the delivery system. The higher the level of system integration, the greater the need for a single, fixed set of format standards. If one of the goals is to make key datasets more available for analysis, this information may remain largely unmodified. The focus of the effort is placed upon knowledge of the data, ease of access, and a means for maintaining currency. System requirements will be addressed in the needs analysis and project design.

Step 7. Integrate Existing Databases and Metadata Files

Primary and high priority datasets that are in compliance with documentation and process standards will be loaded into the system. Other compatible datasets, accompanied by metadata files, will be linked to the system as time and budget constraints allow. Updates to existing datasets and new datasets will be evaluated for compliance with standards and brought into the system over time.

Project participants recognize the complexity of data management tasks including data cleanup, QA/QC, conversion, integration and documentation. These tasks are elements of the overall approach for incorporating required datasets into the system. An accurate assessment of the scope of work and resources required to carry out data conversion first requires identification, evaluation, and prioritization of essential datasets, and establishment of data, and documentation standards. It is reasonable to expect that a substantial effort, 60% - 80%, may well be invested in these activities. Data priorities must guide the conversion effort within budgetary constraints. The estimated budget provides conservative controls on a potentially vast undertaking.

Step 8. Develop a Long-Range Implementation Plan

ADNR and ADEC have the ability to maintain the system into the future. Considerable breadth exists within the Departments and the Department of Natural Resources has an extensive computer support system in place. DNR's Division of Information Services includes computer repair technicians familiar with both hardware and software on a variety of platforms (UNIX, Windows, Macs), programmers, systems administrators, GIS experts, and database experts.

DNR manages 86 million acres of uplands for diverse uses as well as the State's tidelands. Its land status database is presently being converted from an older computer drafting system to a GIS using open networks and distributed processing. This system is being tied to the department's tabular, mainframe Land Administration System (consisting of databases and over 2500 computer programs) in order to provide additional decision making tools to land managers. The scope of this project is quite large and the breadth of staff support required to complete this task quite extensive. This capacity is available to DNR principal investigators working on this project. In addition, the department has an extensive data distribution system in place and regularly distributes data to the public. MOUs are in place with a variety of governmental organizations to facilitate the exchange of data on a regular basis.

DEC has committed to the long-term maintenance of the information management/monitoring system subsequent to completion of this project. The DNR Commissioner has committed the agency to maintaining the Cook Inlet application and the associated GIS coverages supporting this application as part of their on-going role in maintaining a National GeoSpatial Data Clearinghouse node at ADNR. Staff have been identified to work directly with the contractor to ensure that a

complete understanding of the system resides with the agencies and that long-term maintenance requirements are reasonable.

A plan will be developed for maintaining the system and transferring, relating, integrating and updating data over the long run. The plan will include staffing, hardware and software, application and networking recommendations. Deliverables associated with Step 8 include Project Design Document, Training Manual, and User's Guide.

C. Cooperating Agencies, Contracts and Other Agency Agreements

The Alaska Department of Environmental Conservation and the Alaska Department of Natural Resources will be jointly responsible for project implementation, drawing upon the expertise within each agency. Both agencies will work cooperatively with technical consultants in the areas of hardware and software upgrade requirements, data acquisition and translation support, application development, and staff training. ADEC will focus primarily on water quality issues and database design while ADNR will lend assistance in the areas of geo-referenced data issues, application development, and resource management issues.

ADEC will conduct an in-house review of other agencies' water quality data inventories in addition to ADEC's Data Repository Analysis (Resource Data, Inc., 1997). ADEC will develop QA/QC protocols and data collection standards associated with water quality data. ADEC will assist in the design and development of the relational database engine.

In keeping with its objective, to develop a State wide watershed approach, ADEC will operate and maintain the information-monitoring system subsequent to completion of this project. This long-term commitment will allow the Trustee Council, the scientific community, resource managers and the public to access information on the recovery of injured resources and services.

ADNR is currently implementing an "Alaska State Geospatial Clearinghouse" funded with a grant from USGS. The Clearinghouse project will establish a National Geospatial Data Clearinghouse node at the Alaska Department of Natural Resources, which will allow for the development of an electronic pathway to meet public and inter-agency demands for geospatial data. Data will be documented according to the FGDC requirements to ensure consistency and discovery on line. The ADNR Clearinghouse project focuses on state and local data and will complement the Alaska Geographic Data Clearinghouse site developed and maintained by USGS.

As a result of the clearinghouse project ADNR will be able to facilitate the identification of available data, encourage the efficient use of State and Federal resources in order to avoid duplication of effort, and ensure that data, as it is incorporated into this project, is both useful to and consistent with other Statewide efforts. ADNR will be responsible for evaluating and determining usefulness of related GIS data, and will take the lead in making data usable to the GIS application developed as a result of this project. ADNR will ensure that the GIS interface is compatible with other State GIS projects, software and data collection efforts. ADNR will develop data and data transfer standards for this project, and evaluate existing hardware and software configurations in terms of capability, capacity, and compatibility. ADNR will have primary responsibility for the GIS component of this project.

As a collaborator on the project, EPA will provide technical assistance in system design as well as access to the EPA Contractor responsible for designing similar systems in other States. As part of the overall EPA and ADEC objective of a State wide watershed approach, emphasis will be placed on assuring that the project is complementary to the concept of a State-wide "Environmental Information Clearinghouse." EPA will also serve as the facilitator for involvement in the project of other Federal natural resource agencies and will contribute its organizational and leadership skills to ensure continued Cook Inlet Coalition involvement. EPA has also agreed to make all of its Water Quality and Permits databases available to the Cook Inlet Management/Monitoring System.

The US Forest Service will provide technical assistance in project design in order to ensure agency concerns and project compatibility issues are addressed. USFS will contribute staff resources as needed to address management and scientific needs of the agency in the development of this project.

A consultant will be utilized to facilitate creation of a database structural framework and integration of water quality data, EVOS related data, environmental data, cultural and physical features into a GIS-based decision making tool with the potential for Internet access. The technical consultant is key to the success of this project. We are working with EPA and propose to utilize a National Level of Interest Contractor under contract to EPA with extensive experience in projects of this nature. Similar projects have been implemented by this contractor in Colorado, Montana, Chesapeake Bay, and Jordan.

The contractor will be used to facilitate the User Analysis, evaluate user community input and develop a recommended system specification. The contractor will develop the Cook Inlet prototype with assistance from DEC and DNR staff who have experience in data management in Alaska. The contractor will perform most data integration, application development, and user interface development. This strategy will ensure that contractual dollars are spent on areas where the contractor already has extensive experience, enabling us to benefit from knowledge and products they have developed elsewhere. This strategy will also ensure that project development goes beyond a single agency approach. Alaska agency staff familiar with the data, its limitations, location, and structure will be responsible for most routine data management tasks as well as local coordination and dissemination of information. Agency staff will also be closely involved in application development, data integration and user interface development in order to ensure that maintenance of the system can be accomplished without contractor support. Agency staff has experience in training GIS users and will be utilized for this portion of the project.

SCHEDULE

Phase I

Measurable Project Tasks for FY 99 (October 1, 1998 -September 30, 1999)

October 1998	Identify User Community, Establish written contact. Coordinate with EPA to schedule preliminary Cook Inlet Coalition Meeting to introduce project, encourage participation and identify additional members of User Community. (Step 1, page 7)
October 1998	Develop cooperative agreement with EPA. Initiate Contractor Contact, Identify scheduling, facility and program needs for User Needs Analysis Workshop. Assemble comprehensive list of available datasets for distribution to User Community for review prior to User Needs Analysis Workshop. (Step 3, preliminary, page 8-9)
November 1998	Conduct User Needs Analysis Workshop facilitated by Contractor. (Step 2, page 7-8)
December 1998	Results of User Needs Analysis Workshop due from contractor. a) Prioritized list of data sources and strategy for data acquisition. b) User Needs Analysis. c) Systems evaluation of hardware and software. d) Prototype System specifications. e) System standards.
January 1999	Cook Inlet Coalition meets to review results. (Steps 2, 3, 4, partial 6, pages 7-13)

January 1999	Begin development of Prototype for Cook Inlet by contractor. Initiate data acquisition, manipulation, QA/QC, conversion, by staff. Compile data inventory by staff (Steps 5, 6, 7, page 10-13)
Ongoing	Data acquisition, manipulation, QA/QC, conversion, integration. (Step 7, page 13)
July 1999	Prototype evaluation initiated through meeting of Cook Inlet Coalition. Initiate agency staff training for prototype evaluation. (Steps 5, 6, revisit Step 2, pages 10-12, 7-8)
September 1999	Prototype evaluation continues. Development of System Specifications for implementation of Phase II. a) System Specifications. b) System standards. c) Long term maintenance. d) Prioritized list of data sources and strategy for data acquisition. e) Data management.
October 1999	Cook Inlet Coalition meets to review Full System Specifications. (Step 8, page 13-14)

Phase II *DRAFT*
Measurable Project Tasks for FY 2000 (October 1, 1999 -September 30, 2000)

December 1999	Implementation of System Specifications delivered in Phase I. Initiate integration of prioritized databases and associated metadata. Continue agency staff training as a prototype evaluation tool. (Steps 5, 6, 7, pages 10-13)
August 2000	Integration of databases completed. Data documentation, data dictionary, completed. (Steps 5, 6, 7, 8, pages 10-14)
August 2000	Develop User's Manual. (Steps 5, 6, 7, 8, pages 10-14)
August 2000	Training and public outreach. (Steps 5, 6, 7, 8, pages 10-14)
September 2000	Deployment of Cook Inlet System

Project Milestones and Endpoints

Phase I (FY 99 October 1, 1998 to December 1, 1999)

October 1998	Schedule meeting of Cook Inlet Coalition to prepare for User Analysis Workshop.
November 1998	User Analysis Workshop.

December 1998	User Analysis Complete.
December 1998	User Analysis Complete.
January 1999	Cook Inlet Coalition Review of User Analysis.
July 1999	Cook Inlet Prototype available for evaluation.
December 1999	Cook Inlet System Specifications Complete.

Phase II *DRAFT* (FY 2000 October 1, 1999 to September 30, 2000)

June 2000	Integration of databases and metadata.
August 2000	User's manual and database documentation.
August 2000	Staff Training and public outreach.
September 2000	Cook Inlet System available for use.

Completion Date September 30, 2000.

Deliverables Phase I (FY 99, October 1, 1998 to September 30, 1999)

1. User Needs Analysis
   - Prioritized list of data sources, strategy for acquisition
   - Identification of User Needs, practical applications
   - System evaluation, hardware and software
   - System standards
2. Identification and Prioritization of Datasets
   - Compilation of available data, including description, format, availability, currency, originator, contact information.
   - Compilation will not be FGDC compliant but will be available for posting on the internet if desired.
3. Prototype
   - Cook Inlet Information System, Beta Version
   - Installation Instructions
   - Preliminary User Guide
   - Evaluation Survey
4. Cook Inlet System Specifications
   - Technical Approach
   - Data Analysis
   - Design
   - User Guide
   - Recommendations

NORMAL AGENCY MANAGEMENT

Resource agency management mandates in the Cook Inlet watershed do not specifically address recovery monitoring or management of injured resources/services or their habitats. Only projects that have been funded by the *Exxon Valdez* Oil Spill Trustee Council have focused on injured resources and services as an objective. Although pollution tracking, permitting, and regulatory activities are normal agency management activities, they are not carried out with the benefit of research specifically addressing injured resources and associated services.

Agency regulatory actions are generally focused on single resource management strategies or individual project implementation. These actions may lack a coordinated, comprehensive ecosystem approach. Ecosystem or watershed-level management requires access and integration of a diverse array of data from disparate sources. In order for agencies to consider the cumulative impact of management and regulatory actions on injured resources and services and their associated habitats. the agencies must be able to integrate and utilize the data and information collected about these resources. Agencies do not normally consider, or have the capability to consider. the impact of management and permitting decisions on injured resources and services.

A coordinated, comprehensive watershed-level approach will facilitate effective management. It will encourage and facilitate the implementation of cost-effective solutions that are beyond the capability and capacity of individual agencies and communities. As a result, environmental stress and further degradation of existing services will be diminished, resulting in less injury to local resources important to the livelihood of these communities. A cooperative effort between the agencies and communities will improve the management of water resources and facilitate recovery of injured resources.

A comprehensive approach to restoration of injured resources/services with habitats in Cook Inlet would include not only affected species populations, but also consideration of relevant ecological elements on a watershed scale. From a technical perspective, management at the watershed level allows for evaluation and control of pollution and development impacts that would affect recovery of injured resources/services.

The proposed project would provide a tool enabling regulators, managers and planners to affect a watershed approach to management. For example, ADEC has the statutory obligation to evaluate waste stream impacts to a receiving water through the certification of National Pollution Discharge and Elimination System (NPDES) permits, administered by the EPA. This evaluation requires information from a variety of sources in addition to that provided by an applicant seeking a discharge permit or other activity that might affect water quality. Moreover, this information must be made available to the public during the permit application and review process. At the present time, there is no database that contains or links the datasets that are needed for this evaluation and review. Implementation of the system would help both the public and resource agencies answer questions such as:

- What is the condition of the surface, ground, estuarine, and coastal waters?
- Where, how, and why are water quality conditions changing over time?
- Where are the problems related to water quality? What is causing the problems?
- Are efforts to prevent or remediate problems working effectively?
- Are water-quality goals and standards being met?

In the case of a new discharge permit application, the system proposed by this project would allow DEC staff to access appropriate base datasets, the EPA STORET database, the USGS water quality monitoring network, and relevant USGS stream gages. In addition, these data as well as the DEC analysis could be made accessible to the public. DEC reviewers could also determine, by checking

on-line datasets, whether or not the proposed discharge would have impacts upon recovering populations or their habitats. The system would also allow DEC or EPA to build and use models to assess the waste-assimilative capacity of the receiving waters and the impact of pollution inputs on wetlands and injured resource habitats.

In the case of land managers responding to requests for permits in Cook Inlet tidelands, as required by statute, the system proposed by this project would allow staff to review existing human uses in the area as well as information concerning habitats of injured resources and services. A decision could be made that factors in the potential impact such an activity could have on injured resources or services. If the location requested by the applicant is deemed unsuitable, state law requires that an alternative must be located or proposed. The proposed system could be used to direct permitting toward less sensitive areas. At present this analytical capacity does not exist.

Internet access to the data used by agencies for permitting and planning decisions would allow the public to become better informed and thereby better able to comment and provide input to federal and state decision-makers. At the present time it is very difficult for the public to locate and access these datasets even though the agencies are obligated to make them available, i.e. FOIA requests.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

This project will be integrated with the Restoration Effort by involving principal investigators and EVOS data managers in the User Needs Analysis. Key Principal Investigators will be surveyed and asked to evaluate and test the system for usefulness and the ability to accommodate results of their research. It is extremely important that key information derived from EVOS studies be included in this system if end users are to be able to include information relative to injured resources and services in their decision making processes. In addition, extensive coordination with SEA, APEX and NVP, will avoid duplication of effort and ensure that pertinent data and information from those projects is incorporated into this system.

PRINCIPAL INVESTIGATORS

Jeff Hock

Jeff Hock has a Bachelor's degree in Environmental Sciences from the University of Virginia with significant coursework in civil engineering. He has been employed in various capacities with the State of Alaska since 1975 in both the Alaska Department of Fish & Game and the Department of Environmental Conservation. As an Ecologist with the ADEC Division of Environmental Quality he has been involved in the design and implementation of a variety of monitoring projects and has extensive experience in quality assurance, project plan development and review, and sampling methodology. He has been instrumental in exploring and implementing new technologies within the Division of Environmental Quality including, modeling software, rapid bioassessment protocols, satellite telemetry, global positioning technology, geographic information systems, and automated water quality data acquisitions and telemetry systems. Mr. Hock's responsibilities also include developing and implementing ADEC's watershed framework by working with local stakeholders, and participating on various statewide water quality planning committees.

Russell Kunibe

Russell Kunibe has an MS and BS in Physiology from UC Davis and has 9 years of experience with the Department of Environmental Conservation both as an Environmental Specialist and as an Analyst Programmer. He is currently responsible for the DEC Web site and is the department GIS expert. He has served as the department representative to the Statewide GIS committee and

Webmasters committee. He has managed the Spill Prevention and Response Division's data management tasks.

In addition Mr. Kunibe has a working knowledge of the Cook Inlet and Prince William Sound areas. He successfully owned and operated his own commercial fishing, boat charter, and dive shop businesses in Homer prior to the *Exxon Valdez* Spill. During the response to the *Exxon Valdez* Spill, Mr. Kunibe managed the DEC Field Office in Homer.

Patty Bielawski

Patty Bielawski has extensive experience as an environmental scientist specializing in facilitating resolution of natural resource program and policy issues; permitting; and analysis of environmental and resource legislation and regulation. She has worked in the private sector as a consulting environmental scientist (BPX, AOGA) and in the public arena as a special assistant to the Commissioner of the Department of Natural Resources (present) and Senior Project Review Coordinator for the AK Division of Governmental Coordination. Ms. Bielawski has a B.S. in Biology from the University of Santa Clara, with specialized training in Environmental Regulation and Legislation, Resource Conservation and Recovery Act, Hazardous Waste Bioremediation, and North Slope Terrestrial Studies.

Her current position as Special Assistant to the Commissioner of the Department of Natural Resources has involved extensive interagency project management efforts and will be invaluable in the implementation and coordination of the scientific aspects of this project.

Dorothy Mortenson

Dorothy Mortenson has fourteen years of cartographic and geographic information system experience. She is currently the GIS Project Manager and a senior member of the Technical Information Services staff at the Alaska Department of Natural Resources, and is responsible for all aspects of GIS services for the Exxon Valdez oil spill mapping and analysis. Ms. Mortenson has piloted projects to improve data quality, efficiency, and accessibility. Ms. Mortenson received the "Director's Technical Contribution Award" from the Environmental Protection Agency, 1989 and has a Bachelor of Science degree in Geography with an emphasis on Cartography and Remote Sensing, Oregon State University, 1986.

Ms. Mortenson has been instrumental in creating an ADNR GIS User's Group and has actively participated in statewide State Federal Data Clearinghouse efforts and projects. She is currently involved in the implementation of the Alaska State Geospatial Clearinghouse, an NSDI Competitive Cooperative Agreement with USGS. This project will establish a National Geospatial Data Clearing-house node at the Alaska Department of Natural Resources. This project will allow for the development of an electronic pathway to meet public and inter-agency demands for geospatial data. Data will be documented per the requirements of the FGDC "GEO" content standards to assure discovery. This node will complement the NSDI clearinghouse site established at the Alaska Field Office of the US Geological Survey by focusing on state and local data. Ms. Mortenson's experience in this project will prove invaluable as the team seeks to identify existing datasets, avoid duplication of effort, and leverage ongoing data acquisition, and manipulation efforts.

Kelly Zeiner

Kelly Zeiner has a Master of Science in Spatial Information Science and Engineering from the University of Maine, Orono, and a Bachelor's Degree in Management Information Systems from Northeastern University, Boston, MA. She has extensive experience with Arc/Info, ArcView, and a variety of programming languages (AML, DIBOL, COBOL, BASIC) and computer operating systems (UNIX, Windows, Macintosh). As part of her graduate program she designed and taught

a series of 3 day ArcView/Avenue course exercises and lectures at the University of Maine. This experience is invaluable in communicating with potential system users, managers, and scientists and interpreting and understanding their information and analytical needs.

Ms. Zeiner has been employed at DNR since 1992 and has extensive experience with *Exxon Valdez* Oil Spill data and project demands. Final products of her work on EVOS related projects include applications ("EVOS Oil Spill Research & Restoration Information Project"), maps, slides, and reports on analyses performed. Ms. Zeiner has also designed and built a prototype application using ArcView 3.0 for viewing and querying ADNR's statewide parcel-level database, including an SQL connection to a massive land records database. In addition, Ms. Zeiner has designed a prototype application based on the State of Florida's Oil Spill Contingency Planning tool using ArcView 3.0 adapted for use in the State of Alaska. The contingency planning prototype has focused on the Kodiak region.

KEY PERSONNEL

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Final

PROJECT 99391 / COOK INLET INFORMATION MANAGEMENT AND MONITORING SYSTEM

99391 Phase I Budget by agency

	ADEC	ADNR	USFS	Total
Personnel	$33.4	$36.3	$6.3	$76.0
Travel	$2.1	$0.7	$0.4	$3.2
Contractual	$0.0	$75.0	$0.0	$75.0
Commodities	$0.2	$0.0	$0.0	$0.2
GA	$5.0	$10.7	$0.9	$16.6
Total	$40.7	$122.7	$7.6	$171.0

99391 Phase II Budget by agency

	ADEC	ADNR	USFS	Total
Personnel	$41.0	$49.7	$0.0	$90.7
Travel	$0.8	$0.0	$0.0	$0.8
Contractual	$0.0	$55.0	$0.0	$55.0
Commodities	$0.0	$0.0	$0.0	$0.0
GA	$6.2	$11.3	$0.0	$17.5
Total	$48.0	$116.0	$0.0	$164.0

Project Total **$335.0**

Submitted 10/13/98

SPREADSHEET B: TRUSTEE COUNCIL ACTION (8/13/98) / FY 99 WORK PLAN

Proj.No.	Project Title	Proposer	Lead Agency	New or Cont'd	FY99 Fund	FY99 Defer	FY00 Estimate	FY01 Estimate	Total FY99-02
99391	Cook Inlet Information Management/Monitoring System	J. Hock/ADEC, C. Fries/ADNR	ADNR	New 1st yr. 2 yr. project	$335.0	$0.0		$0.0	$335.0

Project Abstract

This project will develop an integrated data base containing digital environmental and spatial data for the Cook Inlet watershed. The system will facilitate access to data from a wide variety of sources about the resources and services injured by the spill as well as base data sets important to understanding the environment of the watershed. This database will support monitoring, management, and restoration. The system will provide access through the Internet to the public and private sectors. Water quality data sets derived from the watershed will provide the cornerstone of this system thereby facilitating monitoring of both baseline parameters and chronic sources of marine pollution. From both public policy and natural resources management perspectives, this project will protect the governments' investment in restoration by making information derived from restoration activities and water quality monitoring programs available for management of the watershed in a manner that will promote the recovery of the injured resources and services.

Chief Scientist's Recommendation

No recommendation from the Chief Scientist due to possible conflict of interest with indirectly related non-EVOS work for which the Chief Scientist is on contract. [NOTE: The project was sent out for independent peer review; the comments of the reviewers are reflected in the Executive Director's recommendation.]

Trustee Council Action

Fund contingent on approval of a revised budget. Funds will be released in two phases: Phase 1 will consist of a user needs assessment and metadatabase development. Phase 2, to be authorized by the Executive Director following completion and satisfactory review of Phase 1 and a presentation to the full Trustee Council, will consist of prototype development. This project aims to improve management of injured and other marine natural resources by facilitating access to widely scattered databases on water quality, pollution sources, land uses, and related information in the Cook Inlet watershed. Year 1 objectives include assessing the needs of public stakeholders and agency resource managers, developing a metadatabase, and developing a prototype system for Internet access to data, graphics, images, text, and documents. The peer reviewers found the revised Detailed Project Description greatly improved over the original, but continue to raise significant questions, such as whether a centralized vs distributed database is most appropriate and cost effective. In addition, I remain concerned about the project's scope, ambitious schedule, relationship to other EVOS data management needs, and high cost. I recommend cost sharing be obtained to replace at least part of Phase II costs--this project would substantially serve ongoing agency needs and goals as well as contribute to the Trustee Council's restoration objectives by facilitating improved management of the marine habitats on which injured resources rely. Funding the project in two phases will allow these issues to be resolved before making decisions on subsequent steps.

cfupdt2
2/22/99

UPDATE ON HUMAN SERVICES

Proposed Changes to February 1999 Draft

(underlined language will be added; bracketed language will be deleted)

Commercial Fishing

Clarify 1st paragraph on page 3:

These projects include enhancement work, such as fertilizing Coghill Lake to produce sockeye salmon and building structures in streams to increase habitat for coho salmon in Prince William Sound, increasing salmon production by reconstructing the fish ladder to pass pink and coho salmon at Little Waterfall Creek in the Kodiak area [to improve access to good spawning habitat for pink and coho salmon], and excavating Port Dick Creek on the Kenai Peninsula to reclaim spawning habitat for pink and chum salmon. Projects have also been funded to develop tools that have [almost] immediate benefit for fisheries management. Catch accounting tools such as otolith mass marking of pink salmon and improved [assessment methods for determining] herring biomass estimates aid management in Prince William Sound, as do in-season genetic stock identification and marine sonar surveys for sockeye salmon in Cook Inlet.

Passive Use

Add heading at beginning of section (page 3):

Injury and Recovery

Correct paragraph at top of page 4:

As of December 1998, the Council has protected over 640,000 acres of habitat, including more than 1,400 miles of coastline and over 300 [at least 287] streams valuable for salmon spawning and rearing.

Recreation and Tourism

Clarify 4th paragraph on page 5:

Key informants with experience along the outer Kenai Coast also reported diminished sightings of seabirds, seals, and sea lions [along the outer Kenai coast].

Correct 2nd paragraph on page 6:

Recreational users have benefitted greatly from the Trustee Council's large parcel habitat acquisition program, which is opening more than 1,300 miles of shoreline and over 300 [280] salmon streams to public use.

NOTE: As of 2/22/99, no public comments had been received on the services update.

EXXON VALDEZ OIL SPILL RESTORATION PLAN

Update on Human Services

February 1999

DRAFT

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
645 G Street, Suite 401, Anchorage, AK 99501
907-278-8012 800-478-7745 (in Alaska) 800-283-7745 (outside Alaska)

Injury and Recovery

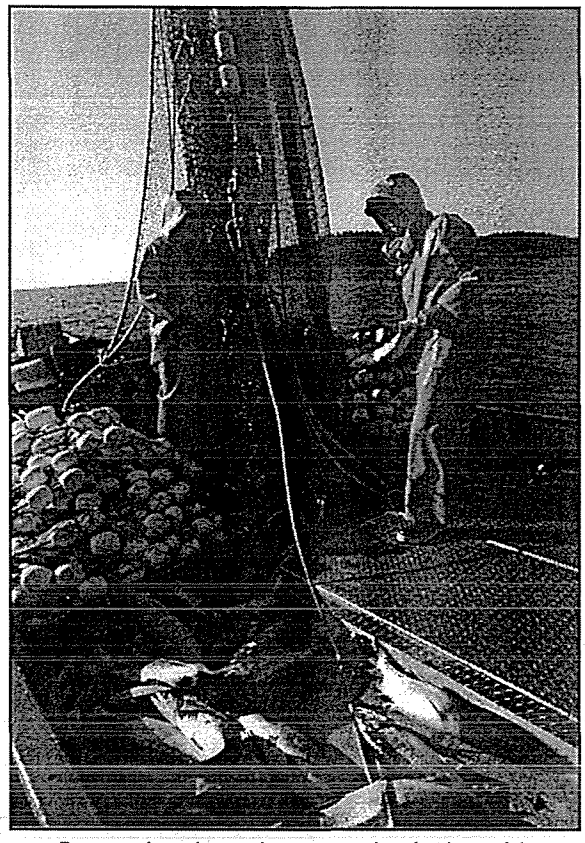
Commercial fishing is a service that was reduced through injury to commercial fish species (see individual resource accounts) and also through fishing closures. In 1989, closures affected fisheries in Prince William Sound, Cook Inlet, the outer Kenai coast, Kodiak, and Chignik. These closures harmed the livelihoods of persons who fish for a living.

Recovery is underway but not complete for three of the injured resources that are commercially fished — pink salmon, sockeye salmon, and Pacific herring; the recovery status of rockfish is unknown. No spill-related district-wide fishery closures related to oil contamination have been in effect since 1989. However, the Prince William Sound herring fishery was closed 1993-96 due to a disease outbreak that may be related to the oil spill, and was open only to limited commercial harvest in 1997 and 1998. **For these reasons, commercial fishing, as a lost or reduced service, is in the process of recovering from the effects of the oil spill, but full recovery has not been achieved.**

The period before the oil spill was a time of relative prosperity for many commercial fishermen. The years 1987-88 saw some of the highest ever per pound prices for salmon and increased capitalization of the fishery. Thus, fishermen's expectations for income in 1989 were very high, making the fishery closures and other spill effects even more disruptive.

For a variety of reasons, as discussed below, income disruptions continue today, as evidenced by changes in average earnings, ex-vessel prices, and limited entry permit values. For example, for the period 1981-97, fishermen's average earnings in the Prince William Sound salmon seine fishery peaked in 1987-88, dropped in 1989 to 1984-85 levels, rebounded in 1990, hit a new low in 1992-93 (runs in 1992-93 were the lowest in 15 years), and since have hovered somewhat below the 1989 level. Average harvests have varied widely during this period, with the three highest years being 1994, 1996, and 1997. Ex-vessel prices were highest in the period 1987-89, and have been below prices of the early 1980's ever since. Limited entry permit values in this fishery reached a peak in 1989-91, nearly double the value in any earlier year in this period, and have declined since to roughly 15 percent of their peak value. The number of permits fished, roughly 250 each year 1981-91, had declined to 114 in 1997.

Natural variability in fish returns and a number of economic changes in the commercial fishing industry since 1989 probably mean that many of these changes in income are not directly attributable to the spill. However, these factors also make discerning spill-related impacts difficult. Economic changes confronting the industry include the increased world supply of salmon (due primarily to farmed salmonids) and corresponding reduced prices, entry restrictions in certain fisheries (such as Individual Fishing Quotas, IFQs, for halibut and sablefish), allocation changes (e.g., a reduction in the allocation of Cook Inlet sockeye salmon to commercial fishermen), and changes in processing capacity (closure of major processors in Cordova and Kenai and introduction of some smaller and more specialized processors).



. Recovery is underway but not complete for three of the injured resources that are commercially fished — pink salmon, sockeye salmon, and Pacific herring.

Although a number of studies aimed at allocating financial impacts to the oil spill versus other factors have been carried out, the federal jury's compensatory award (as opposed to the $5 billion in punitive damages) in the private lawsuit against Exxon is the current legal determination of the liability and damages regarding commercial fishermen (including permit holders, fishing crew, spotter pilots, and vessel owners). The jury award, which is currently under appeal by Exxon, is less than the damage claimed by commercial fishermen and more than that acknowledged by Exxon. In brief, the jury determined that any financial effects on fishermen after 1989, with the exception of the salmon seine fishery in Prince William Sound in 1992-93 and the herring fishery in Prince William Sound in 1993, are not attributable to the spill. The jury considered damage claims for the period 1989-95, including claims related to size of harvest, fish prices, limited entry permit values, and vessel values.

Trustee Council scientists have documented some continuing biological injury to pink salmon, sockeye salmon, and herring (see individual resource accounts). It is not clear to what extent these continuing injuries might be affecting commercial fishing.

The Trustee Council has invested and continues to invest in projects to understand and restore commercially important fish species that were injured by the oil spill. These projects include enhancement work, such as fertilizing Coghill Lake to produce sockeye salmon, reconstructing the fish ladder at Little Waterfall Creek to improve access to good spawning habitat for pink and coho salmon, and excavating Port Dick Creek to reclaim spawning habitat for pink and chum salmon. Projects have also been funded to develop tools that have almost immediate benefit for fisheries management, such as otolith mass marking of pink salmon in Prince William Sound, improved assessment methods for determining herring biomass, and in-season genetic stock identification for sockeye salmon in Cook Inlet. In addition, the Council continues to fund research projects, such as the Sound Ecosystem Assessment and genetic mapping which will enhance the ability to predict and manage fisheries over the long-term, and studies to determine how disease is affecting recovery of the herring population in Prince William Sound and what factors might trigger an outbreak.

In addition, the Trustee Council's habitat program has protected roughly 640,000 acres important for restoration, including at least 287 streams valuable for salmon spawning and rearing and 1,400 miles of coastline. Researchers in the Pacific Northwest have concluded that depleted salmon populations cannot rebuild if any habitat that is critical during any of their life stages is seriously compromised. Sockeye salmon, too, have benefitted from the Council's habitat program, which has protected streambank, lakeside, and watershed habitats on the Kenai Peninsula, in Prince William Sound, and on Kodiak and Afognak islands. The Council has also provided funds to stabilize and restore degraded streambanks along the Kenai and Russian rivers.

Recovery Objective

Commercial fishing will have recovered when the commercially important fish species have recovered and opportunities to catch these species are not lost or reduced because of the effects of the oil spill.

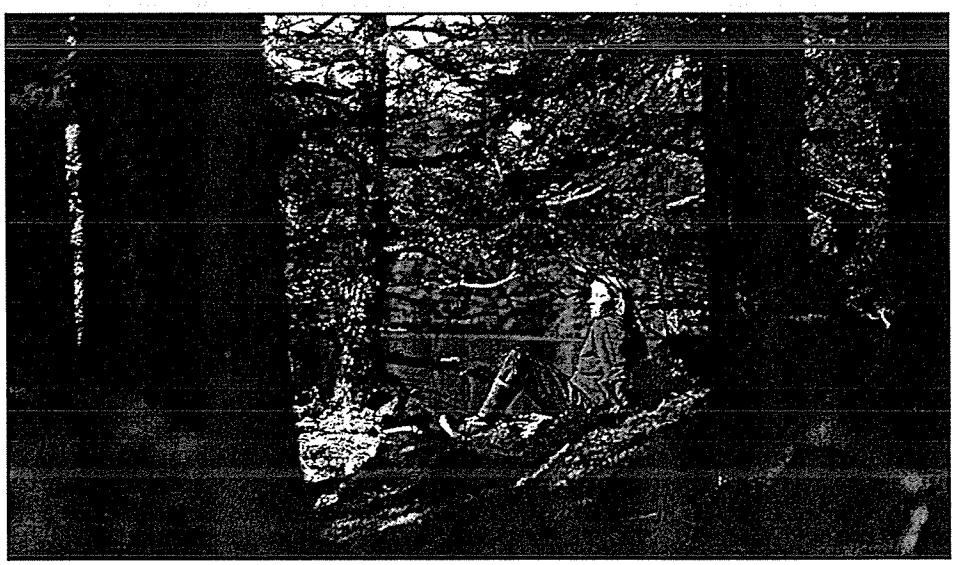
Passive Use - *Recovering*

Passive use encompasses nonuse values, such as the appreciation of the aesthetic and intrinsic values of undisturbed areas and the value derived from simply knowing that a resource exists. Injuries to passive use are tied to public perceptions of injured resources. **Because recovery of a number of injured resources is incomplete and in some cases has not begun, the Trustee Council considers passive use, as a lost or reduced service, to be recovering from the spill but not fully recovered.**

Immediately following the oil spill, the State of Alaska, using a contingent valuation approach, measured substantial losses of passive use values resulting from the spill. This approach involved surveying a sample of U.S. households to elicit how much people would be willing to pay in additional taxes to fund a program designed to prevent future spills. Prior to answering the survey questions, respondents were provided information about the spill's impact, including the number of miles of shoreline oiled, an estimate of the number of birds, sea otters, and harbor seals killed, and the conclusion that few fish were harmed, as well as projections of when recovery would occur (typically three to five years).

In updating the status of passive uses ten years after the spill, the Trustee Council has chosen not to repeat the contingent valuation study, which was very expensive and time consuming. However, the key to recovery of passive use is knowing that restoration of injured resources has occurred. Toward this end, in the years since the settlement between Exxon Corporation and the state and federal governments, the Council has undertaken a comprehensive program to restore injured resources and has made a deliberate and consistent effort to inform the public about the status of restoration.

The two key components of the Trustee Council's restoration effort are the research, monitoring, and general restoration program and the habitat protection and acquisition program. The research, monitoring, and restoration program, which is funded each year through the annual work plan, focuses mostly on knowledge and stewardship as the best tools for long-term health of the marine ecosystem. It also includes development of tools to benefit fisheries management and some direct enhancement activities, such as improving access to spawning habitat. Projects to monitor the status of injured resources, including resources such



The key to recovery of passive use is knowing that restoration of injured resources has occurred. Therefore, recovery of passive use is underway, but not complete.

as killer whales for which no active restoration may be possible, are also funded through the annual work plan. The habitat protection program preserves habitat important to injured resources through the acquisition of land or interests in land. As of December 1998, the Council has protected over 640,000 acres of habitat, including more than 1,400 miles of coastline and at least 287 streams valuable for salmon spawning and rearing. A summary of the Council's public information efforts follows.

The Trustee Council maintains a mailing list of roughly 3,000 people and organizations, both inside and outside of Alaska, to whom it sends the *Restoration Update,* its bimonthly newsletter; annual work plans, which describe the work underway in a particular year to restore the injured resources and services; the *Annual Status Report,* which reports to the public on the progress of restoration; updates to the Restoration Plan (1996, 1999); and notice of the Council's annual restoration workshop. The workshop, which provides another venue for reporting on the progress of restoration, is attended by all EVOS researchers and open to the news media and public.

In addition, from 1996 through early 1999 the Council aired a weekly radio series, "Alaska Coastal Currents", throughout the state. This two-minute program, produced by the Alaska Public Radio Network, was designed to communicate news of marine science and other restoration activities. A weekly newspaper column, based on the radio series, has been in print since June 1997.

Also in 1997, the Trustee Council established a web site (www.oilspill.state.ak.us), which offers detailed information about restoration efforts. A number of individual projects funded by the Council have their own web sites. The Council began publication of its Restoration Notebook series in 1997 as well. This series, which tells the story of injury and recovery from the spill of select injured species, is written by EVOS researchers. It is distributed free upon request, and is suitable for highschool age and older.

Another important means of informing the public are the written reports the Trustee Council requires for all restoration projects. These reports, which are peer reviewed by independent scientific peer reviewers, are available to the public through the Council's Oil Spill Public Information Center (now part of the Alaska Resource Library and Information Services, ARLIS) in Anchorage as well as at several other libraries in the state, at the Library of Congress, and through NTIC (National Technical Information Services). ARLIS also houses books, videotapes, maps, and other materials related to the oil spill, a listing of which is available online at //library.ci.anchorage.ak.us/arlis.html. In addition, the Council supports researchers in publishing their project results in the peer-reviewed scientific literature, which expands their audience well beyond Alaska. More than 270 such papers have been published as of February 1999.

The 17-member Public Advisory Group (PAG), which was established in the civil settlement between Exxon Corporation and the state and federal governments, is an important means of keeping stakeholders and others informed of the progress of restoration. In addition to holding quarterly meetings with the Trustee Council staff, each year the PAG holds an open house in one or more communities in the spill area. Additional public meetings are held throughout the spill area each year by the Council and its staff. All meetings of the Council are widely advertised and opportunity for public comment, often via the teleconference network, is always provided. Press releases are issued following major actions of the Council.

In 1998-99, in preparation for the tenth anniversary of the spill, the Trustee Council has stepped up its efforts to inform the public about the status of restoration. A visual exhibit on restoration activities was produced for travel to spill area communities. Another exhibit is on display at the Alaska SeaLife Center in Seward. The Council's 1999 restoration workshop has been expanded to a major scientific symposium on what has been learned and accomplished in the restoration process. A 30-minute video has been produced for airing on public television in Alaska and for distribution to every school in the state.

In addition, a concerted effort by Trustee Council staff to interest national and international media in the 10th anniversary of the spill has resulted in numerous contacts. Major stories are expected in National Geographic Magazine, Alaska Geographic, Outside Magazine, Sports Afield and several other magazines in spring 1999. Several newspapers, including the Boston Globe, the Philadelphia Inquirer, and the Seattle Times, also have major stories in the works. A source reel prepared by the Council and containing three hours of footage related to restoration activities has been distributed, upon request, to a number of media outlets (ABC, CBS, CNN, and others) and documentary filmmakers.

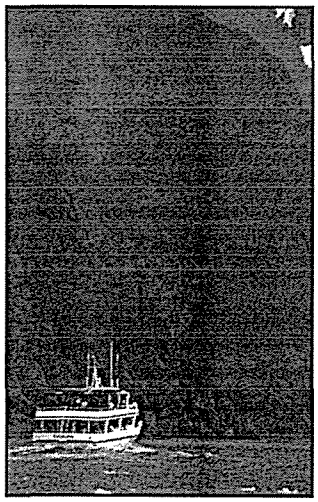
Recovery Objective

Passive uses will have recovered when people perceive that aesthetic and intrinsic values associated with the spill area are no longer diminished by the oil spill.

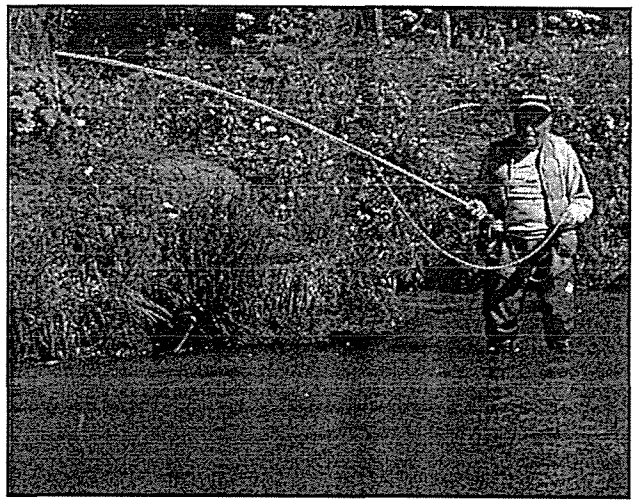
This publication was released by the Exxon Valdez Oil Spill Trustee Council and produced at a cost of $0.40 per copy.

Injury and Recovery

The oil spill disrupted use of the spill area for recreation and tourism. In the years since the spill, there has been a marked increase in the number of visitors to Alaska — from approximately 600,000 in the summer of 1989 to over 1.1 million in the summer of 1997 — and a similar increase in visitation to the spill area. For example, in 1997 the number of visitors to the Kenai Fjords National Park Visitor Center was nearly double what it was in 1989. In 1998, the number of visitors to the USFS Crooked Creek Visitor Information Center in Valdez was almost 50% greater than in 1989. From 1989 to 1997, the number of sportfishers increased by 65% in Prince William Sound, by 25% in the Kodiak Region, and by 15% in the Kenai Peninsula region.



Wildlife tours in Kenai Fjords National Park



Recreation includes sport fishing, sport hunting, camping, boating, hiking and other active outdoor pursuits.

However, the Trustee Council's recovery objective requires that the injured resources important to recreation be recovered and recreational use of oiled beaches not be impaired, and this objective has not been met. **Therefore, the Council finds recreation to be recovering from the effects of the spill, but not fully recovered.**

Several resources important for wildlife viewing still are not recovered from the spill or their recovery is unknown, including killer whale, harbor seal, common loon, cormorant (three species), Kittlitz's murrelet, and pigeon guillemot. Others resources, including sea otter, common murre, black oystercatcher, and marbled murrelet are recovering. The bald eagle, another resource important for wildlife viewing, has recovered from the effects of the spill. (See individual resource accounts for more information on recovery status.)

Telephone interviews were conducted in early 1999 with key informants who recreated extensively in the oil spill area before the spill and currently. Nearly all of the key informants with experience in Prince William Sound continued to report diminished wildlife sightings in the sound, particularly in heavily oiled areas such as around Knight Island. They reported seeing significantly fewer seabirds, killer whales, sea lions, seals, and sea otters since the spill, but also reported observing increases in the number of seabirds in the last couple of years. Key informants also reported diminished sightings of seabirds, seals, and sea lions along the outer Kenai coast. Changes in the amount of wildlife observed could be due to the oil spill or to other factors.

Sportfishing resources which are still injured by the spill or for which the recovery status is unknown are cutthroat trout, Dolly Varden, and rockfish. In 1991-93, in response to evidence of injury to cutthroat trout, sport harvests were temporarily restricted in Prince William Sound. A closure during the April 15-June 15 spawning season in the sound has been in effect since 1994; this closure reflects concern about the long-term conservation status of cutthroat trout, rather than specific spill-related concerns. The salmon species that were injured (pink and sockeye salmon) are recovering from the effects of the spill.

Harlequin ducks, which are hunted in the spill area, are still not recovered. The Alaska Board of Game restricted sport harvest of harlequin ducks in western Prince William Sound and Kenai Fjords in 1991. Those restrictions remain in place, but are currently under review and may be modified.

Trustee Council-sponsored surveys of oiled shorelines indicate that residual oil is still present on some beaches. The most recent survey in Prince William Sound (1993) found surface oil in 217 scattered locations along a total of 4.8 kilometers of shoreline and subsurface oil in 109 locations along a total of 7 kilometers of shoreline; sheening was apparent at many sites. The most recent survey of the Kenai outer coast and the coast of Katmai National Park (1994) found oil mousse persisting in a remarkably unweathered state on five moderately-to-heavily-oiled boulder-armored beaches. A survey of 30 oiled sites in the Kodiak Archipelago in 1995 found no oil or only trace amounts. The Katmai/Kenai Fjords shoreline survey will be repeated in the summer of 1999; the Prince William Sound survey likely will be repeated in 2001 or 2002.

Key informants telephoned in early 1999 indicated that some beaches in Prince William Sound, particularly in the western portion of the sound, continue to be avoided by some recreational users, particularly kayakers and campers, because of the presence of residual oil. Informants indicated that the possible presence of residual oil currently has no effect on recreational activities along the outer Kenai coast, the Kodiak Archipelago,

and the Lake Clark and Katmai national park coastlines.

In 1997, the Trustee Council provided funding for the residents of Chenega Bay, working with the Department of Environmental Conservation, to use PES-51, a citrus-based chemical agent, to clean some of the most heavily-oiled sites near their village. One year later, preliminary analysis showed that the cleanup method was largely effective in removing the visible surface oil at treated sites, although considerable subsurface oil remains. NOAA's Auke Bay Lab found no biological injury due to the cleanup.

Recreational users have benefitted greatly from the Trustee Council's large parcel habitat acquisition program, which is opening more than 1,300 miles of shoreline and 280 salmon streams to public use. Several smaller acquisitions have specific recreational significance, such as the Overlook Park tract near Homer and the Lowell Point parcel in Seward. In addition, in an effort to preserve the world-class fisheries on the Kenai River, the Council is in the process of protecting roughly 1,800 acres along the river and its watershed and has contributed nearly $2 million to riverbank restoration projects.

Recreation was also affected by changes in human use in response to the spill. For example, displacement of use from oiled areas to unoiled areas, particularly in the years immediately following the spill, increased management problems and facility use in unoiled areas. The State of Alaska dedicated over $10 million of its criminal settlement with Exxon to restoring recreational facilities and use in state parks in the spill area. Improvements include trails, cabins, boat launches, interpretive displays, and campsites. In addition, the Trustee Council has funded U.S. Forest Service development of a human use model for western Prince William Sound, which is intended to aid planning for and mitigation of human uses so that injured species continue to be protected. The model may also assist in planning for future recreation needs in the sound.

Recovery Objective

Proposed Revision: Recreation and tourism will have recovered, in large part, when the fish and wildlife resources on which they depend have recovered and recreation use of oiled beaches is no longer impaired.

SUBSISTENCE - *RECOVERING*

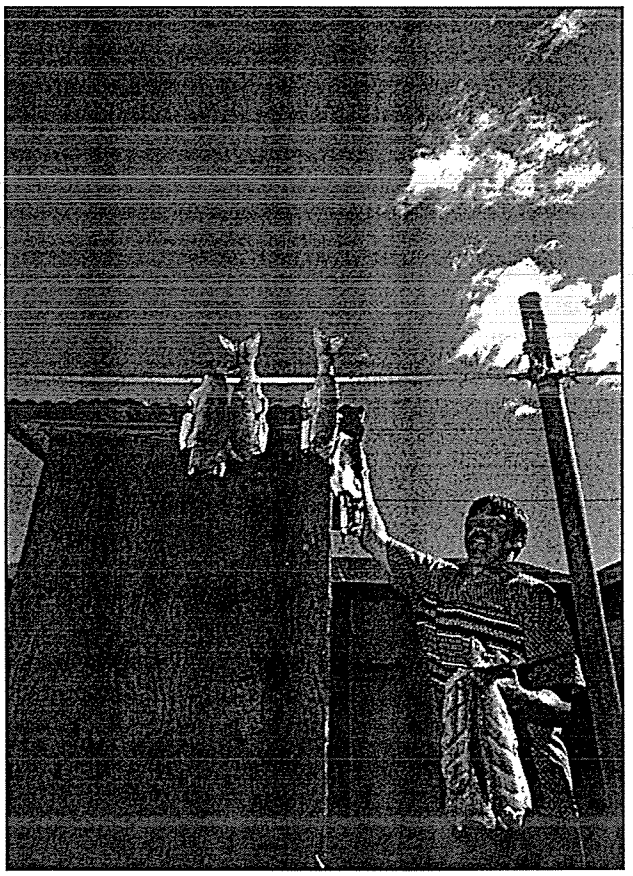
Injury and Recovery

Fifteen predominantly Alaskan Native communities (with a total population of about 2,200 people) in the oil-spill area rely heavily on harvests of subsistence resources, such as fish, shellfish, seals, deer, and waterfowl. Many families in other communities also rely on the subsistence resources of the spill area.

Household interviews conducted with subsistence users in communities throughout the spill area in 1989 indicated that subsistence harvests of fish and wildlife in most of the communities declined substantially following the spill. Key factors in the reduced harvests included reduced availability of fish and wildlife, concern about possible health effects of eating oiled fish and wildlife, and disruption of the traditional lifestyle due to cleanup and related activities. Household interviews were repeated each year 1990-1993 and again in 1998. By 1993, the estimated size of the subsistence harvest and participation in subsistence activities appeared to have returned to prespill levels in some communities, with the harvest rebounding first in the communities of the Alaska Peninsula, Kodiak Island, and the lower Kenai Peninsula and lagging behind a year or more in the Prince William Sound communities.

In 1998, interviews indicated that subsistence continues to recover from the effects of the oil spill, but has not fully recovered. The percentage of those interviewed who reported that subsistence uses are lower than before the spill has declined. Concerns about food safety and effects on the traditional lifestyle have lessened. Concerns about resource availability remain, but harvest levels in all communities interviewed are at or approaching prespill levels. Subsistence harvests in 1998 varied among communities from 250-500 pounds per person usable weight, indicating continued strong dependence on subsistence resources.

Regarding resource availability, subsistence users continued to report scarcity of a number of important subsistence resources, including harbor seals, herring, clams, and crab. These observations



Concerns about food safety and effects on the traditional lifestyle have lessened over the years. But, concerns about resource availability remain.

are generally consistent with scientific studies funded by the Trustee Council that continue to find that some subsistence species (e.g., harbor seals, herring, clams) are not recovered from the effects of the spill. The Council continues to support research projects that seek to understand why these resources are not recovering and what, if anything, can be done to speed their recovery (see individual resource accounts).

According to those interviewed, the 1998 increase in pounds harvested at a time of continued reduced resource availability reflects greater harvest effort (traveling farther, spending more time and money) than would have been required before the spill to achieve a similar harvest. It also reflects increased reliance on fish in the subsistence diet. For example, 1998 interviews in Chenega Bay indicated reductions in the per capita pounds harvested of marine mammals (from 140 pounds pre-spill to 15 pounds in 1998) and a corresponding increase in the per capita pounds harvested of salmon (from 70 pounds pre-spill to 225 pounds in 1998). In many communities, shellfish harvests have also declined significantly, for example in Nanwalek from 16 pounds pre-spill to 9 pounds in 1998. Increased fish harvests and decreased marine mammal and shellfish harvests occurred in most communities where interviews were conducted. The cultural and nutritional importance of each resource varies, and these changes in diet composition remain a serious concern to subsistence users.

The decline in shellfish consumption noted above reflects food safety concerns as well as reduced availability of shellfish. From 1989-94, subsistence foods were tested for evidence of hydrocarbon contamination, with no or very low concentrations of petroleum hydrocarbons found in most subsistence foods. However, because some shellfish can readily accumulate hydrocarbons, subsistence users have been advised not to eat shellfish from beaches where oil can be seen or smelled on the surface or subsurface. By 1998, a large majority of those interviewed expressed confidence about most foods except certain shellfish, such as clams, and concerns about the presence of PSP (paralytic shellfish poisoning) in clams outweighed concerns about lingering hydrocarbon contamination from the oil spill.

Interviews indicate that the increased fish consumption is attributable in part to enhancement projects funded by the Trustee Council, including a chinook remote release project near Chenega Bay, a coho remote release project near Tatitlek, stream enhancement efforts near Port Graham, and support of broodstock development at the Port Graham hatchery. In addition, the State of Alaska has used a portion of its funds from the criminal settlement with Exxon to sponsor a sockeye salmon enhancement project near Nanwalek. The Trustee Council's clam project, which is designed to restore clam populations near subsistence communities in lower Cook Inlet and Prince William Sound, is still in the trial phase and has not yet produced any clams for harvest.

Subsistence users continue to emphasize that the value of subsistence cannot be measured in pounds alone. Harvest levels do not encompass the cultural value of traditional and customary use of natural resources. Following the oil spill, there was concern that the spill disrupted opportunities for young people to learn subsistence culture, and that this knowledge may be lost to them in the future. In 1998, the number of subsistence users reporting a decline in the influence of elders in teaching subsistence skills and values had decreased and the number reporting that young adults are learning enough subsistence skills had increased. Also, the number reporting less sharing of subsistence resources, another integral aspect of subsistence culture, had decreased. However, many of those interviewed continue to express concern about these elements of the traditional lifestyle, with more than 50 percent responding that the traditional way of life has not recovered since the spill.

To promote restoration of subsistence services, the Trustee Council has sponsored two Elders/Youth Conferences and production of two documentaries (one focusing on harbor seals, one on herring and other resources in the nearshore ecosystem) designed to transmit local knowledge of subsistence to the scientific community and decision makers. In addition, in 1993 the Council provided funds for construction of the Alutiiq Archaeological Repository in Kodiak and in 1999 is providing funds for an archaeological repository and local display facilities in the Prince William Sound/lower Cook Inlet region. The State of Alaska has used a portion of its Exxon criminal settlement funds for "spirit camps" in Prince William Sound and on Kodiak Island.

In the 1998 household interviews, a number of subsistence users commented that some of the current influences on subsistence may not be attributable to the oil spill. Factors such as demographic changes in village populations, ecosystem-wide changes such as ocean warming, increased competition for subsistence resources by other people (e.g., sport fishing charters) and predators (e.g., sea otters), and increased awareness of PSP and other contaminants may play a role in resource availability, food safety, and participation in traditional practices.

Recovery Objective

Subsistence will have recovered when injured resources used for subsistence are healthy and productive and exist at prespill levels. In addition, there is recognition that people must be confident that the resources are safe to eat and that the cultural values provided by gathering, preparing, and sharing food need to be reintegrated into community life.

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax: 907/276-7178

February 1999

Dear Reader,

In January you received the Trustee Council's draft update on injured resources. This document contains the Council's draft update on lost or reduced services: subsistence, commercial fishing, recreation and tourism, and passive use. The Council intends to act on the changes proposed in this update in advance of the 10-year observance of the oil spill, March 23, 1999, and invites public comment on this document. Please submit written comments to: ***Exxon Valdez* Oil Spill Trustee Council, Attention: Recovery Updates, 645 G Street, Suite 401, Anchorage, Alaska 99501** (e-mail: restoration@oilspill.state.ak.us). To be most helpful, comments should be received by **February 26, 1999**. In addition, testimony will be accepted at a **Trustee Council meeting in Anchorage on March 1, 1999**. You can testify by teleconference by making arrangements in advance with the Restoration Office (907-278-8012 or 800-478-7745).

Sincerely,

Molly McCammon

Molly McCammon
Executive Director

Exxon Valdez Oil Spill Trustee Council

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EXXON VALDEZ OIL SPILL RESTORATION PLAN

Update on Human Services

February 1999

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
645 G Street, Suite 401, Anchorage, AK 99501
907-278-8012 800-478-7745 (in Alaska) 800-283-7745 (outside Alaska)

COMMERCIAL FISHING - *RECOVERING*

Injury and Recovery

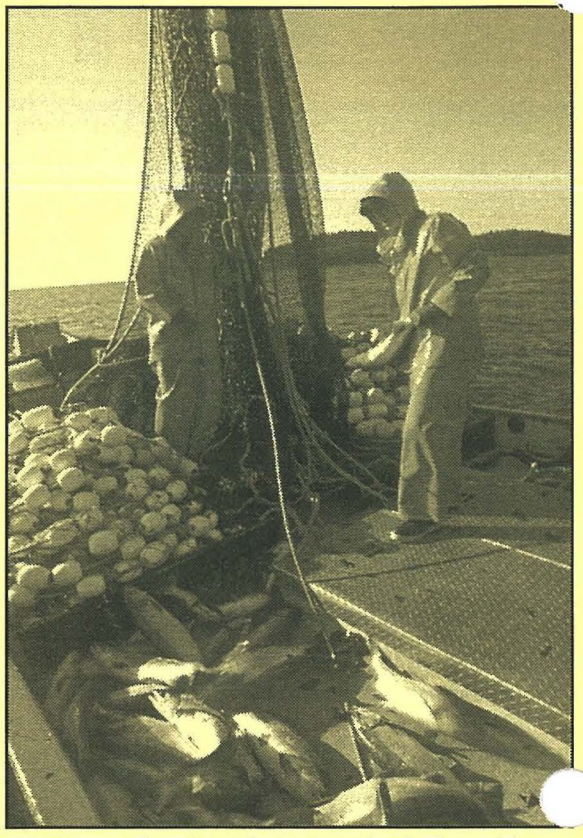
Commercial fishing is a service that was reduced through injury to commercial fish species (see individual resource accounts) and also through fishing closures. In 1989, closures affected fisheries in Prince William Sound, Cook Inlet, the outer Kenai coast, Kodiak, and Chignik. These closures harmed the livelihoods of persons who fish for a living.

Recovery is underway but not complete for three of the injured resources that are commercially fished — pink salmon, sockeye salmon, and Pacific herring; the recovery status of rockfish is unknown. No spill-related district-wide fishery closures related to oil contamination have been in effect since 1989. However, the Prince William Sound herring fishery was closed 1993-96 due to a disease outbreak that may be related to the oil spill, and was open only to limited commercial harvest in 1997 and 1998. **For these reasons, commercial fishing, as a lost or reduced service, is in the process of recovering from the effects of the oil spill, but full recovery has not been achieved.**

The period before the oil spill was a time of relative prosperity for many commercial fishermen. The years 1987-88 saw some of the highest ever per pound prices for salmon and increased capitalization of the fishery. Thus, fishermen's expectations for income in 1989 were very high, making the fishery closures and other spill effects even more disruptive.

For a variety of reasons, as discussed below, income disruptions continue today, as evidenced by changes in average earnings, ex-vessel prices, and limited entry permit values. For example, for the period 1981-97, fishermen's average earnings in the Prince William Sound salmon seine fishery peaked in 1987-88, dropped in 1989 to 1984-85 levels, rebounded in 1990, hit a new low in 1992-93 (runs in 1992-93 were the lowest in 15 years), and since have hovered somewhat below the 1989 level. Average harvests have varied widely during this period, with the three highest years being 1994, 1996, and 1997. Ex-vessel prices were highest in the period 1987-89, and have been below prices of the early 1980's ever since. Limited entry permit values in this fishery reached a peak in 1989-91, nearly double the value in any earlier year in this period, and have declined since to roughly 15 percent of their peak value. The number of permits fished, roughly 250 each year 1981-91, had declined to 114 in 1997.

Natural variability in fish returns and a number of economic changes in the commercial fishing industry since 1989 probably mean that many of these changes in income are not directly attributable to the spill. However, these factors also make discerning spill-related impacts difficult. Economic changes confronting the industry include the increased world supply of salmon (due primarily to farmed salmonids) and corresponding reduced prices, entry restrictions in certain fisheries (such as Individual Fishing Quotas, IFQs, for halibut and sablefish), allocation changes (e.g., a reduction in the allocation of Cook Inlet sockeye salmon to commercial fishermen), and changes in processing capacity (closure of major processors in Cordova and Kenai and introduction of some smaller and more specialized processors).



Recovery is underway but not complete for three of the injured resources that are commercially fished — pink salmon, sockeye salmon, and Pacific herring.

Although a number of studies aimed at allocating financial impacts to the oil spill versus other factors have been carried out, the federal jury's compensatory award (as opposed to the $5 billion in punitive damages) in the private lawsuit against Exxon is the current legal determination of the liability and damages regarding commercial fishermen (including permit holders, fishing crew, spotter pilots, and vessel owners). The jury award, which is currently under appeal by Exxon, is less than the damage claimed by commercial fishermen and more than that acknowledged by Exxon. In brief, the jury determined that any financial effects on fishermen after 1989, with the exception of the salmon seine fishery in Prince William Sound in 1992-93 and the herring fishery in Prince William Sound in 1993, are not attributable to the spill. The jury considered damage claims for the period 1989-95, including claims related to size of harvest, fish prices, limited entry permit values, and vessel values.

Trustee Council scientists have documented some continuing biological injury to pink salmon, sockeye salmon, and herring (see individual resource accounts). It is not clear to what extent these continuing injuries might be affecting commercial fishing.

The Trustee Council has invested and continues to invest in projects to understand and restore commercially important fish species that were injured by the oil spill. These projects include enhancement work, such as fertilizing Coghill Lake to produce sockeye salmon, reconstructing the fish ladder at Little Waterfall Creek to improve access to good spawning habitat for pink and coho salmon, and excavating Port Dick Creek to reclaim spawning habitat for pink and chum salmon. Projects have also been funded to develop tools that have almost immediate benefit for fisheries management, such as otolith mass marking of pink salmon in Prince William Sound, improved assessment methods for determining herring biomass, and in-season genetic stock identification for sockeye salmon in Cook Inlet. In addition, the Council continues to fund research projects, such as the Sound Ecosystem Assessment and genetic mapping which will enhance the ability to predict and manage fisheries over the long-term, and studies to determine how disease is affecting recovery of the herring population in Prince William Sound and what factors might trigger outbreak.

In addition, the Trustee Council's habitat program has protected roughly 640,000 acres important for restoration, including at least 287 streams valuable for salmon spawning and rearing and 1,400 miles of coastline. Researchers in the Pacific Northwest have concluded that depleted salmon populations cannot rebuild if any habitat that is critical during any of their life stages is seriously compromised. Sockeye salmon, too, have benefitted from the Council's habitat program, which has protected streambank, lakeside, and watershed habitats on the Kenai Peninsula, in Prince William Sound, and on Kodiak and Afognak islands. The Council has also provided funds to stabilize and restore degraded streambanks along the Kenai and Russian rivers.

Recovery Objective

Commercial fishing will have recovered when the commercially important fish species have recovered and opportunities to catch these species are not lost or reduced because of the effects of the oil spill.

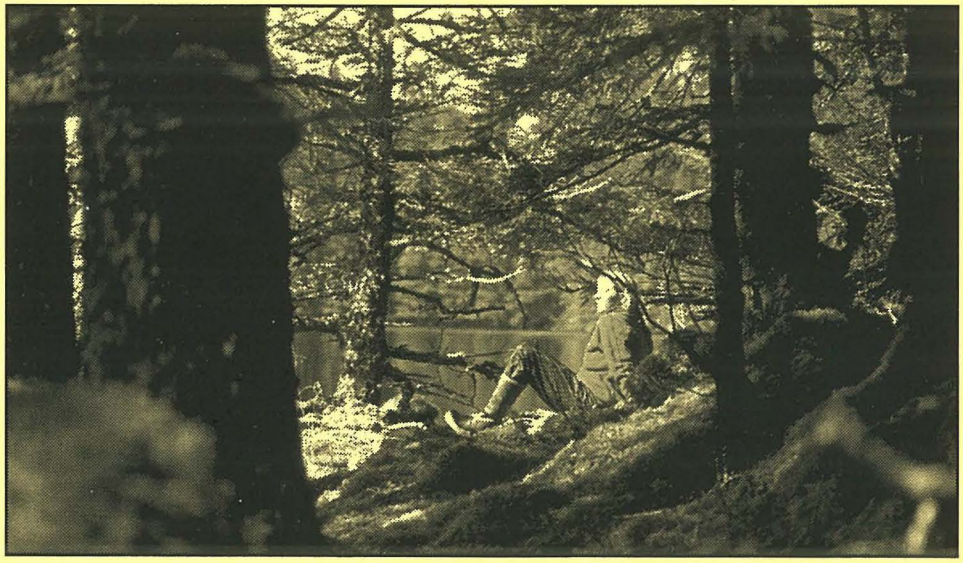
Passive Use - *Recovering*

Passive use encompasses nonuse values, such as the appreciation of the aesthetic and intrinsic values of undisturbed areas and the value derived from simply knowing that a resource exists. Injuries to passive use are tied to public perceptions of injured resources. **Because recovery of a number of injured resources is incomplete and in some cases has not begun, the Trustee Council considers passive use, as a lost or reduced service, to be recovering from the spill but not fully recovered.**

Immediately following the oil spill, the State of Alaska, using a contingent valuation approach, measured substantial losses of passive use values resulting from the spill. This approach involved surveying a sample of U.S. households to elicit how much people would be willing to pay in additional taxes to fund a program designed to prevent future spills. Prior to answering the survey questions, respondents were provided information about the spill's impact, including the number of miles of shoreline oiled, an estimate of the number of birds, sea otters, and harbor seals killed, and the conclusion that few fish were harmed, as well as projections of when recovery would occur (typically three to five years).

In updating the status of passive uses ten years after the spill, the Trustee Council has chosen not to repeat the contingent valuation study, which was very expensive and time consuming. However, the key to recovery of passive use is knowing that restoration of injured resources has occurred. Toward this end, in the years since the settlement between Exxon Corporation and the state and federal governments, the Council has undertaken a comprehensive program to restore injured resources and has made a deliberate and consistent effort to inform the public about the status of restoration.

The two key components of the Trustee Council's restoration effort are the research, monitoring, and general restoration program and the habitat protection and acquisition program. The research, monitoring, and restoration program, which is funded each year through the annual work plan, focuses mostly on knowledge and stewardship as the best tools for long-term health of the marine ecosystem. It also includes development of tools to benefit fisheries management and some direct enhancement activities, such as improving access to spawning habitat. Projects to monitor the status of injured resources, including resources such



The key to recovery of passive use is knowing that restoration of injured resources has occurred. Therefore, recovery of passive use is underway, but not complete.

as killer whales for which no active restoration may be possible, are also funded through the annual work plan. The habitat protection program preserves habitat important to injured resources through the acquisition of land or interests in land. As of December 1998, the Council has protected over 640,000 acres of habitat, including more than 1,400 miles of coastline and at least 287 streams valuable for salmon spawning and rearing. A summary of the Council's public information efforts follows.

The Trustee Council maintains a mailing list of roughly 3,000 people and organizations, both inside and outside of Alaska, to whom it sends the *Restoration Update*, its bimonthly newsletter; annual work plans, which describe the work underway in a particular year to restore the injured resources and services; the *Annual Status Report*, which reports to the public on the progress of restoration; updates to the Restoration Plan (1996, 1999); and notice of the Council's annual restoration workshop. The workshop, which provides another venue for reporting on the progress of restoration, is attended by all EVOS researchers and open to the news media and public.

In addition, from 1996 through early 1999 the Council aired a weekly radio series, "Alaska Coastal Currents", throughout the state. This two-minute program, produced by the Alaska Public Radio Network, was designed to communicate news of marine science and other restoration activities. A weekly newspaper column, based on the radio series, has been in print since June 1997.

Also in 1997, the Trustee Council established a web site (www.oilspill.state.ak.us), which offers detailed information about restoration efforts. A number of individual projects funded by the Council have their own web sites. The Council began publication of its Restoration Notebook series in 1997 as well. This series, which tells the story of injury and recovery from the spill of select injured species, is written by EVOS researchers. It is distributed free upon request, and is suitable for highschool age and older.

Another important means of informing the public are the written reports the Trustee Council requires for all restoration projects. These reports, which are peer reviewed by independent scientific peer reviewers, are available to the public through the Council's Oil Spill Public Information Center (now part of the Alaska Resource Library and Information Services, ARLIS) in Anchorage as well as at several other libraries in the state, at the Library of Congress, and through NTIC (National Technical Information Services). ARLIS also houses books, videotapes, maps, and other materials related to the oil spill, a listing of which is available online at //library.ci.anchorage.ak.us/arlis.html. In addition, the Council supports researchers in publishing their project results in the peer-reviewed scientific literature, which expands their audience well beyond Alaska. More than 270 such papers have been published as of February 1999.

The 17-member Public Advisory Group (PAG), which was established in the civil settlement between Exxon Corporation and the state and federal governments, is an important means of keeping stakeholders and others informed of the progress of restoration. In addition to holding quarterly meetings with the Trustee Council staff, each year the PAG holds an open house in one or more communities in the spill area. Additional public meetings are held throughout the spill area each year by the Council and its staff. All meetings of the Council are widely advertised and opportunity for public comment, often via the teleconference network, is always provided. Press releases are issued following major actions of the Council.

In 1998-99, in preparation for the tenth anniversary of the spill, the Trustee Council has stepped up its efforts to inform the public about the status of restoration. A visual exhibit on restoration activities was produced for travel to spill area communities. Another exhibit is on display at the Alaska SeaLife Center in Seward. The Council's 1999 restoration workshop has been expanded to a major scientific symposium on what has been learned and accomplished in the restoration process. A 30-minute video has been produced for airing on public television in Alaska and for distribution to every school in the state.

In addition, a concerted effort by Trustee Council staff to interest national and international media in the 10th anniversary of the spill has resulted in numerous contacts. Major stories are expected in National Geographic Magazine, Alaska Geographic, Outside Magazine, Sports Afield and several other magazines in spring 1999. Several newspapers, including the Boston Globe, the Philadelphia Inquirer, and the Seattle Times, also have major stories in the works. A source reel prepared by the Council and containing three hours of footage related to restoration activities has been distributed, upon request, to a number of media outlets (ABC, CBS, CNN, and others) and documentary filmmakers.

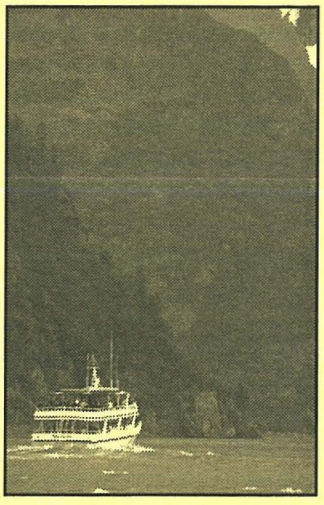
Recovery Objective

Passive uses will have recovered when people perceive that aesthetic and intrinsic values associated with the spill area are no longer diminished by the oil spill.

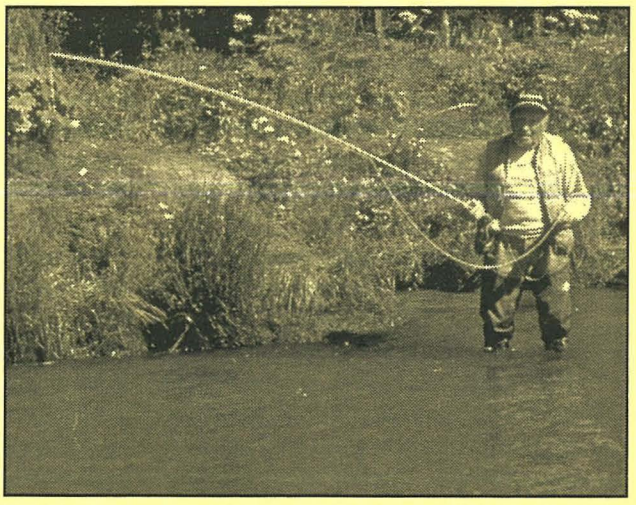
This publication was released by the Exxon Valdez Oil Spill Trustee Council and produced at a cost of $0.40 per copy.

Injury and Recovery

The oil spill disrupted use of the spill area for recreation and tourism. In the years since the spill, there has been a marked increase in the number of visitors to Alaska — from approximately 600,000 in the summer of 1989 to over 1.1 million in the summer of 1997 — and a similar increase in visitation to the spill area. For example, in 1997 the number of visitors to the Kenai Fjords National Park Visitor Center was nearly double what it was in 1989. In 1998, the number of visitors to the USFS Crooked Creek Visitor Information Center in Valdez was almost 50% greater than in 1989. From 1989 to 1997, the number of sportfishers increased by 65% in Prince William Sound, by 25% in the Kodiak Region, and by 15% in the Kenai Peninsula region.



Wildlife tours in Kenai Fjords National Park



Recreation includes sport fishing, sport hunting, camping, boating, hiking and other active outdoor pursuits.

However, the Trustee Council's recovery objective requires that the injured resources important to recreation be recovered and recreational use of oiled beaches not be impaired, and this objective has not been met. **Therefore, the Council finds recreation to be recovering from the effects of the spill, but not fully recovered.**

Several resources important for wildlife viewing still are not recovered from the spill or their recovery is unknown, including killer whale, harbor seal, common loon, cormorant (three species), Kittlitz's murrelet, and pigeon guillemot. Others resources, including sea otter, common murre, black oystercatcher, and marbled murrelet are recovering. The bald eagle, another resource important for wildlife viewing, has recovered from the effects of the spill. (See individual resource accounts for more information on recovery status.)

Telephone interviews were conducted in early 1999 with key informants who recreated extensively in the oil spill area before the spill and currently. Nearly all of the key informants with experience in Prince William Sound continued to report diminished wildlife sightings in the sound, particularly in heavily oiled areas such as around Knight Island. They reported seeing significantly fewer seabirds, killer whales, sea lions, seals, and sea otters since the spill, but also reported observing increases in the number of seabirds in the last couple of years. Key informants also reported diminished sightings of seabirds, seals, and sea lions along the outer Kenai coast. Changes in the amount of wildlife observed could be due to the oil spill or to other factors.

Sportfishing resources which are still injured by the spill or for which the recovery status is unknown are cutthroat trout, Dolly Varden, and rockfish. In 1991-93, in response to evidence of injury to cutthroat trout, sport harvests were temporarily restricted in Prince William Sound. A closure during the April 15-June 15 spawning season in the sound has been in effect since 1994; this closure reflects concern about the long-term conservation status of cutthroat trout, rather than specific spill-related concerns. The salmon species that were injured (pink and sockeye salmon) are recovering from the effects of the spill.

Harlequin ducks, which are hunted in the spill area, are still not recovered. The Alaska Board of Game restricted sport harvest of harlequin ducks in western Prince William Sound and Kenai Fjords in 1991. Those restrictions remain in place, but are currently under review and may be modified.

Trustee Council-sponsored surveys of oiled shorelines indicate that residual oil is still present on some beaches. The most recent survey in Prince William Sound (1993) found surface oil in 217 scattered locations along a total of 4.8 kilometers of shoreline and subsurface oil in 109 locations along a total of 7 kilometers of shoreline; sheening was apparent at many sites. The most recent survey of the Kenai outer coast and the coast of Katmai National Park (1994) found oil mousse persisting in a remarkably unweathered state on five moderately-to-heavily-oiled boulder-armored beaches. A survey of 30 oiled sites in the Kodiak Archipelago in 1995 found no oil or only trace amounts. The Katmai/Kenai Fjords shoreline survey will be repeated in the summer of 1999; the Prince William Sound survey likely will be repeated in 2001 or 2002.

Key informants telephoned in early 1999 indicated that some beaches in Prince William Sound, particularly in the western portion of the sound, continue to be avoided by some recreational users, particularly kayakers and campers, because of the presence of residual oil. Informants indicated that the possible presence of residual oil currently has no effect on recreational activities along the outer Kenai coast, the Kodiak Archipelago,

and the Lake Clark and Katmai national park coastlines.

In 1997, the Trustee Council provided funding for the residents of Chenega Bay, working with the Department of Environmental Conservation, to use PES-51, a citrus-based chemical agent, to clean some of the most heavily-oiled sites near their village. One year later, preliminary analysis showed that the cleanup method was largely effective in removing the visible surface oil at treated sites, although considerable subsurface oil remains. NOAA's Auke Bay Lab found no biological injury due to the cleanup.

Recreational users have benefitted greatly from the Trustee Council's large parcel habitat acquisition program, which is opening more than 1,300 miles of shoreline and 280 salmon streams to public use. Several smaller acquisitions have specific recreational significance, such as the Overlook Park tract near Homer and the Lowell Point parcel in Seward. In addition, in an effort to preserve the world-class fisheries on the Kenai River, the Council is in the process of protecting roughly 1,800 acres along the river and its watershed and has contributed nearly $2 million to riverbank restoration projects.

Recreation was also affected by changes in human use in response to the spill. For example, displacement of use from oiled areas to unoiled areas, particularly in the years immediately following the spill, increased management problems and facility use in unoiled areas. The State of Alaska dedicated over $10 million of its criminal settlement with Exxon to restoring recreational facilities and use in state parks in the spill ar[illegible] Improvements include trails, cabins, bo[illegible] launches, interpretive displays, and campsites. In addition, the Trustee Council has funded U.S. Forest Service development of a human use model for western Prince William Sound, which is intended to aid planning for and mitigation of human uses so that injured species continue to be protected. The model may also assist in planning for future recreation needs in the sound.

Recovery Objective

Proposed Revision: Recreation and tourism will have recovered, in large part, when the fish and wildlife resources on which they depend have recovered and recreation use of oiled beaches is no longer impaired.

SUBSISTENCE - *RECOVERING*

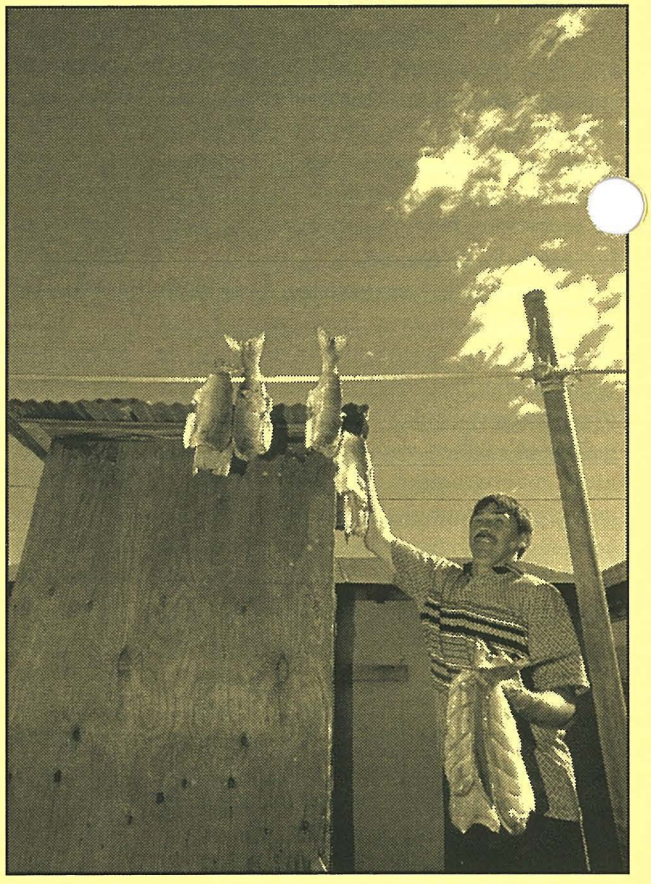
Injury and Recovery

Fifteen predominantly Alaskan Native communities (with a total population of about 2,200 people) in the oil-spill area rely heavily on harvests of subsistence resources, such as fish, shellfish, seals, deer, and waterfowl. Many families in other communities also rely on the subsistence resources of the spill area.

Household interviews conducted with subsistence users in communities throughout the spill area in 1989 indicated that subsistence harvests of fish and wildlife in most of the communities declined substantially following the spill. Key factors in the reduced harvests included reduced availability of fish and wildlife, concern about possible health effects of eating oiled fish and wildlife, and disruption of the traditional lifestyle due to cleanup and related activities. Household interviews were repeated each year 1990-1993 and again in 1998. By 1993, the estimated size of the subsistence harvest and participation in subsistence activities appeared to have returned to prespill levels in some communities, with the harvest rebounding first in the communities of the Alaska Peninsula, Kodiak Island, and the lower Kenai Peninsula and lagging behind a year or more in the Prince William Sound communities.

In 1998, interviews indicated that subsistence continues to recover from the effects of the oil spill, but has not fully recovered. The percentage of those interviewed who reported that subsistence uses are lower than before the spill has declined. Concerns about food safety and effects on the traditional lifestyle have lessened. Concerns about resource availability remain, but harvest levels in all communities interviewed are at or approaching prespill levels. Subsistence harvests in 1998 varied among communities from 250-500 pounds per person usable weight, indicating continued strong dependence on subsistence resources.

Regarding resource availability, subsistence users continued to report scarcity of a number of important subsistence resources, including harbor seals, herring, clams, and crab. These observations



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According to those interviewed, the 1998 increase in pounds harvested at a time of continued reduced resource availability reflects greater harvest effort (traveling farther, spending more time and money) than would have been required before the spill to achieve a similar harvest. It also reflects increased reliance on fish in the subsistence diet. For example, 1998 interviews in Chenega Bay indicated reductions in the per capita pounds harvested of marine mammals (from 140 pounds pre-spill to 15 pounds in 1998) and a corresponding increase in the per capita pounds harvested of salmon (from 70 pounds pre-spill to 225 pounds in 1998). In many communities, shellfish harvests have also declined significantly, for example Nanwalek from 16 pounds pre-spill to 9 pounds in 1998. Increased fish harvests and decreased marine mammal and shellfish harvests occurred in most communities where interviews were conducted. The cultural and nutritional importance of each resource varies, and these changes in diet composition remain a serious concern to subsistence users.

The decline in shellfish consumption noted above reflects food safety concerns as well as reduced availability of shellfish. From 1989-94, subsistence foods were tested for evidence of hydrocarbon contamination, with no or very low concentrations of petroleum hydrocarbons found in most subsistence foods. However, because some shellfish can readily accumulate hydrocarbons, subsistence users have been advised not to eat shellfish from beaches where oil can be seen or smelled on the surface or subsurface. By 1998, a large majority of those interviewed expressed confidence about most foods except certain shellfish, such as clams, and concerns about the presence of PSP (paralytic shellfish poisoning) in clams outweighed concerns about lingering hydrocarbon contamination from the oil spill.

Interviews indicate that the increased fish consumption is attributable in part to enhancement projects funded by the Trustee Council, including a chinook remote release project near Chenega Bay, a coho remote release project near Tatitlek, stream enhancement efforts near Port Graham, and support of broodstock development at the Port Graham hatchery. In addition, the State of Alaska has used a portion of its funds from the criminal settlement with Exxon to sponsor a sockeye salmon enhancement project near Nanwalek. The Trustee Council's clam project, which is designed to restore clam populations near subsistence communities in lower Cook Inlet and Prince William Sound, is still in the trial phase and has not yet produced any clams for harvest.

Subsistence users continue to emphasize that the value of subsistence cannot be measured in pounds alone. Harvest levels do not encompass the cultural value of traditional and customary use of natural resources. Following the oil spill, there was concern that the spill disrupted opportunities for young people to learn subsistence culture, and that this knowledge may be lost to them in the future. In 1998, the number of subsistence users reporting a decline in the influence of elders in teaching subsistence skills and values had decreased and the number reporting that young adults are learning enough subsistence skills had increased. Also, the number reporting less sharing of subsistence resources, another integral aspect of subsistence culture, had decreased. However, many of those interviewed continue to express concern about these elements of the traditional lifestyle, with more than 50 percent responding that the traditional way of life has not recovered since the spill.

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Recovery Objective

Subsistence will have recovered when injured resources used for subsistence are healthy and productive and exist at prespill levels. In addition, there is recognition that people must be confident that the resources are safe to eat and that the cultural values provided by gathering, preparing, and sharing food need to be reintegrated into community life.

Exxon Valdez Oil Spill Trustee Council

645 G Street, Suite 401, Anchorage, AK 99501-3451 907/278-8012 fax: 907/276-7178

February 1999

Dear Reader,

In January you received the Trustee Council's draft update on injured resources. This document contains the Council's draft update on lost or reduced services: subsistence, commercial fishing, recreation and tourism, and passive use. The Council intends to act on the changes proposed in this update in advance of the 10-year observance of the oil spill, March 23, 1999, and invites public comment on this document. Please submit written comments to: ***Exxon Valdez* Oil Spill Trustee Council, Attention: Recovery Updates, 645 G Street, Suite 401, Anchorage, Alaska 99501** (e-mail: restoration@oilspill.state.ak.us). To be most helpful, comments should be received by **February 26, 1999**. In addition, testimony will be accepted at a **Trustee Council meeting in Anchorage on March 1, 1999**. You can testify by teleconference by making arrangements in advance with the Restoration Office (907-278-8012 or 800-478-7745).

Sincerely,

Molly McCammon

Molly McCammon
Executive Director

Exxon Valdez Oil Spill Trustee Council

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