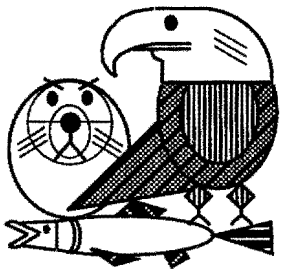
13.08.01 October 1994 (1 of 2)

13.08.01 - Reading File

October 1994

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



October 26, 1994

Paul Swartzbart
Alpine Charters
POB 233
Cordova Alaska 99574

Dear Mr. Swartzbart:

Thank you for your letter of October 17, 1994. I have been requested to respond to your letter on behalf of the Trustee Council.

As you know, the Trustee Council took action on May 3 to protect lands around Cordova owned by Eyak/Sherstone Corporations. The Trustee Council and representatives of Eyak/Sherstone are now discussing the details of an additional proposal for protection of Eyak lands as part of the Council's comprehensive habitat protection process.

This proposal was discussed with the Trustee Council during the October 5 Trustee Council meeting. The petition you refer to was distributed at that meeting. I can assure you that your comments, as well as those of the Cordova residents who signed the petition, have been and will continue to be considered as these discussions progress.

On October 7 the Trustees did reaffirm their May rejection of the Eyak and Sherstone comprehensive proposal because the proposal does not provide adequate legal assurance of the long-term habitat protection necessary for restoration. We have made Eyak a counter offer because we are just as concerned about providing habitat protection as those who have written in support of reaching an agreement with Eyak. However, it would be irresponsible to invest the public's money in the May 24th proposal without adequate assurance that restoration goals will be achieved or pursued. As you note in your letter, these negotiations can be difficult.

Thank you again for your continued interest in the *Exxon Valdez* Trustee Council actions. I can assure you that the Trustees are very aware of the interest Cordova has in this process.

Sincerely,

James R. Ayers
Executive Director

cc: Trustee Council, & Cordova Petitioners

jra/raw

fax 586-7089

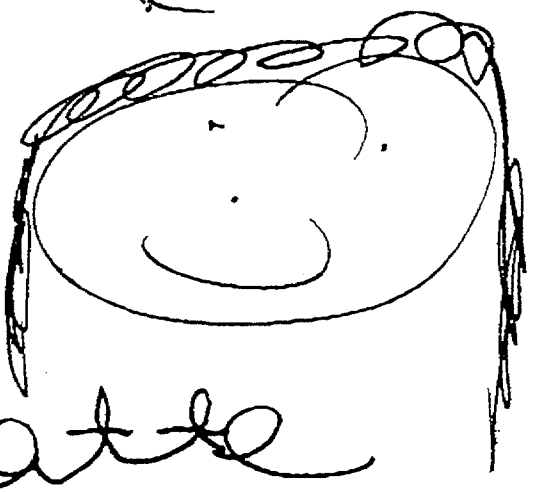
TO: Jim Ayers - G.D EVOS
Trustee Council

FR: The people of Cordova

RE: habitat acquisition deal with Eyak

Please see to it that these petitions are put in front of the Trustee Council this morning before they consider the Eyak deal—

Please



Charlotte

PETITION URGING IMMEDIATE ACTION ON A COMPREHENSIVE HABITAT PROTECTION PLAN FOR THE CORDOVA AREA

We, the undersigned, strongly endorse the immediate adoption of a comprehensive plan to protect the coastal rainforest in the Cordova area. The coastal rainforest ecosystem supports fisheries, wildlife resources, tourism, and recreational services all of which play an important role in Cordova's future. Many people live in Cordova because of their enjoyment of wildlands, pristine productive streams, and the opportunities provided by these resources.

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In order to come to closure, we urge the trustee council to accept a proposal offered by the Eyak and Sherstone Corporations that offers the most comprehensive protection to Eyak lands. We feel strongly that some protection is better than no protection at all.

Signature	Print Name	Residence
Chuck Shupp	Chuck Shupp	Cordova, AK
Steve Graves	STEVE GRAVES	Cordova, Ak
Judy Motonaga	Judy Motonaga	Box 1672 CDV.
Elaine Zeine	Elaine Zeine	Box 34 CDV
[illegible]	Per Nolan	Box 924 CDV AK
Jack Joslin	John L. Joslin	Bx980 Cdo AK
John Anderson	John Anderson	Box 333 CDV
Stephen Barnes	Stephen BARNES	Box 332 CDV AK
Wendy L Weisel	Wendy L. Weisel	PO Box 1889 CDV AK
Mark King	Mark King	Box 965 CDV. Ak
[illegible]	LYNN MALLARD	BOX 206 CORDOVA
[illegible]	[illegible]	[illegible]

Patty Murphy	Patty Murphy	764	CDV
Tina Hammer	Tina Hammer	Bx 43	Cordova
Clara Poelke	Clara Poelker	825	CDV
Deborah Eckley	Deborah A Eckley	1274	CDV
Robert R. Eckley	ROBERT RALPH ECKLEY	1274	CDV. AK.

Michael Gaudlitch	Michael Gaudlitch	1206	CDV
Lisa Schultz	LISA SCHULTZ	1291	CDV
Jeannine Butler	Jeannine Butler	1051	CDV
John Lewis	John Lewis	60	CDV
Loreen Pollard	LOREEN POLLARD	CDV	99574
Jay Beaudin	Jay Beaudin	CDV	99574
Stanley Makarka	P.O. Box 452		7390
Laurie Udari	P.O Box 872	CDV.	7752
Rick Jones	Box 1244	CDV.	
Roger Dunbar	Roger Dunbar	Box 395	Cordova 99574

PETITION URGING IMMEDIATE ACTION ON A COMPREHENSIVE HABITAT PROTECTION PLAN FOR THE CORDOVA AREA

11/9 10:30

Keri -

This ltr needs to be copied & sent to each person who signed the petition. There are some duplicate signatures, so beware :: OSPIC has a letter folder we can borrow, its real cool! This should be done ASAP.

thx R.

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Glen "Dave" Lankard Jr.	Glen E. Lankard Sr.	305 Browning CORDOVA
Judy Lietzau	JUDY LIETZAU	930 Center Dr. Cdv.
[illegible]	LUKE BAUER	BOX 340 CORDOVA, AK
Brian Lettich	Brian Lettich	Box 2406 Cordova
Marg K Johnson	MARGY K JOHNSON	401 Railroad Ave. Cordova
Angela R. Luck	Angela R. Luck	Box 566 Cdv.
Virginia L. Humes	VIRGINIA L HUMES	Box 456, Cordova
Warren K. Rogers	WARREN ROGERS	Po Box 1481 Cordova Alk
Guy Beedle	Guy Beedle	PO Box 2234
Elke Hagmüller	Elke Hagmüller	Box 2325 Cordova
[illegible]	J.C. Rainey	PO. Box 1656 Cordova, AK
[illegible]	Debra Adams	Box 194 Cordova
Carolyn Roesbery	CAROLYN ROESBERY	BX 1512 CORDOVA, AK
Kristen Smith	Kristen Smith	Box 1252 Cordova AK
Wally Kompkoff	WALLY KOMPKOFF	BX 2166 "
Wayne Donaldson	Wayne Donaldson	Box 1804 CORDOVA
Eleanor Muma	Eleanor Muma	" 572 Cordova
Chuck Roemhildt	Chuck Roemhildt	" 331 Cordova

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Don "Dave" Lankard Jr.	Glenn E. Lankard Sr.	305 Browning CORDOVA
Judy Lietzau	Judy Lietzau	930 Center Dr. Cdv.
Luke Bauer	Luke Bauer	Box 340 CORDOVA, AK
Brian Letthed	Brian Letthed	Box 2406 Cordova
Marcy K Johnson	MARCY K JOHNSON	401 Railroad Ave. Cordova
Angela R. Luck	Angela R. Luck	Box 5666 Cdv.
Virginia L. Humes	VIRGINIA L. HUMES	Box 456, Cordova
Warren K. Rogers	WARREN ROGERS	Po Box 1481 Cordova AK
Guy Beedle	Guy Beedle	Box 2234
Elke Hagmüller	Elke Hagmüller	Box 2325 Cordova
Jeff Rainey	Jeff Rainey	PO Box 1656 CORDOVA, AK
Debra Adams	Debra Adams	Box 194 Cordova
Carolyn Roesbery	CAROLYN ROESBERY	BX 1512 CORDOVA, AK
Kristen Smith	Kristen Smith	Box 1252 Cordova AK
Wally Kompkoff	WALLY KOMPKOFF	BX 2166 "
Wayne Donaldson	Wayne Donaldson	Box 1804 CORDOVA
Eleanor Muma	Eleanor Muma	" 572 Cordova
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Judy Lietzau	Judy Lietzau	930 Center Dr. Cdv
L Borer	Luke Borer	Box 340 Cordova, AK
Brian Lettich	Brian Lettich	Box 2406 Cordova
Margy K Johnson	MARGY K. JOHNSON	401 Railroad Ave - Cordova
Diane Phipps	DIANE PHIPPS	1013 Young Dr., Cordova
Jon Bayer	JON BAYER	1415 Orca St., Anchorage, A
Charles E Trowbridge	Charles E. Trowbridge	Box 1744 Cordova
Evelyn M Brown	Evelyn Brown	Box 306 "
James A Brown	James A. Brown	Box 1049 "
Michelle L Hahn O'Leary	Michelle L. Hahn O'Leary	Box 1052 City
Lynn Hopkins		
Randy O. Barnes	Randy D. Barnes	Box 1641 Cordova, AK.
Jack P Jensen	JACK P. JENSEN	Box 1265 Cordova, AK
Christin & West Hite		Box 2382 Cordova AK 99574
Cari Harmon	Cari Harmon	BX 135 CDO. AK
Kimberley A Eaton	Kim Eaton	Bx 901 Cdv AK

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Luke Barber	Luke Barber	Box 340 Cordova, AK
Brian Lettich	Brian Lettich	Box 2406 Cordova
Marcy K Johnson	MARCY K JOHNSON	401 Railroad Ave. Cordova
Michael O'Leary	Michael O'Leary	Mile 1 Whitshed Rd Eccles Lag.
Linden O'Toole	Linden O'Toole	2207 Powers Cr. Rd. Cordo.
Robert E Maxwell	Robert Maxwell	Box 349 Cordova
Paul Swartzbart	PAUL SWARTZBART	Box 233 CORDOV
Wm R Reid	William R REID	Bx 1234 CDV
Joe Cook	Joe Cook	Box 215 CDV AK
Helen Cook	Helen Cook	Box 215 Cordova AK
Thomas McGann	THOMAS McGANN	BX 1622 CORDOVA
Patti Kallander	Patti Kallander	Box 1212 Cdv
Dyan Perren	DYAN PERREN	Box 2603 CDV
Bud Perrine	Bud Perrine	Box 1141 Cordova
Stuart L Deal	STUART L DEAL	
CE Stack	CECE STACK	BOX 565 CORDOVA

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[illegible]	Luke Borer	Box 340 Cordova, AK
Brian Lethcoe	Brian Lethcoe	Box 2406 Cordova
Margy K Johnson	Margy K Johnson	401 Railroad Ave. Cordova
[illegible]	David K Salmon	801 Lake Ave Cordova
Paul Salmonie	Paul Salmonie	300 Breakwater Ave Cordova
Gene McBride	Gene McBride	Box 654 Cordova AK
Michel D DiChiara	Michel D DiChiara	Box 74 CDV
[illegible]	D.K. Clut	Box 578 Cdv
Peter D Ochs	Peter Ochs	Bx 441 Cdv
[illegible]	Lynn West	Box 415
Jeff P Hawley	Jeff P. Hawley	Box 2308 CDV.
John Nichols	John Nichols	Box 1752 CDV
Marie A Nichols	Marie Nichols	Box 1752 CDV
Greg Parker	Greg Parker	Box 985 CDV
J Allen	Jennifer Allen	PO Box 31, Cordova

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Brian Lettick	Brian Lettick	Box 2406 Cordova
Marg K Johnson	Marg K Johnson	401 Railroad Ave. Cordova
[illegible]	Stephen Bodnar	405 third st Cordova
[illegible]	Scott Voorhees	Spruce Grove #C
[illegible]	Robert D Yagodich	Box 126 CDV. AK
[illegible]	Carl Thomas	PO 1331 Cdv AK
[illegible]	Pete Baker	Box 159 CDV AK
[illegible]	Thea Thomas	Box 1566 Cdv AK
Brent Songer	Brent Songer	Box 1019 Cordova AK
R A Finchy	R.A. Finchy	PO Box 416 Eyak AK
Matthew J plan	Matthew J Adams	Box 301 CDV AK

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Signature	Print Name	Residence
Robert D. Mobert	P.O. Box 700	Cordova
Jo C. Nielsen	Box 788	Cordova
[illegible]	Box 833	Cordova
D. C. McC[illegible]	906 Cliff Trail	Cordova
Ken Cochran	Box 1163	Cordova
Randy Pearce	Box 1181	Cordova
L. Fulton	Box 2355	Cordova
Brenda Fulton	Box 2355	Cordova
[illegible]	Box 2161	Cordova
Anne Leidel	Box 1551	Cordova
[illegible] C. [illegible]	Box 998	Cordova
[illegible]	Box 72	
Patrick Green	Box 1889	Cordova
Carol J Peckham	Carol J Peckham Box 1293	Cordova
[illegible]	Box 2215	Cordova
[illegible] Woods	Box 465	CDV
W. S. [illegible]	Box 522	CDV
C. Beckham	Bx 715	Cordova

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Margaret A. Powell	Margaret Powell	Saddle Point Box 184
James L. Myklan	James L. Myklan	Box 1241 Cordova, AK 99574
Seawan Gehlbach	SEAWAN GEHLBACH	Box 1634 CORDOVA AK 99574
David Scheel	David Scheel	Box 2113 Cordova
Tania Vincent	Tania Vincent	Box 2113 Cordova
Axel Jansson	AXEL JANSON	Box 576 CORDOVA
Ellen Bentley	Ellen Bentley	box 105 Cordova, AK 99574
Barry Merritt	Barry Merritt	Box 465 City 99574
Elizabeth Pidwell	Elizabeth Pidwell	Box 1748 Cordova AK 995
Christine Reyes	Christine Reyes	BOX 1761 Cordova
Monika Reghetti	MONIKA REGHETTI	Box 343 Cordova
Mark Porvin	MARK PORVIN	Box 2025 Cordova
Kenneth Carlson	Kenneth Carlson	POBox1063 Cordova
Mark S. Heidbrink	Mark S. Heidbrink	PO Box 2084 Cordova
Kimberly S. Mercer	Kimberly S. Mercer	General Delivery Cordova
Max L. Renault	MAX L RENAULT	PO Box 1086 Cordova
Maggie Nice	MAGGIE NICE	Box 1168, Cordova
Cheryl L. Garlitz	CHERYL L GARLITZ	Box 1791 C. A.
Edwin Siemion	Edwin Siemion	BOX 4416 CITY

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Susie Kendrick	Susie Kendrick	#1 Yewell Rd Soldotna AK
Nancy Bird	Nancy Bird	Po 1185 Cordova 99574
Michael L Ments	MICHAEL L. MENTS	Box 2402 CORDOVA
Jeff Guard	JEFF GUARD	BOX [illegible] CORDOVA, AK
Jeanette S. Williams	Jeanette S. Williams	P.O. 2224 Cordova AK
Elias Chavez Rodriguez		
Richard R. [illegible]		
[illegible]	RICHARD CASCIANO	BOX 584 CORDOVA
Natasha Edwards	Natasha Edwards	BOX 584, CORDOVA AK
Janice M [illegible]	Janice Sivits	Box 862 "
Noel G Pallas	NOEL G. PALLAS	Box 1965 Cordova
Laurie Honkola	Laurie Honkola	BOX 292 Cordova
JoAnne Cates	JoAnne Cates	Box 236 Cordova
John K Renner	John K Renner	Box 756 CDV
Darrell Brown	Darrell Brown	PO Box 234 Cordova
Misa Collins	Misa Collins	Box 161 CDV
Mike Collins	Mike Collins	Box 161 CDV

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R Sanford	Robert Sanford	Cordova AK.
	Eric Paavo	Cordova AK
Smallwood	Smallwood	Cordova, AK
C.L. Smallwood	Smallwood	Cordova, AK
Barbara Jensen	Barbara Jensen	Cordova, AK
Herbert T Jensen	Herbert T. Jensen	Cordova, AK
Elizabeth West	Elizabeth West	Cordova, AK
Jo Anne Banta	Jo Anne Banta	Cordova, AK
C. Ross Mullins	O. Ross Mullins	Cordova, AK.
Jerry Patton	Jerry Patton	Cordova, AK
Joel Atkins	Joel Atkins	Cordova AK
Virginia T. Ridao	Virginia T. Ridao	Cordova, AK
Anita Woods		Cordova, AK
Dana L. Rannev	Dana L. Rannev	CDV, AK
Diane Ujioka Crawley	Diane Ujioka Crawley	Box 2308 Cordova
Mary R. Rutzer	Mary R. Rutzer	Box 2535 Cordova, AK
R.S. Powell	R.S. Powell	Bx 1748 Cordova

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We, the undersigned, strongly endorse the immediate adoption of a comprehensive plan to protect the coastal rainforest in the Cordova area. The coastal rainforest ecosystem supports fisheries, wildlife resources, tourism, and recreational services all of which play an important role in Cordova's future. Many people live in Cordova because of their enjoyment of wildlands, pristine productive streams, and the opportunities provided by these resources.

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WE NEED THE TRUSTEE COUNCIL TO MAKE A CONCENTRATED FOCUSED EFFORT TO FINALIZE A COMPREHENSIVE DEAL WITH THE EYAK CORPORATION. WE ESPECIALLY REQUEST THE ASSISTANCE OF THE UNITED STATES FOREST SERVICE REPRESENTATIVES.

In order to come to closure, we urge the trustee council to accept a proposal offered by the Eyak and Sherstone Corporations that offers the most comprehensive protection to Eyak lands. We feel strongly that some protection is better than no protection at all.

Signature	Print Name	Residence
James N Gray	James N. Gray	601 Spruce Co
[illegible] Webber	2000 Power Creek Rd.	Box 876
Heather D. McCurley	503 4th St.	Box 2368
Mary Anne Bishop	MARY ANNE BISHOP	PO Box 2396 Cordova
[illegible]	Jay Kirsch	P.O. 943 CDV
[illegible]	Shelton Gay	P.O. Box 714, CDV
[illegible]	C Peter McRoy	POB 80988 FBX 99708
Belle Mickelson	Belle Mickelson	Box 325, CDV 99574
[illegible]		Box 881 CDV 99574
Wayne Gilmore		Bx 224 99574
Lorraine Stone	Lorraine Stone	201 Ocean Dock Cordova
John Layman	John Layman	POB 1463 Cordova, AK
Troy Tirrell	Troy Tirrell	Bx 1044 Cordova AK
[illegible]	Vicky Ham	Box 1035 CDV AK
[illegible]	[illegible]	Bx 1312 CDV AK
Kathy [illegible]		5 mi Copper River Hwy Cordova AK

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Signature	Print Name	Residence
Abel Morales	Debra Canary Rose	P.B. 120 Cordova AK.
[illegible]		PO#2368 Cdv AK
Karl Becker	KARL BECKER	BOX 1185 CORDOVA, AK 99574
[illegible]		Box 536 Cordova AK 99574
[illegible]		Box 891 "
Carol Taylor	RANDI TAYLOR	BOX 3071 Ketchikan AK
[illegible]		Box 1308 Cordova AK 99574
[illegible]	DAVID P. JANKA	POB 1231 CORDOVA AK 99574
Claire Mannarino	Claire A Mannarino	Box 1434 Cordova AK 99574-1434
Barbara A. Beedle		Bx 819 Cordova, AK 9957-0819
[illegible]		Box 1744 Cordova AK 99574
Bob Dettmer		BOX 1670 VALDEZ AK 99686
Thomas K. Irani		Box 994 Cordova AK 99574
Marsha L. Irani	Marsha L. Irani	Box 994 Cordova, AK 99574
Carol Potter	CAROL POTTER	P.O. BOX 1472 CORDOVA, AK 99574
Dave Erbey	Dave Erbey	P.O. Box 2263 Cordova AK 99574
Karen [illegible]	Karen St. Jean	BOX 233 Cordova AK. 99574

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Signature	Print Name	Residence
Lewis W. Myers	LEWIS W. MYERS	103 R/R AVE Cord
Rebekah H. Chapek	Becky Chapek	Box 1564 CDV
D. Kurtz	D.L. Kurtz	Bx 481 Cdv.
W. Hamman	William Hamman	Box 43 Cordova
Linda M. Moslin	Linda M. Moslin	Box 162 CDV
James C. Merritt	JAMES C. MERRITT	Box 386 CDV
Leah Merritt	Leah Merritt	P.O. Box 386 CDV.
Marcella Barduk		Box 751
Andy Fajardo	ANDY FAJARDO	Box 458
[illegible]	MARCIAL C. MAGSAMBOL	Box 792
Verla D. Trani	Verla D. Trani	Box 1059 Cordova
Robyn Wamser	Robyn Wamser	Box 260
Harold G. Moore	HAROLD G MOORE JR.	Box 1083
Joan Songer	Joan Songer	Box 1019 Cordova
Charlotte	Charlotte	PoBox 189

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Signature	Print Name	Residence
Marvin Van Den Broek	MARVIN VAN DEN BROEK	CORDOVA
Patricia Graves	Patricia Graves	Cordova
Mary Lou Weinrick	Mary Lou Weinrick	Cordova
Dan P. Bilderback	DAN P. Bilderback	Cordova
Mike Arvidson	Mike Arvidson	Cordova
Robert J. Pegues	ROBERT J. PEGUES	Box 171 Cordova
Robert Behrends	Robert Behrends	Box 1461 Cordova
William Pearson	William Pearson	Box 2052 Cordova
Doris Pearson	Doris Pearson	Box 2052 Cordova
Merrilee Nowlin	Merrilee Nowlin	Cordova Ak.
James Pahl	James Pahl	CDV AK
Kim Heger	Kim Heger	CDV AK.
Box 1734	Box 1734	CDV AK
John Goodridge	John Goodridge	Box 1761 CDV AK
Steven D. Moffitt	Steven D. Moffitt	Box 2145 CDV, Ak
Kevin G. O'Toole	Kevin G. O'Toole	Box 1875 CDV, AK
W H Haagen	W H Haagen	Box 1516 CDV AK
Kim Enbery	Kim Enbery	Box 2263 CDV, Ak

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Signature	Print Name	Residence
	David DeVera	PO Box 195 Cordova AK 99574
	LA Ermold	Box 746 Cordova 99574
	Kris S Johnston	Rt 1729 CDV 99574
	Jennifer	p.o. Box 570. "
	Chris Holmes	po 2676 CDV 99574
	Penelope L Sadler	1366 " "
	John W. Wilcock	1366 "
	Connie Grandlach	1236 Cordova
	Michael Grandlach	1236 CDV
	[illegible]	129 CDV
	Jeannine Butler	1051 CDV
	[illegible]	EO CDV
	Loreen Potter	CDV 99574
	Jay Brandon	CDV 99574
	[illegible]	Box 452 7390
	[illegible]	PO Box 872 CDV 7752
	[illegible]	Box 1294 CDV
	Roger Dunbar	Roger Dunbar Box 395 Cordova 99574

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Signature	Print Name	Residence

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 "G" Street, Anchorage, AK 99501
Phone: (907) 278-8012 Fax: (907) 276-7178

October 31, 1994

William D. Brighton, Esq.
Assistant Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Ben Franklin Station
P.O. Box 7611
Washington, D.C. 20044-7611

Dear Bill:

I appreciate your letter of October 28, 1994, concerning the IMS Infrastructure Improvements Project. Apparently your letter to me crossed with the faxed copy to you and the other federal agencies of an October 28 revised "findings" document which reflected the oral comments received earlier last week from you, Gina Belt and Maria Lisowski. I believe that those verbal requests had already been accommodated in that revised draft or in the proposed resolution of approval that I expect the Council to consider at next week's meeting. I am confident that we have successfully met the legal concerns that you had raised. Further, I believe we have responded to policy questions by thoroughly addressing them in the findings. This completely satisfies all concerns that have been raised again. A copy of the final version of this document is being faxed to you and the other federal officials to whom your letter was addressed.

As to the points discussed in your letter, they have been addressed in the revised documents in the following manner:

Request 1: provide specific examples of the research needed for EVOS restoration which cannot be done at existing Alaska facilities, and could be done at the IMS.

A new Attachment B to the findings has been added providing three such examples.

Request 2: expand discussion of why Seward is the best location and link to the later discussion of prudency and cost-effectiveness.

The discussion of the alternative site evaluation process has been expanded and clarified (beginning at page 8). In addition, new Figure 2 has been added which graphically depicts the evaluation criteria on a comparative basis. This table concisely summarizes the bases by

which the State determined that the Seward location was superior relative to the other existing research facilities in Alaska.

Request 3: recommendation that the Trustee Council adopt a policy to maximize the use of the IMS facilities for EVOS related research; include in findings a reasonable indication of scale necessary for EVOS research programs.

In response to your request, language from the prior draft document regarding coordination with activities at other research facilities was deleted. In addition, I have developed the following policy statement to implement your recommendation and will bring it before the Council for decision:

> **Policy for oil spill related research:** Consistent with this facility's unique capabilities for marine mammal, seabird and fish genetics research, it is the policy of the Trustee Council to concentrate its EVOS-funded laboratory research projects and resources at the IMS to the maximum extent practicable. Approval of individual laboratory research projects, including the facilities at which they will be located, will be based on the resources required for that project and its cost-effectiveness, as well as the cost-savings available to the Council at the IMS facility as a result of this capital investment.

As to your comments concerning the proposed project scale, the staff has added the following new language to the findings document:

> The size of the research facilities, including the laboratories, tankage, equipment and the number and size of offices, were based on requirements provided to the Project Group by federal and state agency scientists. Based on this agency input and review by the Chief Scientist and the core scientific peer reviewers, the project is of a size and scale necessary to perform anticipated EVOS-related research on a cost-effective basis.

I appreciate your time and assistance that has allowed us to complete these documents. In order to finalize the documents to be presented to the Council, further editing will have to be done before the Council at Wednesday's meeting.

Sincerely,

James R. Ayers
Executive Director

cc: George T. Frampton, Jr., Assistant Secretary, U.S. Department of the Interior
Adela Backiel, Deputy Secretary, U.S. Department of Agriculture
Phil Janik, Regional Forester, U.S. Forest Service
Steven Pennoyer, Regional Director, National Marine Fisheries Service, NOAA

MEMORANDUM

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 G St, Anchorage, Alaska 99501
907/278-8012 FAX: 907/276-7178

To: OSPIC Staff
Simpson Building Staff

Date: October 31, 1994

cc: Molly McCammon

From: L.J. Evans

Subj: **Public Comment Line**

Given our strong preferance for "live" interaction with folks calling to make public comment verbally, a list of staff has been designated, in addition to a person from the appropriate work group, to take these calls. If no one from the work group or the rotating list of staff members is available, only then should OSPIC or the fourth floor receptionist transfer a call from the public to the public comment line.

The working group designated people are:

Restoration Plan:.....Bob Loeffler
1995 Work Plan:.....Eric Myers
EIS:.....Rod Kuhn (until Nov. 4)
Habitat Protection:.....None

The rotating list of staff: Bob, Cherri, Eric, L.J., Rebecca, Sandra, Tami, Veronica and any others Molly may designate. Each of the people on the list have copies of the public comment form we developed to help make this task simpler. Please let me know if you note any improvements that could be made to the form. In addition, Ward agreed to build an electronic equivalent of the public comment form and put it on the network for anyone to use by the end of this week.

The procedure to be followed is this:

- A caller states that he or she wants to make a public comment verbally.
- The person taking the call then dials the next person on the rotating list. If that person is not available, go on to the next person on the list until either someone takes the call, or it is determined that no one is available right now. It's a short list so hopefully this wait won't inconvenience the caller too much.

- If no one is available, tell the caller this, and ask if the caller would like to leave a message on the public comment line, assuring the caller that we check that line daily to transcribe messages and forward them to the Trustees and to the public record.
- If the answer is yes, transfer the call to 224. I will transcribe the messages. It wouldn't hurt, at least at first, to let me know there is a call there, until I get used to checking. Cherri Womac will be my backup if I am out of the office.
- If the caller is NOT willing to talk to the voice mail system with their comments, please take a message. Tell the caller someone will get back to him or her within the next 24 hours, or as soon as possible. Give the message to the next person on the list to take public comments.
- Give all completed public comment forms to Rebecca Williams for duplication and distribution.

Part of the objective here is to avoid ending up with one person having to take all of these calls, particularly when a lot of them are coming in, to help minimize interruptions in everyone's busy day.

Let us try this routine for a while. Give me any feedback you have, pro or con, and we will reevaluate the process in a month. Thank you for your assistance!

PHONE COMMENT LOG

Name Affiliation Phone Address

Add to mailing list? Yes____ No____ Newsletters only ____ Technical Docs + ____

Date of call: _____ Talked to: _____

Subject of comments: _____

Comments:

Exxon Valdez Oil Spill Trustee Council
Restoration Office
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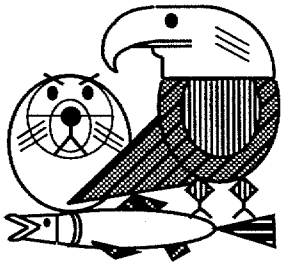

MEMORANDUM

TO: Molly McCammon, Director of Operations

FROM: Eric Myers, Project Coordinator

DATE: October 31, 1994

SUBJ: LGL Infomation Request — Update

I spoke with Jerome Montague regarding the ability of ADFG to furnish the budget information requested by Ms. Bobby Pearson on behalf of LGL Alaska Research Associates, Inc. regarding prior year funding for:

95165	PWS Herring Genetic Stock Identification
95191A	Investigation/Monitoring Oil & Egg - Alevin Mortality
95191B	Investigation/Monitoring Oil & Egg - Alevin Mortality (lab)
95255	Kenai River Sockeye Restoration
95320D	PWS Pink Salmon Genetics

He indicated that it would take some time yet to obtain the information. Accordingly, I called Ms. Pearson and informed her that it would be best if she contacted ADFG (Jerome) and NOAA (Byron) directly to obtian the information LGL needs. Ms. Pearson said she would contact the agencies directly. (I also spoke to Jerome about this and he was amenable to this approach.)

cc: Jerome Montague/ADFG
Byron Morris/NOAA
Mark Brodersen/ADEC

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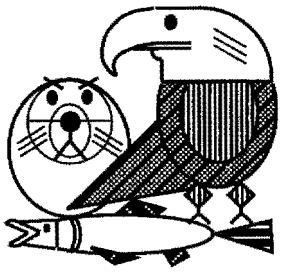

October 31, 1994

Vera Alexander, Dean
School of Fisheries of Ocean Sciences
University of Alaska Fairbanks
POB 757220
Fairbanks, Alaska 99775-7220

Dear Dr. Alexander:

Thank you for participating in the October 5 Trustee Council briefing on the proposed marine research institute in Seward. I know that the Trustee Council appreciated your remarks and your support for the leadership role that the University of Alaska proposes to take for research at the institute.

During your presentation, and subsequently in responding to specific questions from Steve Pennoyer and Craig Tillery, you mentioned that there is a good possibility to steer future hiring for endowed chair positions at the School of Fisheries and Ocean Science (SFOS) towards research at the Seward facility. As I understand it, SFOS is likely to have several retirements coming up soon, and you could direct new hiring for one or more existing endowed chairs during the next several years towards positions that would provide the scientific participation and leadership needed for the Seward facility.

Based on recent conversations with several Trustee Council members, I am keenly interested in solidifying the role of the University at the proposed facility prior to the Trustee Council's scheduled action on this project on November 2. This is likely to be a condition of authorizing release of funds for the facility's construction. While we all understand SAAMS' intent to raise $6 million for three endowed chairs at the institute during the period of 1996 - 2006, those positions would not be in place when the facility is projected to open in 1997. A letter from you prior to November 2 confirming the University's commitment to fill one or more existing SFOS endowed chairs over the next several years with faculty that would be located at the proposed Seward facility, would be very helpful towards assuring the Trustee Council that the University is prepared to assume the research leadership role as soon as the facility is available. Thank you for your continuing support of the EVOS restoration program.

Sincerely,

James R. Ayers
Executive Director

jra/raw

cc: Dr. Komisar

A P P L I E D
marine
S C I E N C E S

DATE: 10/18/94

PAGES: 1

TO: Rebecca Williams, CACI

FAX #: 1(907) 276-7178

FROM: Susanna L. Chase SLC

FAX # (510) 373-7834

RE: Travel Letters

Rebecca - Please issue Travel letters with an expiration date of **September 30, 1995** for the following Peer Reviewers. We will request letters on an as needed basis for the Peer Reviewers who will be traveling on Alaska DNR EVOS business.

Please send the letters directly to our offices, we will make a copy and forward them on to the Peer Reviewers.

Alan Springer FALCO 1708 Marmot Hill Road Fairbanks, AK 99709	1(907)-479-8006
Dr. Charles Peterson Institute of Marine Science University of North Carolina, Chapel Hill Moorehead City, NC 28557	1(919)726-6841 1(919)726-2426 (fax)
Dr. Philip Mundy 1015 Sher Lane Lake Oswego, OR 97034-1744	1(503) 636-6335 (fax) & (home)
Dr. William Pearcy Department of Oceanography Oregon State University Corvallis, OR 97331	1(503) 737-2601
Dr. George Rose Dept. of Fish & Oceans, Science Branch P.O. Box 5667 St. Johns, New Foundland A1C 5X1	(709) 772-2997 1(709) 772-4188 FAX
Dr. Stanley Senner Audubon Migratory Bird Office 4150 Darley Ave., Ste. 5 Boulder, Colorado 80303	1(303)499-7855 1(303)499-0286 FAX
Dr. Robert Spies	Send to AMS
Dr. Andrew Gunther	Send to AMS

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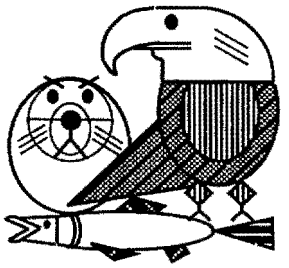

October 19, 1994

To Whom It May Concern:

Please be advised that Dr. Stanley Senner is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
645 G Street Suite 401
Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

Sincerely,

James R. Ayers
Executive Director

jra/raw

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645 G Street, Suite 401, Anchorage, Alaska 99501-3451
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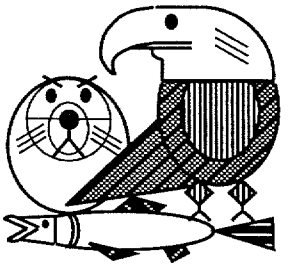

October 19, 1994

To Whom It May Concern:

Please be advised that Alan Springer is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
645 G Street Suite 401
Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

Sincerely,

James R. Ayers

James R. Ayers
Executive Director

jra/raw

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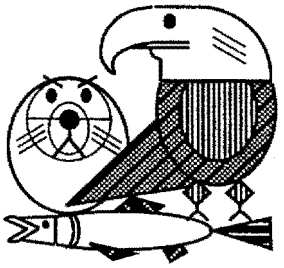

October 19, 1994

To Whom It May Concern:

Please be advised that Dr. Charles Peterson is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
645 G Street Suite 401
Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

Sincerely,

James R. Ayers

James R. Ayers
Executive Director

jra/raw

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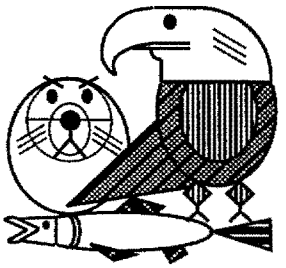

October 19, 1994

To Whom It May Concern:

Please be advised that Dr. Philip Mundy is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
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Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

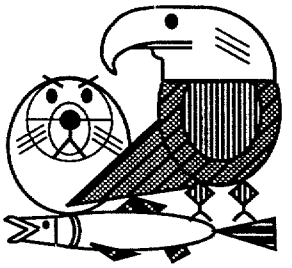
Sincerely,

James R. Ayers
Executive Director

jra/raw

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



October 19, 1994

To Whom It May Concern:

Please be advised that Dr. William Pearcy is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
645 G Street Suite 401
Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

Sincerely,

James R. Ayers
Executive Director

jra/raw

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178

October 19, 1994

To Whom It May Concern:

Please be advised that Dr. George Rose is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
645 G Street Suite 401
Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

Sincerely,

James R. Ayers

James R. Ayers
Executive Director

jra/raw

Exxon Valdez Oil Spill Trustee Council

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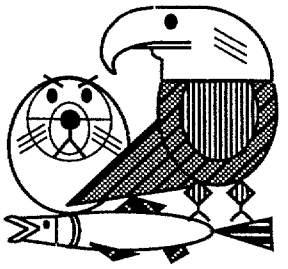

October 19, 1994

To Whom It May Concern:

Please be advised that Dr. Robert Spies is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
645 G Street Suite 401
Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

Sincerely,

James R. Ayers
Executive Director

jra/raw

Exxon Valdez Oil Spill Trustee Council

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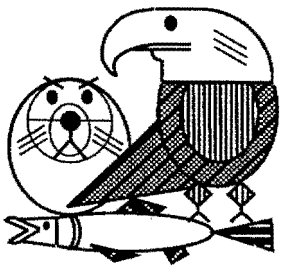
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



October 19, 1994

To Whom It May Concern:

Please be advised that Dr. Andrew Gunther is traveling on behalf of the State of Alaska and the U.S. Government, and, in that capacity is entitled to receive government rates for airfare and accommodations.

He will be working on government business until September 30, 1995. Any questions relating to this matter should be directed to:

Executive Director
Exxon Valdez Oil Spill Restoration Office
645 G Street Suite 401
Anchorage AK 99501-3451
(907) 278-8012

Thank you for your cooperation.

Sincerely,

James R. Ayers

James R. Ayers
Executive Director

jra/raw

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178

October 26, 1994

Paul Swartzbart
Alpine Charters
POB 233
Cordova Alaska 99574

Dear Mr. Swartzbart:

Thank you for your letter of October 17, 1994. I have been requested to respond to your letter on behalf of the Trustee Council.

As you know, the Trustee Council took action on May 3 to protect lands around Cordova owned by Eyak/Sherstone Corporations. The Trustee Council and representatives of Eyak/Sherstone are now discussing the details of an additional proposal for protection of Eyak lands as part of the Council's comprehensive habitat protection process.

This proposal was discussed with the Trustee Council during the October 5 Trustee Council meeting. The petition you refer to was distributed at that meeting. I can assure you that your comments, as well as those of the Cordova residents who signed the petition, have been and will continue to be considered as these discussions progress.

On October 7 the Trustees did reaffirm their May rejection of the Eyak and Sherstone comprehensive proposal because the proposal does not provide adequate legal assurance of the long-term habitat protection necessary for restoration. We have made Eyak a counter offer because we are just as concerned about providing habitat protection as those who have written in support of reaching an agreement with Eyak. However, it would be irresponsible to invest the public's money in the May 24th proposal without adequate assurance that restoration goals will be achieved or pursued. As you note in your letter, these negotiations can be difficult.

Thank you again for your continued interest in the *Exxon Valdez* Trustee Council actions. I can assure you that the Trustees are very aware of the interest Cordova has in this process.

Sincerely,

James R. Ayers
Executive Director

cc: Trustee Council

jra/raw

FAX 465-5070

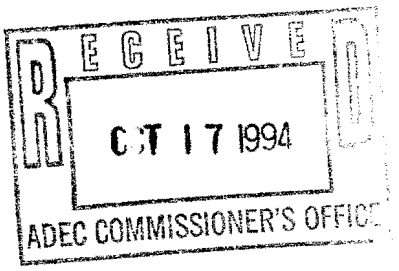
CC Mark.

OK but Draft then TC.

Transmited by Telefax

October 17, 1994

John Sandor
Commissioner
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 105
Juneau, AK 99801 - 1795



Mr. Sandor,

On October 5th, a petition was submitted (Via Telafax) to the Exxon Valdez Oil Spill Restoration Trustee Council. This petition was compiled by, and submitted by, Cordova residents because of concerns that forested habitat, which has been identified as important to the restoration process, would be lost because of delays in culminating a comprehensive habitat protection deal with the Cordova based Eyak Corporation.

Petition signatures were collected in the course of one day. A cursory review of the petition notes a diverse cross section of individuals, interest groups, and important community representatives. Included among these petitioners were: the Mayor of Cordova, three city council members, the CEO of the Eyak Corporation, the director of the Prince William Sound Science Center, prominent business owners, several high level state and federal resource agency staff (acting as individuals), a large number of fishermen, and native corporation shareholders.

Mr. Sandor, I feel that it is significant to note that this petition is composed completely of Cordovan citizens, and it constitutes approximately one quarter of the fall population of Cordova. I believe that it should be considered a valid random sampling of public opinion in one of the primary impacted towns in the spill affected area. I have heard little in the way of feedback from the EVOS Trustee Council on their reaction to the receipt of this petition, or their perspectives on the risk of delaying action on protecting critical habitat in the Cordova area which has been linked to the restoration of spill injured species and services.

I have little or no indication that the Trustee Council even discussed the Eyak land issues at their last meeting. I would appreciate it if you, or your staff, would take the time to respond in writing to the concerns outlined in this letter. In the interest of promoting better understanding of the EVOS Council process, I will make every effort to see that your observations and perspectives are shared with a wide sector of the public in the Cordova area.

Thank you for your time and effort in responding to this letter. The Trustee Council has undertaken extensive negotiations with the Eyak Corporation, and I understand that these negotiations are at times difficult. Your efforts are appreciated. I hope that these efforts are ultimately successful, and produce, a substantive, habitat protection plan for our area.

Sincerely,

Paul Swartzbart

Paul Swartzbart

cc Eyak Corporation, Donna Platt
Cordova Mayor, Margie Johnson
Cordova Times
Anchorage Daily News

Alpine Charters
P.O. Box 233
Cordova, AK 99574
Phone / Fax: 424-3421

Exxon Valdez Oil Spill Trustee Council

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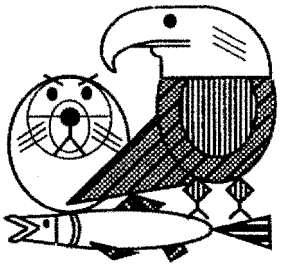


October 25, 1994

James L. Cloud
P.O. Box 201014
Anchorage, AK 99520-1014

Dear Mr. Cloud:

Thank you for the time and effort you have dedicated to your position on the *Exxon Valdez* Oil Spill Trustee Council Public Advisory Group. Through your representation, the Trustees were given valuable insight into what was important to the public sector and your specific interest group.

Enclosed is a Certificate of Appreciation for your participation in the *Exxon Valdez* Oil Spill Trustee Council Public Advisory Group which was signed by the members of the Trustee Council. On their behalf, I extend our deep appreciation and gratitude for your participation in this process.

Sincerely,

James R. Ayers
Executive Director

Enclosure

PAG members	Alternate members
James Cloud	Sharon Gagnon
Richard Eliason	Bill Elander
Richard Knecht	Dolly Reft
Vern McCorkle	Dan Warren
John McMullen	George Matz
Gerald McCune	Brenda Norcross
Brad Phillips	Sarah Cronk
Donald McCumby	Dave Beck

CERTIFICATE OF APPRECIATION

The *Exxon Valdez* Oil Spill Trustee Council extends our deep appreciation to

James L. Cloud

for your contribution to restoration of the resources and services injured by the *Exxon Valdez* oil spill as a member of the Public Advisory Group, October 1992 — October 1994.

Alaska Department of Fish and Game

Alaska Department of Environmental Conservation

Craig J. Tillery
Alaska Department of Law

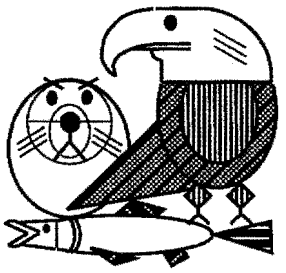
National Oceanic and Atmospheric Administration

U.S. Department of the Interior

U.S. Department of Agriculture

LITHO IN U.S.A.

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



MEMORANDUM

TO: Jerome Montague/ADFG
Byron Morris/NOAA

FROM: Molly McCammon, Director of Operations

DATE: October 25, 1994

SUBJ: LGL Infomation Request — Project Budget Information

Ms. Bobby Pearson on behalf of LGL Alaska Research Associates, Inc. called late last week to inquire as to the status of efforts to document the cumulative, prior year funding for:

95165	PWS Herring Genetic Stock Identification
95191A	Investigation/Monitoring Oil & Egg - Alevin Mortality
95191B	Investigation/Monitoring Oil & Egg - Alevin Mortality (lab)
95255	Kenai River Sockeye Restoration
95320D	PWS Pink Salmon Genetics

As I mentioned previously, LGL is especially interested in expenditures attributable to genetics research. I would like to respond to Ms. Pearson by the end of this week (October 28). Please let me know if it will not be able to obtain the information by then.

cc: Mark Brodersen/ADEC

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 "G" Street, Anchorage, AK 99501
Phone: (907) 278-8012 Fax: (907) 276-7178

TO: Work Force Liaisons

DATE: October 25, 1994

THRU: Molly McCammon
Director of Operations

TELE: 278-8012
FAX: 276-7178

FROM: Bob Loeffler, Veronica Gilbert

SUBJECT: Last Review: Final Restoration Plan. Comments, if any, **DUE FRIDAY 10/28.**

There were few controversial comments on the last draft. As a result, there are a number of editing changes, but only two that warrant attention. The language concerning "fair market value" policy for habitat protection and acquisition is changed. See page 23. In addition, the U.S. Forest Service is still considering language that indicates that the likely deposits to the reserve will be $12 million (p. 27).

Except for the reserve language, we believe that all comments on the restoration plan have been resolved. **The Agency Liaisons are responsible for ensuring that their Trustee has no objection to the plan, as written. If there is any problem, you *must* let Bob Loeffler, Veronica Gilbert, or Sandy Rabinowitch know by this Friday — October 28th.**

Thank you. If you have any questions, please call Bob, Veronica, or Sandy.

10/25 Review Draft

Exxon Valdez Oil Spill Restoration Plan

DRAFT

10/25 Review Draft

Exxon Valdez Oil Spill Restoration Plan

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Oil Spill Area . . . . . inside front cover

Chapter 1
Introduction

Purpose of the Document

In 1989, the *Exxon Valdez* oil spill contaminated ~~thousands of~~ about 1,500 miles of Alaska's coastline. It killed birds, mammals, and fish, and disrupted the ecosystem in the path of the oil. In 1991, Exxon agreed to pay the United States and the State of Alaska $900 million over ten years to restore the resources injured by the spill, and the reduced or lost services (human uses) they provide.

The *Exxon Valdez* Restoration Plan provides long-term guidance for restoring the resources and services injured by the oil spill. It contains policies for making restoration decisions and describes how restoration activities will be implemented.

Background

The Oil Spill. Shortly after midnight on March 24, 1989, the T/V *Exxon Valdez* ran aground on Bligh Reef in Prince William Sound, Alaska, spilling eleven million gallons of North Slope crude oil. It was the largest tanker spill in United States' history. That spring the oil moved along the coastline of Alaska, contaminating portions of the shoreline of Prince William Sound, the Kenai Peninsula, lower Cook Inlet, the Kodiak Archipelago, and the Alaska Peninsula. Oiled areas include a National Forest, four National Wildlife Refuges, three National Parks, five State Parks, four State Critical Habitat Areas, and a State Game Sanctuary. Oil eventually reached shorelines nearly 600 miles southwest from Bligh Reef where the spill occurred. The map preceding the table of contents shows the spill area. The spill area includes all of the shoreline oiled by the spill, severely affected communities, and adjacent uplands to the watershed divide.

Response. During 1989, efforts focused on containing and cleaning up the spill, and rescuing oiled wildlife. Skimmers worked to remove oil from the water. Booms were positioned to keep oil from reaching salmon hatcheries in Prince William Sound and Kodiak. A fleet of private fishing vessels known as the "Mosquito Fleet" played an important role in protecting these hatcheries, assisting the skimmers, and capturing oiled wildlife and transporting them to rehabilitation centers. Exxon began to clean up beaches under the direction of the U.S. Coast Guard with advice from federal and state agencies and local communities. Several thousand workers cleaned shorelines, using techniques ranging from cleaning rocks by hand to high-pressure hot-water washing. Fertilizers were applied to some oiled shorelines to increase the activity of oil-metabolizing microbes, an activity known as bioremediation.

The 1989 shoreline assessment, completed after the summer cleanup ended, showed that a large amount of oil remained on the shorelines. In the spring of 1990, the shoreline was again surveyed in a joint effort by Exxon and the state and federal governments. The survey showed that much work remained to be done in 1990. The principal clean-up method used in 1990 was manually cleaning the remaining oil, but bioremediation and relocation of oiled beach material to the active surf zone were also used in some areas.

Shoreline surveys and limited clean-up work occurred in 1991, 1992, 1993, and 1994. In 1992, crews from Exxon and the state and federal governments visited eighty-one sites in Prince William Sound and the Kenai Peninsula. They reported that an estimated seven miles of the 21.4 miles of shoreline surveyed still showed some surface oiling. This number does not include oiling that may have remained on shorelines set aside for monitoring natural recovery. The surveys also indicated that subsurface oil remained at many sites that were heavily oiled in 1989. No sites were surveyed on Kodiak Island or the Alaska Peninsula in 1992. Earlier surveys suggested that most of the light oil (scattered tar balls and mousse) which remained on Kodiak Island and the Alaska Peninsula would degrade by 1992. While there may be a few exceptions, the surveys determined that the cost and potential environmental impact of further cleanup was greater than the problems caused by leaving the oil in place. The 1992 cleanup and the 1993 shoreline assessment were concentrated in those areas where oil remained to a greater degree — Prince William Sound and the Kenai Peninsula.

In 1994, restoration workers performed manual treatment to accelerate degradation of surface oil on approximately a dozen important subsistence and recreation beaches in western Prince William Sound. They also performed manual treatment to accelerate degradation of subsurface oil beneath approximately a dozen protected mussel beds in western Prince William Sound.

Natural Resource Damage Assessment. During the first summer after the spill, one state and three federal government agencies directed the Natural Resource Damage Assessment field studies to determine the nature and extent of the injuries as needed for litigation purposes. The federal agencies were the U.S. Department of the Interior, U.S. Department of Agriculture, and the National Oceanic and Atmospheric Administration. The state agency was the Alaska Department of Fish and Game. Expert peer reviewers provided independent scientific review of ongoing and planned studies and assisted with synthesis of results. Most damage assessment field studies were completed during 1991.

Settlements

On October 8, 1991, the U.S. District Court approved a plea agreement that resolved various criminal charges against Exxon, and a civil settlement that resolved the claims of the United States and the State of Alaska against Exxon for recovery of ~~civil~~ natural resource damages resulting from the oil spill.

The Criminal Plea Agreement. As part of the criminal plea agreement, the court fined Exxon $150 million -- the largest fine ever imposed for an environmental crime. Of this amount, $125 million was remitted due to Exxon's cooperation with the governments during the cleanup, timely payment of many private claims, and environmental precautions taken since the oil spill. Of the remaining $25 million, $12 million was paid to the North American Wetlands Conservation Fund for wetlands enhancement in the U.S., Canada and Mexico, and $13 million was paid to the federal treasury. As part of the Plea Agreement, Exxon also agreed to pay restitution of $50 million to the United States and $50 million to the State of Alaska. The state and federal governments separately manage these $50 million payments. Funds from the criminal plea agreement are *not* under the authority of the Trustee Council, and the use of these funds is not guided by this plan.

Civil Settlement and Restoration Fund. The Federal Water Pollution Control Act, 33 USC 1321(f)(5), provides the authority for the civil settlement. The use of monies provided by the civil settlement ~~includes~~ is governed by two documents: The first is a Consent Decree between Exxon and the State of Alaska and the United States that requires Exxon to pay the United States and the State of Alaska $900 million over a period of ten years. The second is the Memorandum of Agreement between the State of the Alaska and the United States. Both were approved by the U.S. District Court.

According to the Consent Decree between Exxon and the state and federal governments, Exxon must make ten annual payments totaling $900 million. The first payment was made in December 1991; the last payment is due in September 2001. As of November 1994, four payments totaling $410 million have been received. The payment schedule is provided in Table 1. The terms of the Consent Decree and Memorandum of Agreement require that funds paid by Exxon are first to be used to reimburse the federal and state governments for the costs of cleanup, damage assessment, and litigation. Settlement funds remaining after the reimbursements are to be used for purposes of restoration. The use of the restoration fund is guided by this plan.

The Consent Decree with Exxon also has a reopener provision that allows the governments to claim up to an additional $100 million between September 1, 2002 and September 1, 2006 to restore one or more resources or habitats that suffered a substantial loss or decline as a result of the spill. Under the Consent Decree, the reopener is available only for any losses or declines that could not reasonably have been known or anticipated from information available at the time of the settlement.

The Memorandum of Agreement provides the rules for spending the restoration funds. Those rules are:

- Restoration funds must be used "...for the purposes of restoring, replacing, enhancing, or acquiring the equivalent of ***natural resources*** injured as a result of the Oil Spill and the reduced or lost ***services*** provided by such resources...."

- Restoration funds must be spent on restoration of natural resources in Alaska unless the Trustees unanimously agree that spending funds outside of the state is necessary for effective restoration.

- All decisions made by the Trustees (such as spending restoration funds) must be made by unanimous consent.

The Memorandum of Agreement and other settlement documents define a number of important terms.

Restore or **Restoration** means any action, in addition to response and clean-up activities required or authorized by state or federal law, which endeavors to restore to their prespill condition any natural resource injured, lost, or destroyed as a result of the Oil Spill and the services provided by the resource or which replaces or substitutes for the injured, lost or destroyed resource and affected services. Restoration includes all phases of injury assessment, restoration, replacement, and enhancement of natural resources, and acquisition of equivalent resources and services.

Replacement or acquisition of the equivalent means compensation for an injured, lost or destroyed resource by substituting another resource that provides the same or substantially similar services as the injured resource.

Enhancement means any action that improves on or creates additional natural resources or services where the basis for improvement is the prespill condition, population, or use.

Natural resources means the land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to or managed by the state or federal governments. Examples of natural resources are birds, fish, mammals, and subtidal plants and animals.

The Consent Decree also provides that funds may be used to restore archaeological sites and artifacts injured or destroyed by the spill.

In addition to restoring natural resources, funds may be used to restore reduced or lost **services** (including human uses) provided by injured natural resources. Humans use the services provided by resources injured by the spill in a variety of ways: subsistence, commercial fishing, recreation (including sport fishing, sport hunting, camping, and boating), and tourism are services that were affected by injuries to fish and wildlife. Injured services also include the

value derived from simply knowing that a resource exists. (This service is called "passive use.")

Restoration funds may not be used to compensate individuals for their own private losses. For example, the personal loss of income by individual fishermen or commercial guides must be settled through private lawsuits.

Past Expenditures

Of the $900 million from the civil settlement, approximately _____ million remain to fund future restoration activities as of November 1994. A summary of past expenditures is given in the table below. **[Note to Reviewers:** This table will be updated after the October 31st meeting.]

Table 1. The Civil Settlement Funds as of November 1994
Figures in Millions of Dollars

Past Payments by Exxon		Past Reimbursements, Deductions, Withdrawals & Commitments
December 1991	$ 90 million	$_____million:
December 1992	$150 million	• $_____to reimburse the federal and state governments for past damage assessment, cleanup, response, restoration, and litigation expenses;
September 1993	$100 million	• $39.9 deducted by Exxon for costs of cleanup completed after January 1, 1991;
September 1994	$ 70 million	• $15.5 for the 1992 Work Plan;
	$410 million	• $51.3 for the 1993 Work Plan (including Kachemak Bay purchase, and downpayment toward purchase of Seal Bay);
		• $____for the 1994 Work Plan;
		• $___ for the 1995 Work Plan
Future Payments		**Future Commitments**
September 1995	$ 70 million	Between $_____million to reimburse the governments for past expenses.
September 1996	$ 70 million	
September 1997	$ 70 million	
September 1998	$ 70 million	**Total remaining for restoration**
September 1999	$ 70 million	
September 2000	$ 70 million	
September 2001	$ 70 million	Approximately $_____million
	$490 million	
Total Payments		**Total Expenses**
$900 million		$900 million

Post-settlement Trustee Organization

The Clean Water Act requires that the President and the Governor designate natural resource trustees to oversee natural resource damage claims and restoration. In the 1991 MOA, three federal and three state trustees were designated to administer the restoration fund and to restore resources and services injured by the oil spill. The members are:

State of Alaska Trustees

- Commissioner of the Department of Environmental Conservation
- Commissioner of the Department of Fish and Game
- Attorney General

Federal Trustees

- Secretary of the Interior
- Secretary of Agriculture
- Administrator of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce

The Trustees established the Trustee Council to administer the Restoration Fund. The State Trustees serve directly on the Trustee Council. The Federal Trustees have each appointed a representative in Alaska to serve on the Council.

The Trustee Council uses funds from the civil settlement for activities to restore injured resources and services. It *does not* manage fish and wildlife resources or manage land. Fish and game management decisions are made by fish and game boards, or by appropriate federal or state agencies. The Trustee Council may fund research to provide information to those agencies or other groups.

Public Involvement and Information

The importance of public participation in the restoration process was recognized in the Exxon settlement and is an integral part of the agreement between the state and federal governments. The Memorandum of Agreement and Consent Decree approved by the court specify that:

> ...the Trustees shall agree to an organizational structure for decision making under this MOA and shall establish procedures providing for meaningful public participation in the injury assessment and restoration process, which shall include establishment of a public advisory group to advise the Trustees....

In January 1992, public meetings were held and written comments requested for recommendations about establishing a Public Advisory Group. Comments addressed the role, structure, and operating procedures for the group. The Public Advisory Group was formed in October 1992 to advise the Trustee Council on all matters relating to the planning, evaluation, and allocation of funds, as well as the planning, evaluation, and conduct of injury assessments

and restoration activities. This group consists of seventeen members who represent a cross-section of the interest groups and public affected by and concerned about the spill. There are also two ex-officio members chosen by the Alaska State House of Representatives and the Alaska State Senate.

Additional public meetings were held in May 1992 on the *Restoration Framework Volume I*, which outlined restoration issues and a general framework for restoration, and in April-May 1993 to discuss Alternatives for the Draft Restoration Plan.

A draft of this restoration plan was adopted in November 1993 to guide restoration decisions until this final plan could be completed. It was available ~~for~~ to the public during 1994. In addition, A *Draft Environmental Impact Statement* analyzed the potential environmental impacts of implementing the *Draft Restoration Plan,* and the two documents — the *Draft Environmental Impact Statement* and the *Draft Restoration Plan* — were distributed for public review from June 18, 1994 through August 1, 1994. Six public meetings were held to discuss these documents, and the comments ~~have been taken into account before adopting the *Final Environmental Impact Statement,* and this plan.~~ were taken into account in the preparation of the Final Environmental Impact Statement. The Final Environmental Impact Statement was used by the Trustees in reaching their decisions as outlined in the Record of Decision signed in October 1994, and in issuing this plan.

Most Trustee Council meetings include a public comment period that is teleconferenced to sites in the spill area. Verbatim transcripts of the meetings are available to the public a few days after the meeting. Documents, such as those proposing projects for funding, are distributed for public review before Trustee Council decisions. In addition, the public is invited to attend various workshops and work sessions sponsored by the Trustee Council.

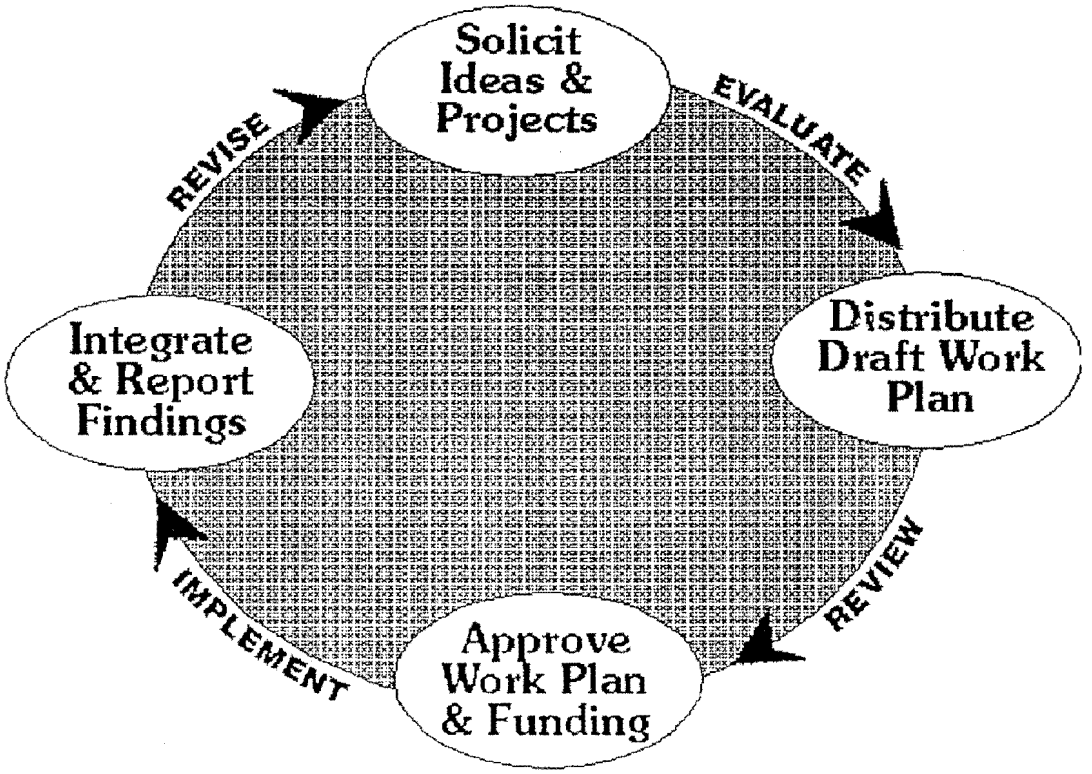
Implementing the Restoration Plan: *The Adaptive Management Cycle*

The Restoration Plan provides long-term guidance for restoring the resources and services injured by the oil spill. It does not list individual restoration projects. Each year, the Restoration Plan will be implemented through an annual or multi-year work plan. The work plan describes the projects funded by the Trustee Council from the restoration fund. To be funded, projects must be consistent with the court decree, and with the policies, objectives, and restoration strategies of this Restoration Plan.

Figure 1 shows the Adaptive Management Cycle that is used to determine the work plans. The figure shows that restoration is a cyclical activity — that the restoration priorities and needs embody a long-term, ecosystem view that is continually updated as new information is acquired. Thus, the most current information is used to determine the needs of injured resources and services and the priorities for restoration. On the basis of those priorities, the Trustee Council annually invites proposals and ideas for restoration from government agencies, universities, private industry and the public. Submissions undergo scientific, policy, and legal review. Important projects that need additional work may be further developed. Following that review, a draft of that year's restoration program is distributed

for public review. The Trustee Council uses information received from the public, scientists, the Trustee's Public Advisory Group, and agency staff to decide which restoration projects to fund that year.

Figure 1. The Trustee Council Adaptive Management Cycle



[NOTE TO REVIEWERS: The graphics quality of this is rough because it is an import from Mac to IBM. Please review the graphic, but ignore quality problems (jagged lines, incomplete shading, etc.).]

Following approval and funding, projects are implemented by trustee agencies, private industry, communities, and non-profit organizations. Each year, the results of that year's restoration activities are synthesized, integrated, and distributed so that scientists and the public have an up-to-date view of the condition of the injured resources and services and know what has been learned during that year. The Trustee Council annually publishes a status report for the public describing the restoration program and the current condition of the resources and services injured by the spill. On the basis of the updated status, the cycle begins again.

Within the adaptive management cycle, there are multiple opportunities for meaningful public participation at all levels — planning, project design, implementation and review — not just during the public comment period of officially distributed documents. These opportunities — group meetings, Public Advisory Group meetings, ~~appointments to special committees,~~ and

project planning groups — involve the public in an on-going fashion.

The public and the scientific community will be provided timely access to all levels of restoration information. In addition to the status report, more detailed information will be made available to scientists and the interested public in ~~an~~ timely manner and in an easily used form.

Changing the Restoration Plan. ~~The Trustee Council may change the Restoration Plan in response to new scientific data, or to changing social and economic conditions.~~ The Trustee Council may change the plan if the Council determines that the plan is no longer responsive to restoration needs. Changes may be due to new scientific data, or to changing social and economic conditions. However, new scientific data will be incorporated into restoration decisions without the need to change the plan. ~~It will be necessary to change the plan only if the Trustee Council determines that the plan is no longer responsive to restoration needs.~~

Legal Compliance. All projects will comply with state and federal laws and regulations before they are implemented.

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Chapter 2
Mission and Policies

Mission Statement

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

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

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

Policies

The policies below reflect a comprehensive, balanced approach to restoration. They give direction to the restoration program while allowing flexibility so that the Trustee Council can respond to changing restoration needs.

An Ecosystem Approach

1. **Restoration should contribute to a healthy, productive and biologically diverse ecosystem within the spill area that supports the services necessary for the people who live in the area.**

2. **Restoration will take an ecosystem approach to better understand what factors control the populations of injured resources.**

These policies recognize that recovery from the oil spill involves restoring the ecosystem as well as restoring individual resources. An ecosystem includes the entire community of organisms including people that interact with one another and their physical surroundings~~, including people and their relationship with other organisms~~. The ecosystem will have recovered when the population of flora and fauna are again present, healthy, and productive; there is a full complement of age classes; and people have the same opportunities for the use of public resources as they would have had if the oil spill had not occurred. Restoration proposals should, as much as practical, reflect an understanding of their impact on ecosystem relationships of related resources and services.

For General Restoration activities, preference is given to projects that benefit multiple species rather than to those that benefit a single species. However, effective projects for restoring individual resources will also be considered. This approach will maximize benefits to ecosystems and to injured resources and services.

Habitat Protection and Acquisition emphasizes protection of multiple species, ecosystem areas, such as entire watersheds, or areas around critical habitats. This approach will be more likely to ensure that the habitat supporting an injured resource or service is protected. In some cases, protection of a small area will benefit larger surrounding areas, or provide critical protection to a single resource or service.

Monitoring and Research activities require more than resource-specific investigations to understand the factors affecting recovery from the oil spill. Restoration issues are complex, and research must often take a long-term approach to understand the physical and biological interactions that affect an injured resource or service, and may be constraining its recovery. The results of these efforts could have important implications for restoration, for how fish and wildlife resources are managed, and for the communities and people who depend upon the injured resources.

Injuries Addressed by Restoration

3. **Restoration activities may be considered for any injured resource or service.**

4. **Restoration will focus upon injured resources and services and will emphasize resources and services that have not recovered. Resources and services may be enhanced, as appropriate, to promote restoration. Restoration actions may address resources for which there was no documented injury if these activities will benefit an injured resource or service.**

5. **Resources and services not previously identified as injured may be considered for restoration if reasonable scientific or local knowledge obtained since the spill indicates a spill-related injury.**

6. **Priority will be given to restoring injured resources and services which have economic, cultural and subsistence value to people living in the oil spill area, as long as this is consistent with other policies.**

7. **Possible negative effects on resources or services must be assessed in considering restoration projects.**

As required by the Consent Decrees, restoration must benefit the resources and services injured by the spill. Table 2 in Chapter 4 lists resources and services injured by the spill. The table is based on the best available information but may be amended if new information demonstrates additional spill-related injuries. The process for amending the list is described in Chapter 4. ~~However,~~ In addition, an ecosystem approach to restoring injured resources and services ~~allows~~ may require restoration ~~to also focus on~~ activities that address a resource's prey or predators, or ~~on~~ the other biota and physical surroundings on which it depends ~~on. In addition, our knowledge of injury changes with each year's research, and new information may identify other injuries and consequences of the spill.~~

Continuing injuries to resources and services with important economic, cultural and subsistence value to people living in or using the oil spill area cause continuing hardship. For example, subsistence users say that maintaining a subsistence culture depends upon uninterrupted use of subsistence resources. The more time users spend away from subsistence activities, the less likely they will return to it. Continuing injury to natural resources used for subsistence may affect the way of life of entire communities. Similarly, each year that commercial fish runs remain below prespill levels compounds the injury to the fishermen and, in many instances, the communities in which they live or work.

The policies recognize that waiting for natural recovery may be the most effective approach in many instances, but that the time required for natural recovery can have important adverse consequences for resources and services which the people of the spill area rely upon.

Finally, restoring one resource or service should not come at the cost of injuring another. An assessment of possible negative effects on non-target resources or services will be part of the project proposal evaluation process.

Location of Restoration Actions

8. **Restoration activities will occur primarily within the spill area. Limited restoration activities outside the spill area, but within Alaska, may be considered under the following conditions:**
   - when the most effective restoration actions for an injured population are in a part of its range outside the spill area, or
   - when the information acquired from research and monitoring activities outside the spill area will be significant for restoration or understanding injuries within the spill area.

The vast majority of restoration funds will be focused on the spill area, where the most serious injury occurred and the need for restoration is greatest. At the same time, the policy provides the flexibility to restore and monitor outside the spill area under limited circumstances. Examples are some restoration and monitoring activities for migratory seabirds and marine mammals.

Restoring a Service

9. **Projects designed to restore or enhance an injured service:**
   - must have a sufficient relationship to an injured resource,
   - must benefit the same user group that was injured, and
   - should be compatible with the character and public uses of the area.

The restoration fund may be used to restore the reduced or lost services provided by injured resources. The relationship between the proposed activity and the injured resource which caused the reduced or lost service is the subject of the first part of this principle. It requires that a project to restore or enhance an injured service must be sufficiently related to a natural resource. It can be related to a natural resource in various ways: it could directly restore a resource, provide an alternative resource, or restore access or people's use of the resource. The strength of the required relationship has not been defined by law, regulation, or the courts. However, a clear connection with an injured resource is necessary. In determining whether to fund a project to restore services, the strength of the project's relationship to injured resources will be considered.

A few examples may help understanding. One way to aid commercial fishing is to restore injured salmon runs or to provide alternative runs. However, the restoration fund cannot be used to give cash grants to fishermen to cover spill-related losses. This latter idea is unrelated to an injured resource.

As a second example, subsistence was injured, in part, because the resources it relies on were injured. Habitat may be purchased to provide alternative areas for subsistence where uninjured resources exist. The restoration fund may also be used to enhance or establish alternate subsistence resources, or provide information about the safety and availability of subsistence resources, or even to provide facilities such a shelter cabin that provides for easier access to alternate resources. In these cases, the restoration activity has a relationship to injured resources — it provides replacement resources, allows users to make better judgement about use of the resources, or easier access to alternative resources. However, the restoration fund could not be used to help subsistence users in general, such as providing a warehouse or generator in a

subsistence community, because there is no relationship to an injured resource.

The second part of the principle ensures that the injured user groups are the beneficiaries of restoration. If the justification for an action is to restore a service, it is important that the user group that was injured be ~~the one that is~~ helped.

The last part of the principle addresses a public concern about possible changes in the use of the spill area. It allows improvements in the services without producing major changes in use patterns. For example, a mooring buoy may improve boating safety without changing patterns of use. Projects to be avoided are those that create ~~different~~ incompatible uses for an area, such as constructing a small-boat servicing facility in an area that is wild and undeveloped.

Competition and Efficiency

10. Competitive proposals for restoration projects will be encouraged.

Most restoration projects have been undertaken by state or federal agencies. However, the number of competitive contracts awarded to nongovernmental agencies have increased each year and will continue to increase.

This policy encourages active participation from individuals and groups in addition to the trustee agencies and may generate innovation and cost savings. This approach may be inappropriate for some restoration projects, but, where appropriate, competitive proposals will be sought for new project ideas and to implement the projects themselves.

11. Restoration will take advantage of cost sharing opportunities where effective.

12. Restoration should be guided and reevaluated as information is obtained from damage assessment studies and restoration actions.

Activities should be coordinated to decrease project costs and be designed to assess and incorporate available and late-breaking information to ensure the most effective restoration program.

13. Proposed restoration strategies should state a clear, measurable and achievable end point.

A clear, measurable, and achievable endpoint is necessary to determine whether a strategy is successful.

14. Restoration must be conducted as efficiently as possible, reflecting a reasonable balance between costs and benefits.

This policy reflects the important fact that there is not sufficient money available to complete all useful restoration activities. Implementation of this policy will not be based on a quantified cost/benefit analysis, but on a broad consideration of the direct and indirect costs, and the primary and secondary benefits. It will also take into account whether there is a less expensive

method of achieving substantially similar results.

15. Priority shall be given to strategies that involve multi-disciplinary, interagency, or collaborative partnerships.

Projects that use this type of approach are more likely to take advantage of a diversity in viewpoints, skills, and strengths and will be more likely to result in cost-effective restoration.

Scientific Review

16. Restoration projects will be subject to open, independent scientific review before Trustee Council approval.

This policy continues an existing practice. Independent scientific review gives an objective evaluation of the scientific merits of the project. It also assures the public that scientific judgements are without bias.

17. Past performance of the project team should be taken into consideration when making funding decisions on future restoration projects.

The ability to complete projects in a timely and effective manner is essential to the restoration effort.

18. Restoration will include a synthesis of findings and results, and will also provide an indication of important remaining issues or gaps in knowledge.

To the extent possible, all restoration actions will take into account the other relevant activities to help the Trustee Council conduct an integrated research program. In addition, a synthesis of findings and results will be available for the public, scientists, and agency staff to help understand the status of injured resources and services, and to plan for future restoration.

Public Participation

19. Restoration must include meaningful public participation at all levels — planning, project design, implementation and review.

Public participation is not a once-a-year government activity limited to commenting on draft documents. Rather, to the greatest extent possible, individual projects should integrate the affected and knowledgeable public in planning, design, implementation, and review of these subjects. Some projects have a more easily identifiable public, for example those designed to affect services or the resources that support them. However, incorporating public preferences and information into any project is likely to improve its cost-effectiveness, take advantage of available knowledge, and help ensure that the restoration program is understood and accepted by the public.

The Trustee Council has emphasized its commitment to involve the public in all phases of

restoration activities. Evidence of meaningful public involvement will be sought as part of the project evaluation process.

20. Restoration must reflect public ownership of the process by timely release and reasonable access to information and data.

Information from restoration projects must be available to other scientists and to the general public in a form that can be easily used and understood. An effective restoration program requires the timely release of such information. This policy underscores the fact that since the restoration program is funded by public money, the public owns the results.

Normal Agency Activities

21. Government agencies will be funded only for restoration projects that they would not have conducted had the spill not occurred.

This policy addresses the concern that restoration funds should not support activities that government agencies would do anyway. It also affirms the practice that has been in effect since the beginning of the restoration process. To determine whether work would have been conducted had the spill not occurred, the Trustee Council will consider agency authorities and the historic level of agency activity.

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Chapter 3
Categories of Restoration Actions

The restoration program includes five categories of restoration activities:

- General Restoration,
- Habitat Protection and Acquisition,
- Monitoring and Research,
- Restoration Reserve, and
- Public Information and Administration.

This chapter describes activities within each category. It also describes how decisions are made about projects and presents policies that apply to each category.

The Alternatives for the *Draft Restoration Plan* asked the public to indicate the emphasis they would place on each restoration category. Although this approach was useful in asking the public about the relative importance to place on these categories, this plan does not prescribe a fixed allocation of the restoration fund. The restoration program must be able to respond to changing conditions and new information about injury, recovery, and the cost and effectiveness of restoration projects. When making annual funding decisions, the Trustee Council will use the public comments received on the restoration alternatives as well as comments that may be received in the future.

General Restoration

General Restoration activities are a principal tool used to focus on the restoration of individual injured resources and services. General Restoration includes a wide variety of restoration activities. This plan uses the term to include all activities that are not Habitat Protection and Acquisition, Monitoring and Research, or Public Information and Administration. General Restoration activities fall into one of the following three types:

- Manipulation of the Environment;
- Management of Human Use; or
- Reduction of Marine Pollution.

A few General Restoration activities will improve the rate of natural recovery. Most of these activities involve manipulation of the environment. Other activities protect natural recovery by managing human uses or reducing marine pollution. A few General Restoration activities may involve facilities. Facilities may direct human use away from sensitive areas, support other restoration activities, or replace facilities needed for access and damaged by the spill.

Manipulation of the Environment. Some General Restoration techniques restore injured resources and services by directly manipulating the environment. Examples include building fish passes to restore fish populations, or replanting seaweed to restore the intertidal zone to prespill conditions.

A common public comment on alternatives was that manipulation of the environment has the

potential to adversely affect the ecosystem. While some people recommended individual projects, others recommended relying on natural recovery where appropriate.

When evaluating projects that manipulate the environment, the potential for adverse effects on the ecosystem will be considered. Those projects that will effectively accomplish an important restoration objective without adversely affecting the ecosystem are more likely to be funded.

Management of Human Use. Some General Restoration projects involve managing human use to aid restoration. Examples include redirecting hunting and fishing harvest, or reducing human disturbance around sensitive bird colonies. Many projects that manage human use do so to protect injured resources, services, or their habitat.

Reduction of Marine Pollution. Reducing marine pollution can remove a source of stress that may delay natural recovery. The public frequently recommended preventive actions to stop ongoing marine pollution. However, expenditures for most activities designed to prevent catastrophic oil spills or to plan for their cleanup are not allowed by the terms of the civil settlement.

Restoration projects whose primary emphasis is to reduce marine pollution may be considered:

- where the marine pollution is likely to affect the recovery of a part of the injured marine ecosystem, or of injured resources or services; and
- where the project will not duplicate existing agency activities.

Making Decisions About General Restoration Projects

Deciding which General Restoration projects deserve funding involves deciding which restoration tasks are most important, and which projects best accomplish those tasks. When assessing the importance of a General Restoration project, at least the following factors will be considered:

- *Natural recovery.* Is the resource or service recovering? Is it likely to recover even if the General Restoration project is not funded? Will recovery take a very long time? Will the project significantly decrease the time to recovery?

- *The value of an injured resource to the ecosystem and to the public.* Is the resource an endangered or threatened species? What is its ecological significance? To what extent is it used for human purposes such as commercial fishing, recreation, or subsistence?

- *Duration of benefits.* Will the benefits be recognized twenty or thirty years from now?

- *Technical feasibility.* Are the technology and the management skills available to successfully implement the project? Projects of unproven feasibility may be funded if

  demonstrating the feasibility and then carrying out the project is likely to be an effective method of achieving restoration.

- *Likelihood of success.* If a project is successfully implemented, how likely is it to accomplish its objective? Is it possible to tell whether a project has an effect on recovery?

- *Will the project cause harmful side effects?* Restoration projects should neither adversely affect ecosystem relations nor adversely affect any injured or noninjured resource or service.

- *Will operation and maintenance support be required?* The Trustee Council will be more favorable to facilities or programs that demonstrate an ability to meet operation and maintenance needs from ~~non-Trustee sources.~~other than Joint Trustee Funds.

- *Will the project help a single resource or benefit multiple resources?* Preference will be given to projects that benefit multiple resources rather than to those that benefit a single resource. However, appropriate single-resource projects will be considered when they provide effective restoration. This approach will maximize benefits to ecosystem and to injured resources and services.

- *Effects on health and human safety.* Are there any potential health or safety hazards to the general public?

- *Consistency with applicable laws and policies.* Is the project consistent with federal and state laws and regulations, and with the policies of this plan?

- *Duplication.* Does a project duplicate the actions of another agency or group?

Habitat Protection and Acquisition

Habitat protection and acquisition is one of the principal tools of restoration. It is important in ensuring continued recovery in the spill area.

Resource development, such as harvesting timber or building subdivisions, may alter habitat that supports resources or services. Protecting and acquiring land may minimize further injury to resources and services already injured by the spill, and allow recovery to continue with the least interference. For example, the recovery of harlequin ducks might be helped by protecting nesting habitat from future changes that may hamper recovery.

Habitat protection and acquisition may include purchase of private land or interests in land such as conservation easements, mineral rights, or timber rights. Different payment options are possible, including multi-year payment schedules to a landowner. Acquired lands would be managed to protect injured resources and services. In addition, cooperative agreements with private owners to provide increased habitat protection are also possible.

Most public comments on the restoration alternatives favored using habitat protection and acquisition as a means of restoration. In addition, most of those who commented also asked that it receive a majority of the remaining settlement fund.

If restoration funds are used to protect a parcel, it must contain habitat important to an injured resource or service. The following injured resources might benefit from the purchase of private land or property rights: pink and sockeye salmon, Dolly Varden and cutthroat trout, Pacific herring, bald eagle, black oystercatcher, common murre, harbor seal, harlequin duck, marbled murrelet, pigeon guillemot, river otter, sea otter, intertidal organisms, and archaeological sites.

Habitat protection and acquisition is a means of restoring not only injured resources, but also the services (human use) dependent on those resources. Subsistence, recreation, and tourism, benefit from the protection of important fish and wildlife habitats, scenic areas, such as those viewed from important recreation or tourist routes, or important subsistence harvest areas. For example, protecting salmon spawning streams benefits not only the salmon, but also commercial, subsistence, and recreational fishermen.

Habitat protection on existing public land and water may include recommendations for changing agency management practices. The purpose, in appropriate situations, is to increase the level of protection for recovering resources and services above that provided by existing management practices. The Trustee Council may conduct studies within the spill area to determine if changes to public land and water management would help restore injured resources and services. If appropriate, changes will be recommended to state and federal management agencies. Recommendations for special designations, such as parks, critical habitats, or recreation areas, may be made to the Alaska legislature or the U.S. Congress.

Habitat and Acquisition Protection Policies

In addition to the policies of Chapter 2, the following specific policies apply to Habitat Protection and Acquisition.

- Private lands considered for purchase will be ranked according to the potential benefits that purchase and protection would provide to injured resources and services. Those parcels that greatly benefit the injured resources and services will be highly ranked.

- State and federal governments will purchase lands on the basis of a willing seller and a willing buyer.

- ~~In order to make the best use of restoration funds, purchases will not exceed fair market value.* Appraisal of individual parcels of land will precede all purchases.~~
- Land or interest in land will be acquired in accordance with applicable federal and state laws. In approving the price to be paid for an acquisition, the Trustee Council will use a standardized appraisal process and specifically consider the benefits for restoration to the injured ecosystem and resources relative to the appraised value of the property.

- Habitat protection will follow an ecosystem approach by emphasizing acquisition of large parcels, such as watersheds, that support multiple injured species and ecologically linked groups of species. Protecting and acquiring small parcels may benefit larger surrounding areas, provide access to public land, or provide critical benefits to a single resource or service.

- Public comments will be considered when determining habitat protection priorities. Many comments about specific parcels have already been received.

- Acquired land will be managed by the most appropriate state or federal agency based on the resources to be protected, management needs, and ownership of surrounding and nearby lands.
- Except where specific restoration activities for acquired land exceeds normal agency efforts, land management costs will be met from existing agency budgets.

- Lands acquired with restoration funds will be managed in a manner benefitting injured resources and services. Covenants that outline management objectives will be determined by the time of purchase.

- Subsistence use should not be displaced through acquisition or protection of land or changing management practices

Making Decisions About Habitat Protection and Acquisition

The Restoration Plan provides general guidance for Habitat Protection and Acquisition activities. More detailed guidance is given in the *Comprehensive Habitat Protection and Acquisition Process: Large Parcel Evaluation and Ranking*. That document was completed in November 1993. This comprehensive process outlines criteria and procedures for evaluating and ranking large parcels of private lands for protection and acquisition.

The large parcel analysis addresses private property parcels larger than 1,000 acres that are within the spill area and whose owners have indicated an interest in having their lands evaluated for the protection and acquisition program. For each parcel of land, the Trustee Council will decide the type of protection or ownership rights needed for restoration, and how it will be managed. In addition, for each parcel the Council will decide whether and when to begin negotiations with the landowner. The type of protection and management will also be the subject of negotiation with the landowner.

At this writing, Trustee Council staff is analyzing small parcels in the spill area whose owner has indicated a wish to participate in the process. These and similar processes will continue to provide more detailed guidance and information for habitat protection and acquisition activities.

Monitoring and Research

The Monitoring and Research program provides important information to help guide restoration activities. This information includes the status and condition of resources and services: whether they are recovering, whether restoration activities are successful, and what factors may be constraining recovery.

A lack of long-term research into ecosystem relationships and problems may result in less effective restoration and possibly continued injury. Inadequate information may require managers to unduly restrict human use of the resources, and could compound the injury to services, such as commercial fishing and subsistence. Inadequate information may also lead to management actions that inadvertently reduce the productivity and health of a resource, inappropriate restoration actions, or restoration opportunities missed for lack of knowledge.

Monitoring. Monitoring the recovery of injured resources and services has been an important part of the restoration process since the spill occurred. Information about recovery is important in designing restoration activities, and for determining which activities deserve funding. An eligible recovery monitoring project tracks the rate and degree of recovery of the resources and services injured by the spill. It may also determine when recovery has occurred. For resources that are already recovering, it may detect reversals or problems with recovery. For resources that are not recovering, monitoring may determine the status of the injury, whether it is worsening, and when the population stabilizes or recovery begins.

Monitoring is needed periodically at least until a resource recovers. Monitoring will be accomplished according to a monitoring schedule that will forecast monitoring needs and frequency. The schedule will be updated, as needed, to reflect information gained from monitoring, and other restoration activities.

Research. An eligible research project provides information needed to restore an injured resource or service. This may include information about key relationships in the ecosystem that are important for one or more injured resource or service. For example, understanding problems with food sources, habitat requirements, and other ecosystem relationships of an injured resource or service will provide information for more effective restoration and management. A project may include research to determine why an injured resource is not recovering. It may also include long-term monitoring of an ecosystem relationship that provides an important understanding for restoration of one or more injured resources. However, all research must be intended to further restoration objectives — to find out why resources are not recovering; or to understand how to accomplish restoration more effectively. The restoration program cannot fund basic research that does not further restoration.

Other Monitoring and Research Policies

In addition to the policies of Chapter 2, the following specific policies apply to Monitoring and Research.

- The Trustee Council will make or approve funding decisions about monitoring and research activities. The Council is responsible for the restoration of resources and services, including the monitoring and research component of restoration, and cannot assign that responsibility elsewhere.

- Monitoring and research proposals, as well as the overall program design, will be subject to independent scientific review. Without independent review, the Trustee Council and the public cannot be assured that scientific judgements are free of bias.

- Local advice about problems and priorities will be integrated into the decision process. The spill area is over 600 miles long. The ecological conditions and problems of the Kodiak Area are different from those of Prince William Sound. For the program to be responsive to local conditions, local advice must be integrated into the annual and long-term decisions about problems, projects, and priorities.

- To ensure the maximum benefit from a Monitoring and Research program, all parts of the program must be integrated, and techniques and protocols should be consistent where appropriate.

- The Monitoring and Research program will be integrated with existing monitoring and research activities by agencies and other groups, but it will not duplicate or replace them.

Restoration Reserve

Complete recovery from the *Exxon Valdez* oil spill will not occur for decades. For example, some salmon return in cycles of four to six years. To obtain meaningful information about the effect of the oil spill on those runs and its duration, several cycles may need to be examined. Actions to restore injured salmon runs and monitoring of their recovery could take yet additional cycles. Restoration of this resource is thus likely to span several decades into the future. Similarly, many other resources such as common murres, harlequin ducks, harbor seals, sea otters, and herring appear to be recovering slowly, if at all. Only through long-term observation and, if necessary, restoration action, can these resources be restored. Moreover, to understand the effect of these injuries on the ecosystem and to take appropriate restoration actions on an ecosystem basis will require actions well into the future.

Annual payments by Exxon Corporation to the Restoration Fund end September 2001. To prepare for that time, and to ensure that restoration activities that need to be accomplished after that time have a source of funding, the Trustee Council will place a portion of the annual payments into the Restoration Reserve.

The exact amount placed into the Reserve each year will be determined by the Trustee Council after considering the needs for that year, but will be at least $12 million each year. The Trustee Council intends these funds to be available for restoration in the years following the last payment into the trust fund by Exxon in the year 2001. However, because all restoration needs through the year 2001 are not yet known, the Trustees must have the flexibility to use the reserve to fund restoration projects that are clearly needed and cannot be funded by other means. Therefore, while the Council expects the principal and interest from the reserve to be available following Exxon's last payment, the Trustee Council may, following a finding of need, use the principal or interest retained within the fund before that time.

As part of the 1994 Work Plan, the Council made an initial allocation of $12 million. At this writing, an additional $12 million is proposed in the Draft 1995 Work Plan. If at least $12 million is placed into the reserve each year through 2001, $108 million or more plus interest would be available for funding restoration after Exxon payments end. Funds from the Restoration Reserve could potentially benefit any resource or service injured by the oil spill. All expenditures from the Restoration Reserve must be consistent with the requirements of the Court Settlement.

Public Information, Science Management, and Administration

Funding is required to prepare work plans, negotiate for habitat purchases, provide independent scientific review, involve the public, and operate the restoration program. These are necessary administrative expenses that are not attributable to a particular project. The Public Information, Science Management, and Administration category includes these and other public information and outreach functions, including the Public Advisory Group.

The public has voiced concern that too much money is being spent on administration. Administrative expenses averaged 26% of the 1992 Work Plan, 8% of the 1993 Work Plan, and ___% of the 1994 Work Plan. As more restoration activities occur, and as initial planning and implementation expenses are finished, administrative expenses will decrease both in absolute terms and as a percentage of the work plan.

Public Information and Administration Policy

The Trustee Council will seek to minimize the administrative cost of the restoration program. The goal is for administrative costs to average no more than 5% of overall restoration expenditures over the remainder of the settlement period (through October 2001).

Chapter 4
Injury

Background

The *Exxon Valdez* struck Bligh Reef in March, just before the most biologically active season of the year. The resulting oil spill occurred during the seaward migration of salmon fry, major migrations of birds, and the primary breeding season of most species of birds, mammals, fish, and marine invertebrates in the spill's path. Many animals, such as sea otters and marine birds, were killed by the oil in open water. Approximately 1,500 miles of southcentral Alaska's coastline were oiled (about 350 miles were heavily oiled), frequently with devastating impact to the upper intertidal zone. Direct oiling killed many organisms, and beach cleaning, particularly high-pressure, hot-water washing, had a devastating effect on some intertidal communities. The spill also affected services (human uses), including subsistence, recreation, commercial fishing, and other uses. Some resources and services remain vulnerable to persistent oil in intertidal areas.

Injury to Biological Resources

Natural resource injuries from exposure to oil spilled by the *Exxon Valdez* or due to the cleanup include:

(1) **Mortality.** Death caused immediately or after a period of time by contact with oil, clean-up activities, reductions in critical food sources caused by the spill, or other causes.

(2) **Sublethal Effects.** Injuries that affect the health and physical condition of organisms (including eggs and larvae), but do not result in the death of juvenile or adult organisms. However, injuries that initially appear to be sublethal can, over time, be fatal. Also, some sublethal effects, such as reproductive impairment, can eventually result in population reductions.

(3) **Degradation of Habitat.** Alteration or contamination of flora, fauna, and the physical components of the habitat.

Due to the large geographical area, multiple habitat types, and many species impacted by the spill, it is highly unlikely that all injuries to natural resources will be studied or fully documented.

Injuries Resulting in a Population Decline. The most serious injuries result in large population declines. In these cases, injury may persist for more than one generation. For example, the common murre was the most severely impacted bird species. Several large colonies in the Gulf of Alaska may have lost 35 to 70% of their breeding adults, a loss that may not be restored for many generations. Another example is in intertidal areas where populations of many species of plants and invertebrates declined as a result of oiling and cleanup.

If serious enough, mortality, sublethal injuries, or degradation of habitat may result in measurable population declines. For example, sublethal injuries that impair reproductive ability in a large portion of a population could result in a population decline.

Injuries Not Resulting in a Measurable Population Decline. There are several reasons why population declines were not measured in some species.

(1) The injury may not have been severe enough to cause mortality or a population decline.

(2) Spill-related population declines may have been impossible to distinguish from natural variations in population levels. Population census techniques are usually able to detect only relatively large population changes.

(3) Population declines may have occurred initially but some species may have compensated by increasing productivity. The net effect would be no reduction in population.

(4) Some species were not studied or were studied insufficiently to determine any injury, including population declines.

Injury to Other ~~Natural~~ Resources

The cleanup increased public knowledge of archaeological site locations, which resulted in looting and vandalism of archaeological resources. Also, archaeological sites may have been damaged by oiling. Archaeological resources could be irretrievably lost if looting and vandalism continue. Since archaeological resources, such as sites and artifacts, are not living, renewable resources, they have no capacity to heal themselves.

The spilled oil also contaminated waters adjacent to designated Wilderness Areas, and was deposited above the high tide line in many cases. The intense cleanup resulted in an unprecedented disturbance of the area's undeveloped and normally uninhabited landscape. The massive intrusion of people and equipment associated with cleanup has ended, but direct injury to wilderness and intrinsic values lingers.

Reduced or Lost Services

The oil spill impacted a wide range of services (human uses), including commercial fishing, subsistence (hunting, fishing, and gathering), passive use, recreation and tourism. Examples of recreation include sea kayaking, backcountry camping, sport fishing, and hunting.

Services were reduced or lost if the *Exxon Valdez* oil spill or cleanup:

(1) reduced the physical or biological functions performed by natural resources that support services; or
(2) reduced aesthetic and intrinsic values, or other indirect uses provided by natural resources; or
(3) reduced the desire of people to use a natural resource or area.

Resources and Services Injured by the Spill

~~Table ___ lists resources and services injured by the spill.~~ Table 1 lists the resources and services injured by the spill. The table breaks down biological resources into those that are recovering and not recovering, and those for which the recovery status is unknown. It includes only those biological resources for which scientific research has demonstrated a population-level injury, or continuing chronic effects. A complete list of injuries demonstrated from damage assessment or restoration studies is given in Appendix A.

Because restoration funds must be used to restore resources and services injured by the spill, the injury lists have considerable importance in determining restoration activities. This lists in this plan are based on the best available information to date, but they are not necessarily a final summarization of resources that have been injured. Because of the large geographical area, multiple habitat types, and many species impacted by the oil spill, it is likely that not all injuries to natural resources were studied or fully documented. If new information or research demonstrates spill-induced population declines or continued sublethal impacts in other biological resources, then the lists must be amended to include additional resources as appropriate.

Restoration actions may address resources that are not listed as injured if these activities will benefit an injured resource or service. For example, it may be permissible to focus activities on an uninjured resource if aiding the resource will help a service such as subsistence or commercial fishing, or if it is a necessary part of a research project designed to help understand the injuries of an injured resource. (See Policy 4 in Chapter 2).

Table 2. Resources and Services Injure by the Spill
Biological resources in the table experienced population-level or continuing sublethal injuries

INJURED RESOURCES			Lost or Reduced SERVICES
Biological Resources		Other	
Recovering Bald eagle Black oystercatcher Intertidal organisms (some) Killer whale Mussels Sockeye salmon (Red Lake) Subtidal organisms (some)	**Not Recovering** Common murre Harbor seal Harlequin duck Intertidal org. (some) Marbled murrelet Pacific herring Pigeon guillemot Pink salmon Sea otter Sockeye salmon (Kenai & Akalura systems) Subtidal organisms (some)	Archaeological resources Designated wilderness areas Sediment	Commercial fishing Passive uses Recreation and Tourism including sport fishing, sport hunting, and other recreation uses Subsistence
Recovery Unknown Clams Cutthroat trout Dolly Varden River otter Rockfish			

Amending the List of Injured Resources and Services. The list of injured resources and services will be reviewed as new information is obtained. For example, research and monitoring will hopefully show that recovery is beginning for many of the resources which currently show little or no signs of recovery. In addition, information may be submitted to add resources to the list. This information can include research results, assessment of population trends, ethnographic and historic data, and supportive rationale. Information that has been through an appropriate peer-review process is preferable. If data have not been peer-reviewed, they should be presented in a format that permits and facilitates peer-review. Information to change the list will be peer-reviewed through the Trustee Council's scientific review process.

Chapter 5
Goals, Objectives and Strategies

This chapter presents goals, objectives, and strategies for restoration. The first part of this chapter discusses goals, objectives and strategies in general. The second part describes the nature and extent of injury and recovery, the recovery objective, and the restoration strategy for each injured resource and service discussed in Table 2 in Chapter 4. Detailed information on injury, objectives and strategies can be found on the following pages:

Resource or Service	Page
Archaeological Resources	38
Bald Eagles	39
Black Oystercatchers	39
Clams	40
Commercial Fishing	41
Common Murres	42
Cutthroat Trout	42
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Intertidal Organisms	46
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Sediments	53
Sockeye Salmon	54
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Overview

The first part of this chapter discusses goals, objectives and strategies in general. A goal is the end toward which an endeavor is directed; objectives are measurable outcomes; and strategies are plans of action. Taken together, goals, objectives and strategies produce a blueprint for restoring the spill-~~affected~~ area. To be funded, a project must be consistent with the policies, objectives and restoration strategies of this Restoration Plan.

Goal: *The end toward which restoration is directed*

The goal of restoration is recovery of all injured resources and services. Recovery is to be sustained by healthy, productive ecosystems that maintain naturally occurring biodiversity. All restoration actions must be directed toward this goal.

Objectives: *Measurable outcomes of restoration*

The objectives of the restoration program are measurable conditions that signal the recovery of individual resources or services. They are the yardstick against which the success of the program is measured.

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. For resources that were in decline before the spill, like marbled murrelets, recovery may consist of stabilizing the population at a lower level than before the spill. For some resources, little is known about their injury and recovery, so it is difficult to define recovery.

Where little prespill data exist, injury is inferred from comparison of oiled and unoiled areas, and recovery is usually defined as a return to conditions comparable to those of unoiled areas. Because the differences between oiled and unoiled areas may have existed before the spill, statements of injury and objectives based on these differences are often less certain than in those cases where prespill data exist. However, there can also be some uncertainty associated with interpreting the significance of prespill population data since populations undergo natural fluctuations. Indicators of recovery can include increased numbers of individuals, reproductive success, improved growth and survival rates, and normal age and sex composition of the injured population.

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.

Strategies: *Plans of action*

A restoration strategy is a plan of action for achieving objectives. Each year, the Trustee Council decides, through its annual or multiyear work plan, which of these strategies to implement.

In this section, restoration strategies are presented under three headings: Biological Resources, Other Resources, and Services. Because restoration strategies for biological resources depend on whether they are recovering or not, they are subdivided into strategies for recovering resources, resources that are not recovering, and resources whose recovery is unknown.

Restoration strategies reflect consideration of ecosystem relationships. For example, the strategy for some injured resources includes research into why they are not recovering, such as declining or contaminated food sources or disruption of ecosystem relationships.

Biological Resources

Recovering

The fact that a resource is recovering suggests that nature will restore it without intervention. Consequently, restoration of recovering resources will rely primarily on natural recovery.

Because these resources are recovering, Research into factors limiting recovery and General Restoration projects to accelerate recovery may ~~are~~ not be warranted. However, if a resource is not expected to recover fully on its own or if waiting for natural recovery will cause long-term harm to a community or service, appropriate alternative means of restoration would be undertaken. Habitat Protection and Monitoring are encouraged, as are General Restoration projects that protect the resource from other sources of potential injury. (Restoration strategies under "Services" also apply to these resources.)

The restoration strategy for recovering resources has three parts:

Rely on natural recovery.
Monitor recovery.
Protect injured resources and their habitats.

Resources Not Recovering

Except for certain protective measures, attempts to restore these resources without knowing why they are not recovering may be ineffectual or even detrimental. For this reason, the restoration strategy for these resources emphasizes determining why they are not recovering and eliminating threats to the remaining populations.

Where sufficient knowledge about the nature of injury exists, the restoration strategy also encourages actions to promote recovery because the populations of some of these resources are in a steep decline and may not recover without help and some of these resources have subsistence or economic importance and their recovery is linked to the recovery of these services. (Restoration strategies under "Services" also apply to these resources.)

Research is encouraged, provided it helps explain why a resource is not recovering. Habitat Protection and Monitoring are also encouraged. General Restoration projects are allowed if they address factors limiting recovery or if they protect the resource from other sources of potential injury.

The restoration strategy for resources that are not recovering has four parts:

Conduct research to find out why these resources are not recovering.
Initiate, sustain, or accelerate recovery.
Monitor recovery.
Protect injured resources and their habitats.

Recovery Unknown

If it is unknown whether a resource is recovering, it will be treated in much the same way as a recovering resource. Until more is known about the nature and extent of injuries and the degree of recovery for these resources, restoration will rely primarily on natural recovery, aided by monitoring and protective measures.

Because the recovery of these resources is unknown and, in some cases, the injury poorly understood, Research into factors limiting recovery and General Restoration projects to accelerate recovery ~~are~~ may not be warranted and may not be possible. Habitat Protection and Monitoring are encouraged, as are General Restoration projects that protect these resources from other sources of potential injury.

The restoration strategy for resources whose recovery is unknown has three parts:

Rely on natural recovery.
Monitor recovery.
Protect injured resources and their habitats.

Other Resources

Other resources include Archaeological Resources, Designated Wilderness Areas and Sediment. The strategy for restoring archaeological resources seeks to repair and protect injured sites and artifacts. No objectives have been identified which benefit only designated Wilderness Areas or Wilderness Study Areas, so the strategy alludes to any that aid recovery of injured resources, or prevents further injuries. The strategy for sediment includes removal

or reduction of residual oil ~~under certain circumstances~~ and monitoring.

Services

Injured services include commercial fishing, passive use, recreation and tourism (including sport fishing) and subsistence. Injured resources that support these services include clams, harbor seals, Pacific herring, pink salmon, sea otters and sockeye salmon. The primary way to restore services is to restore the resources on which they depend.

~~Restoration strategies for services are tailored to the resource injury that affected the service. However,~~ Additional restoration strategies for commercial fishing, recreation and tourism, and subsistence include promoting recovery of the service as soon as possible through such means as increasing the availability, reliability or quality of the resource on which the service depends. For some resources this may take the form of increasing availability in the long run through improved resource management or providing replacement resources. Strategies for recreation and tourism and subsistence also includes removing or reducing residual oil if it is cost effective and less harmful than leaving it in place. ~~These services support most of the communities in the spill area and waiting for natural recovery of these resources may significantly harm a community. Most of the resources that support these services — harbor seals, Pacific herring, pink salmon, sea otters and sockeye salmon — show little or no sign of recovery.~~

Injury and Recovery, Objectives and Strategies by Resource and Service

This section describes the nature and extent of injury and recovery, the recovery objective, and the restoration strategy for each injured resource and service. The information in this section is expected to change over time as the restoration program adapts to new information. For example, population decline or sublethal effects may be documented for new resources, some resources may begin to recover, and objectives and strategies may change in response to new conditions. Hypotheses for why resources are not recovering are particularly susceptible to change as prevailing hypotheses are tested and new ones are formed.

New scientific data will be incorporated into restoration decisions without the need to change the plan. However, changes will be reported in the Trustee Council's ~~A~~annual status ~~R~~report.

Archaeological Resources

Injury and Recovery: Twenty-four archaeological sites are known to have been adversely affected by clean-up activities, or looting and vandalism linked to the oil spill. 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 has been disturbed, which has 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 suggest that most of the archaeological vandalism that can be linked to the *Exxon Valdez* oil spill occurred in 1989 before adequate constraints were put into place over the activities of oil spill cleanup personnel. Most vandalism took the form of "prospecting" for high yield sites. In 1993, only two of the 14 sites visited showed signs of continued vandalism and the link between this recent vandalism and the *Exxon Valdez* oil spill remains highly problematical. Oil samples have not yet been analyzed, but oil was visible in the intertidal zones of two of the 14 sites.

Recovery Objective: Archaeological resources are nonrenewable: they cannot recover in the same sense as biological resources. Archaeological resources will be considered recovered when spill-related injury ends; looting and vandalism are at or below prespill levels; and the artifacts and scientific data which remain in vandalized sites are preserved. Artifacts and data are typically preserved through excavation or other forms of documentation, or through site stabilization, depending on the nature of the injury and the characteristics of the site.

Restoration Strategy:

Repair spill-related injury to archaeological sites and artifacts. Injuries may be repaired to some extent through stabilizing eroding sites, or removing and restoring artifacts.

Protect sites and artifacts from further injury and store them in appropriate facilities.

Archaeological sites and artifacts could be protected from further injury through the reduction of looting and vandalism, or the removal of artifacts from sites and storage in an appropriate facility. Opportunity for people to view or learn about the cultural heritage of people in the spill area would also provide protection by increasing awareness and appreciation of cultural heritage and would replace services lost as a result of irretrievable damage to some artifacts.

Monitor recovery. Monitor a small number of sites vulnerable to serious, commercial looting.

Bald Eagles

Injury and Recovery: Two hundred to 300 bald eagles may have been killed in the spill. However, population estimates made in 1989, 1990, and 1991 indicate that there may have been an increase in the Prince William Sound bald eagle population since the previous survey conducted in 1984. Productivity decreased in 1989, but appeared to have recovered by 1990. Because population and productivity appear to have returned to prespill levels, bald eagles may have already recovered from the effects of the spill.

Recovery Objective: Bald eagles will have recovered when their population and productivity return to prespill levels.

Restoration Strategy:

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

Monitor recovery. Monitor the population and productivity of bald eagles in Prince William Sound until full recovery is confirmed and perhaps at intervals thereafter. The eagle population in Prince William Sound is expected to increase to its prespill level in 1994. There are not enough prespill data on eagle populations in other parts of the spill area to warrant surveys outside Prince William Sound.

Protect bald eagles and their habitat. With regard to bald eagles, the objective of habitat protection is to ensure maintenance of adequate nesting habitat and reduce disturbance in feeding and roosting areas.

Black Oystercatchers

Injury and Recovery: Within Prince William Sound, an estimated 120 to 150 black oystercatchers, representing 12 to 15 percent of the total estimated population, died as a result of the spill. Mortality outside of Prince William Sound is unknown. Black oystercatchers are recovering, although they may still be exposed to hydrocarbons when feeding in intertidal areas.

Recovery Objective: Black oystercatchers will have recovered when Prince William Sound

populations attain prespill levels and when reproductive success of nests and growth rates of chicks raised in oiled areas are comparable to those in unoiled areas.

Restoration Strategy:

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

Monitor recovery. Monitor population abundance and distribution and the growth rates of chicks.

Protect black oystercatchers and their habitat. With regard to black oystercatchers, the objective of habitat protection is to reduce disturbance to feeding and nesting sites.

Clams

Injury and Recovery: Littleneck clams and butter clams on sheltered beaches were killed by oiling and cleanup activities. In addition, growth appeared to be reduced by oil, but determination of sublethal or chronic effects is awaiting final analyses.

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 (prespill data or non-oiled control sites).

Restoration Strategy: Clams are important for subsistence use and also serve as prey for sea otters and sea ducks such as harlequin ducks and pigeon guillemots. For additional restoration strategies, see *Subsistence*, *Sea Otters*, *Harlequin Ducks* and *Pigeon Guillemots*.

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

~~*Accelerate recovery of clam beds important to the recovery of subsistence users and sea otters.* Because clams are an important food source for sea otters and food is believed to be limiting their recovery, actions taken to accelerate recovery of clam beds may hasten the recovery of sea otters. Clams are also an important subsistence food. Restoration of clam beds harvested for subsistence use before the spill may aid recovery of subsistence.~~

Monitor recovery. Monitor the density and size of clams in select clam beds~~ throughout the spill area~~.

Protect injured clam beds. With regard to intertidal biota like clams, the objective of habitat protection is to maintain water quality along the shoreline and reduce disturbance in nearshore areas. Clams can also be protected by reducing marine pollution.

Commercial Fishing

Injury and Recovery: Commercial fishing was injured through injury to commercial fish species and also through fishing closures. Continuing injuries to commercial fishing may cause hardships for fishermen and related businesses. Each year that commercial fishing remains below prespill levels compounds the injury to the fishermen and, in many instances, the communities in which they live or work.

The Trustee Council recognizes the impact to communities and people of the Prince William Sound region resulting from the sharp decline in pink salmon and herring fisheries in past years. In 1994, the Trustee Council committed over six million dollars to help address these issues through the development of an ecosystem-based study for Prince William Sound. Some of the pink salmon and herring problems may be unrelated to the spill. However, the Council will continue to address these important problems ~~as they relate to the oil spill~~.

Recovery Objective: Commercial fishing will have recovered when the population levels and distribution of injured or replacement fish used by the commercial fishing industry match conditions that would have existed had the spill not occurred. Because of the difficulty of separating spill-related effects from other changes in fish runs, the Trustee Council may use prespill conditions as a substitute measure for conditions that would have existed had the spill not occurred.

Restoration Strategy: The primary way of restoring commercial fishing is to restore the species that are fished commercially, such as pink salmon, Pacific herring and sockeye salmon. These are discussed elsewhere in this chapter. Three additional parts of the strategy for restoring commercial fishing are the following:

Promote recovery of commercial fishing as soon as possible. Many communities that rely on commercial fishing will be significantly harmed while waiting for commercial fish resources to recover through natural recovery alone. Therefore, an objective of restoration is to accelerate recovery of commercial fishing. This objective may be accomplished through increasing availability, reliability, or quality of commercial fishing resources, depending on the nature of the injury. For resources that have sharply declined since the spill, like pink salmon and Pacific herring in Prince William Sound, this objective may take the form of increasing availability in the long run through improved fisheries management. Another example is providing replacement fish for harvest.

Protect commercial fish resources from further degradation. Further stress on commercial fish resources could impede recovery. Appropriate protection can take the form of habitat protection and acquisition if a resource faces loss of habitat. The Trustee Council can also contribute to the protection of commercial fish species by providing information needed to improve their management. ~~Protective action could also include protective management practices if a resource or service faces further injury from human use and activities.~~

Monitor recovery. Monitoring the recovery of commercial fishing will track the progress of recovery, detect major reversals, and identify problems with the resources and resource management that may affect the rate or degree of recovery. Inadequate information may require managers to unduly restrict use of the injured resources, compounding the injury to commercial fishing.

Common Murres

Injury and Recovery: Productivity of common murres shows signs of recovery at some injured colonies (Barren Islands, Puale Bay) but postspill population counts are still lower than prespill estimates and show no sign of recovery.

Recovery Objective: Common murres will have recovered when population trends are increasing significantly at index colonies in the spill area and when reproductive timing and success are within normal bounds. (Normal bounds will be determined by comparing productivity data with information from other murre colonies in the Gulf of Alaska and elsewhere.)

Restoration Strategy:

Conduct research to find out why common murres are not recovering. Suspected causes include avian predation and behavioral change that inhibits breeding productivity at some colonies.

Initiate, sustain, or accelerate recovery. Once scientists determine why common murres are not recovering, efforts may be undertaken to accelerate recovery.

Monitor recovery. Monitor populations at ~~the following~~ index colonies: ~~-~~ such as the Chiswell Islands, Barren Islands, Triplets, Ungaiushak Island and Puale Bay. In addition, monitor the productivity of common murres at the Barren Islands.

Protect common murres and their habitat. With regard to common murres, the objective of habitat protection is to reduce disturbance in nearshore feeding areas and near nesting colonies.

Cutthroat Trout

Injury and Recovery: Cutthroat trout have grown more slowly in oiled areas than in unoiled areas. Insufficient data are available to determine whether they are recovering.

Recovery Objective: Cutthroat trout will have recovered when growth rates within oiled areas are comparable to those for unoiled areas.

Restoration Strategy: Cutthroat trout is one of the species on which sport fishing in the spill area depends. For additional restoration strategies, see *Recreation and Tourism.*

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

~~*Promote recovery of sport fishing as soon as possible.* Although the strategy for restoring cutthroat trout relies on natural recovery, action should be taken to promote recovery of sport fishing because cutthroat trout is an important sport fish species. Increasing the availability, reliability, or quality of sport fish species may help restore sport fishing in the spill-affected area.~~

Monitor recovery. Monitor growth rates in injured populations.

Protect cutthroat trout and their habitat. With regard to cutthroat trout, the objective of habitat protection is to ensure maintenance of adequate water quality, riparian habitat and intertidal habitat for spawning. The Trustee Council can also contribute to the protection of cutthroat trout by providing information needed to improve their management. ~~Cutthroat trout can also be protected by improving their management.~~ Examples of protective management practices are the conservative limits on sport-fish harvests that have been adopted by the Board of Fish for parts of Prince William Sound ~~and are likely to remain in effect until cutthroat trout recover~~.

Designated Wilderness Areas

Injury and Recovery: The oil spill delivered oil in varying quantities to the waters adjoining the seven areas within the spill area designated as wilderness areas and wilderness study areas. Oil was also deposited above the mean high tide line in these areas. During the intense cleanup seasons of 1989 to 1990, hundreds of workers and thousands of pieces of equipment were at work in the spill area. This activity was an unprecedented imposition of people, noise, and activity on the area's undeveloped and normally sparsely occupied landscape.

Recovery Objective: Designated Wilderness Areas will have recovered when oil is no longer encountered in these areas and the public perceives them to be recovered from the spill.

Restoration Strategy: Any restoration ~~objective~~ strategy which aids recovery of injured resources, or prevents further injuries, will assist recovery of designated wilderness areas. No ~~objectives~~ strategies have been identified which benefit only designated wilderness areas without also addressing injured resources.

Dolly Varden

Injury and Recovery: Dolly Varden have grown more slowly in oiled areas than in unoiled areas. Insufficient data are available to determine whether they are recovering.

Recovery Objective: Dolly Varden will have recovered when growth rates within oiled areas are comparable to those for unoiled areas.

Restoration Strategy: Dolly Varden is one of the species on which sport fishing in the spill area depends. For additional restoration strategies, see *Recreation and Tourism*.

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

~~*Promote recovery of sport fishing as soon as possible.* Although the strategy for restoring Dolly Varden relies on natural recovery, action should be taken to promote recovery of sport fishing because Dolly Varden is an important sport fish species. Increasing the availability, reliability, or quality of sport fish species may help restore sport fishing in the spill-affected area.~~

Monitor recovery. Monitor growth rates in injured populations.

Protect Dolly Varden and their habitat. With regard to Dolly Varden, the objective of habitat protection is to ensure maintenance of adequate water quality, riparian habitat and intertidal habitat for spawning and rearing. ~~Dolly Varden can also be protected by improving their management.~~ The Trustee Council can also contribute to the protection of Dolly Varden by providing information needed to improve their management. Examples of protective management practices are the conservative limits on sport-fish harvests that have been adopted by the Board of Fish for parts of Prince William Sound and are likely to remain in effect until Dolly Varden recover.

Harbor Seals

Injury and Recovery: Harbor seal numbers were declining in Prince William Sound before the spill. Following the spill, seals in the oiled area had declined 43%, compared to 11% in the unoiled area. Counts made during the molt at trend count sites in Prince William Sound during 1990-1993 indicate that numbers may have stabilized. However, counts during pupping have continued to decline. It is not known which counts are the best indicator of population status. If the conditions that were causing the population to decline before the spill have improved, normal growth may replace the animals that were lost. However, if conditions continue to be unfavorable, the affected population may continue to decline. Harbor seals are a key subsistence resource in Prince William Sound and subsistence hunting is both affected by and may be affecting harbor seal status.

Recovery Objective: Recovery will have occurred when harbor seal population trends are stable or increasing.

Restoration Strategy: Harbor seals are important for subsistence use. For additional restoration strategies, see *Subsistence*.

Conduct research to find out why harbor seals are not recovering. Suspected causes include limited or changing availability of prey, particularly forage fishes; predation by killer whales; and resource exploitation through subsistence take or incidental take associated with fisheries.

Initiate, sustain, or accelerate recovery of harbor seals. Once scientists determine why harbor seals are not recovering, efforts may be undertaken to accelerate recovery.

~~*Promote recovery of subsistence as soon as possible.* Harbor seals are an important subsistence resource. In addition to accelerating the recovery of harbor seals, promote recovery of services that depend on them by increasing the availability, reliability, or quality of subsistence resources, or increasing the confidence of subsistence users.~~

Monitor recovery. Monitor trends in Prince William Sound during pupping and molting for comparison with previous years' data.

Protect harbor seals and their habitat. With regard to harbor seals, the objective of habitat protection is to reduce disturbance at haul-out sites, pupping sites, and in nearshore feeding areas. Another way of protecting harbor seals is to provide information that will help subsistence hunters assess the effects of their harvest.

Harlequin Ducks

Injury and Recovery: There are indications of reduced densities of birds in the breeding season; a declining trend in the summer, postbreeding population; and very poor production of young in western Prince William Sound.

Recovery Objective: Harlequin ducks will have recovered when breeding and postbreeding season densities and production of young return to estimated prespill levels, or when there are no differences in these parameters between oiled and unoiled areas.

Restoration Strategy: Harlequin ducks are hunted for subsistence and sport. For additional restoration strategies, see *Subsistence* and *Recreation and Tourism.*

Conduct research to find out why harlequin ducks are not recovering. Although the cause of reproductive failure among resident birds is unknown, it is believed to be ingestion of oil-contaminated prey from foraging in oiled mussel beds.

Initiate, sustain, or accelerate recovery. Once scientists determine why harlequin ducks are not recovering, efforts may be undertaken to accelerate recovery. If ingestion of oiled mussels is found to limit the recovery of harlequin ducks, cleaning oiled mussel beds may hasten recovery.

Monitor recovery. Monitor the breeding-age population in Prince William Sound, as well as numbers of young, brood distribution, and abundance of postbreeding harlequins.

Protect harlequin ducks and their habitat. With regard to harlequin ducks, the objective of habitat protection is to ensure maintenance of adequate riparian habitat for nesting and brood rearing, and reduce disturbance to nearshore feeding, molting, brood-rearing habitats.

~~Harlequin ducks can also be protected by improving their management.~~ The Trustee Council can also contribute to the protection of harlequin ducks by providing information needed to improve their management. An example of protective management practices is the restriction on sport hunting of harlequin ducks that was imposed by the Board of Game in 1991.

Intertidal Organisms

Injury and Recovery: The lower intertidal zone and, to some extent, the middle intertidal zone are recovering. However, injuries persist in the upper intertidal zone, especially on rocky sheltered shores. Recovery of this zone appears to depend, in part, on the return of adult *Fucus* in large numbers.

Recovery Objective: Each intertidal elevation (lower, middle, or upper) will have recovered when community composition, population abundance of component species, age class distribution and ecosystem functions and services in each injured intertidal habitat have returned to levels that would have prevailed in the absence of the oil spill.

Restoration Strategy:

Conduct research to find out why some intertidal organisms are not recovering. Possible explanations include changes in the community structure resulting from spill-induced changes in predators; changes in the population of benthic prey; and limitations in recruitment processes (the availability of new organisms to repopulate the area).

Initiate, sustain, or accelerate recovery. Once scientists determine why some intertidal organisms are not recovering, efforts may be undertaken to accelerate recovery.

Monitor recovery. Monitor matched oiled and nonoiled intertidal sites ~~throughout the spill area~~, incorporating a variety of habitat types ~~in each region~~.

Protect intertidal organisms and their habitat. With regard to intertidal biota, the objective of habitat protection is to maintain water quality along the shoreline and reduce disturbance in nearshore areas. Intertidal organisms can also be protected by reducing marine pollution.

Killer Whales

Injury and Recovery: Thirteen whales disappeared from one pod in Prince William Sound between 1988 and 1990. The injured pod is growing again.

Recovery Objective: Killer whales will have recovered when the injured pod grows to at least 36 individuals (1988 level).

Restoration Strategy:

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

Monitor recovery. Monitor the injured pod (AB pod) of killer whales in Prince William Sound.

~~*Protect killer whales and their habitat.* If further protection is necessary, it could be provided through management practices, the reduction of marine pollution, and protection of important marine habitat.~~

Marbled Murrelets

Injury and Recovery: Marbled murrelet populations in Prince William Sound were in decline before the spill. The causes of the prespill decline are unknown. The oil spill probably increased the prespill rate of decline for this species in the spill area, although the incremental injury is difficult to estimate. The population of marbled murrelets may be stabilizing or even increasing since the spill.

Recovery Objective: Marbled murrelets will have recovered when population trends are increasing.

Restoration Strategy:

Conduct research to find out why marbled murrelets are not recovering. Likely causes include avian and mammalian predation, climatic/oceanographic features, and prey limitation. Also of concern are the effects of resource exploitation (incidental gillnet catch) and upland development.

Initiate, sustain, or accelerate recovery. Once scientists determine why marbled murrelets are not recovering, efforts may be undertaken to accelerate recovery.

Monitor recovery. Monitor the marbled murrelet population in Prince William Sound.

Protect marbled murrelets and their habitat. With regard to marbled murrelets, the objective of habitat protection is to ensure maintenance of adequate nesting habitat and reduce disturbance to nearshore feeding and broodrearing habitats.

Mussels

Injury and Recovery: In 1991, relatively high concentrations of oil were found in mussels and in the dense underlying mat (byssal substrate) of certain oiled mussel beds. These beds were not cleaned or removed after the spill and are potential sources of fresh (unweathered) oil for harlequin ducks, black oystercatchers, river otters, and juvenile sea otters, all of which feed on mussels and show signs of continuing injury. The extent and magnitude of oiled mussel beds are unknown.

Recovery Objective: Mussels will have recovered when their populations and productivity are at prespill levels and they do not contain oil that contaminates higher trophic levels.

Restoration Strategy:

Initiate, sustain, or accelerate recovery. Cleaning oiled mussel beds hastens their recovery and that of species that feed on them, such as harlequin ducks and juvenile sea otters.

Monitor recovery. Monitor the health of mussels and the concentration and degradation of oil in mussel beds identified as contaminated ~~will be monitored~~.

Protect mussels and their habitat. With regard to intertidal biota like mussels, the objective of habitat protection is to maintain water quality along the shoreline and reduce disturbance in nearshore areas. Mussels can also be protected by reducing marine pollution.

Pacific Herring

Injury and Recovery: Pacific herring studies have demonstrated egg mortality and larval deformities. Populations may have declined, but there is uncertainty as to the full extent and mechanism of injury. However, the stocks and dependent fisheries in Prince William Sound are not healthy, as indicated by the low spawning biomass in 1993 and 1994 and the resultant elimination of the fisheries in those years.

Recovery Objective: Pacific herring will have recovered when populations are healthy and productive and exist at prespill abundances.

Restoration Strategy: Pacific herring is important for subsistence use and commercial fishing. For additional restoration strategies, see *Subsistence* and *Commercial Fishing*.

Conduct research to find out why Pacific herring are not recovering. A leading hypothesis is that when the abundance of zooplankton is low, predatory fish and birds switch from a zooplankton diet to juvenile salmon and herring, thereby reducing survival of the juveniles. Other possible causes are disease, heritable genetic damage, oil toxicity, the impact of winter conditions on herring survival and reproductive success, and the advective transport of herring larvae from rearing areas in Prince William Sound.

Initiate, sustain, or accelerate recovery of Pacific herring. Once scientists determine why Pacific herring are not recovering, efforts may be undertaken to accelerate recovery.

~~*Promote recovery of subsistence and commercial fishing as soon as possible.* Pacific herring is an important subsistence food source and commercial fish species. In addition to accelerating the recovery of Pacific herring, promote recovery of services that depend on them by increasing the availability, reliability, or quality of subsistence resources and commercial fish species.~~

Monitor recovery. Monitor fish health and spawning biomass.

Protect Pacific herring and their habitat. With regard to Pacific herring, the objective of habitat protection is to ensure maintenance of adequate water quality, riparian habitat and intertidal habitat for spawning and rearing. ~~Pacific herring can also be protected by improving their management.~~ The Trustee Council can also contribute to the protection of Pacific herring by providing information needed to improve their management. An example of protective management practices is the closure of the fishery by the Alaska Department of Fish and Game due to the failure of the herring run in Prince William Sound in 1993 and 1994 ~~prompted the Alaska Department of Fish and Game to close the fishery~~.

Passive Use

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.

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.

Restoration Strategy: Any restoration ~~objective~~ strategy which aids recovery of injured resources, or prevents further injuries, will assist recovery of passive-use values. No ~~objectives~~ strategies have been identified which benefit only passive uses, without also addressing injured resources. Since recovery of passive uses requires that people know when recovery has occurred, the availability to the public of the latest scientific information will continue to play an important role in the restoration of passive uses.

Pigeon Guillemot

Injury and Recovery: The pigeon guillemot population in Prince William Sound was in decline before the spill. The causes of the prespill decline are unknown.

Recovery Objective: Pigeon guillemots will have recovered when populations are stable or increasing.

Restoration Strategy:

Conduct research to find out why pigeon guillemots are not recovering. Likely causes include climatic/oceanographic features, prey limitation, and predation.

Initiate, sustain, or accelerate recovery. Once scientists determine why pigeon guillemots are not recovering, efforts may be undertaken to accelerate recovery.

Monitor recovery. Monitor the pigeon guillemot population in Prince William Sound.

Protect pigeon guillemots and their habitat. With regard to pigeon guillemots, the objective of habitat protection is to ensure maintenance of adequate nesting habitat and reduce disturbance to nearshore feeding and broodrearing habitats.

Pink Salmon

Injury and Recovery: Pink salmon studies have demonstrated egg mortality, fry deformities, and reduced growth in juveniles. Populations may have declined, but there is uncertainty as to the full extent and mechanism of injury. However, there is evidence of continued damage in some stocks from exposure to oil, and there have been unexpectedly poor runs of both wild and hatchery stocks of pink salmon in Prince William Sound ~~since the spill~~ in 1992 and 1993. In 1994, runs were still depressed but exceeded forecasts.

Recovery Objective: Pink salmon will have recovered when populations are healthy and productive and exist at prespill abundance. An indication of recovery is when egg mortalities in oiled areas match prespill level or levels in unoiled areas.

Restoration Strategy: Pink salmon is important for subsistence use and commercial fishing. For additional restoration strategies, see *Subsistence* and *Commercial Fishing*.

Conduct research to find out why pink salmon are not recovering. A leading hypothesis is that when the abundance of zooplankton is low, predatory fish and birds switch from a zooplankton diet to juvenile salmon and herring, thereby reducing survival of the juveniles. Other possible causes are heritable genetic damage and oil toxicity.

Initiate, sustain, or accelerate recovery of pink salmon. Once scientists determine why pink salmon are not recovering, efforts may be undertaken to accelerate recovery.

~~*Promote recovery of subsistence and commercial fishing as soon as possible*. Pink salmon is an important subsistence food source and commercial fish species. In addition to accelerating the recovery of pink salmon, promote recovery of services that depend on them by increasing the availability, reliability, or quality of subsistence resources and commercial fish species.~~

Monitor recovery. Monitor egg mortality, escapement, and return per spawner productivity.

Protect pink salmon and their habitat. With regard to pink salmon, the objective of habitat protection is to ensure maintenance of adequate water quality, riparian habitat and intertidal habitat for spawning and rearing. ~~Pink salmon can also be protected by improving their management.~~ The Trustee Council can also contribute to the protection of pink salmon by providing information needed to improve their management. An example of protective management practices is restriction of the fishery by the Alaska Department of Fish and Game due to poor returns of pink salmon to Prince William Sound in 1992 and 1993

~~prompted the Alaska Department of Fish and Game to restrict the fishery~~.

Recreation and Tourism

Injury and Recovery: The spill disrupted use of the spill area for recreation and tourism. Resources important for wildlife viewing include killer whale, sea otter, harbor seal, bald eagle, and various seabirds. Residual oil exists on some beaches with high value for recreation. It may decrease the quality of recreational experiences and discourage recreational use of these beaches.

Closures on 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. Harlequin ducks are hunted in the spill area.

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 like the Green Island cabin and the Fleming Spit camp area were injured by cleanup workers.

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.

Restoration Strategy:

Preserve or improve the recreational and tourism values of the spill area. Habitat protection and acquisition are important means of preserving and enhancing the opportunities offered by the spill area. Facilities damaged during cleanup may be repaired if they are still needed. New facilities may restore or enhance opportunities for recreational use of natural resources. Improved or intensified public recreation management may be warranted in some circumstances. Projects that restore or enhance recreation and tourism would be considered only if they are consistent with the character and public uses of the area. However, all projects to preserve and improve recreation and tourism values must be related to an injured natural resource. See Policy 9 in Chapter 2.

Remove or reduce residual oil if it is cost effective and less harmful than leaving it in place. Removal of residual oil on beaches with high value for recreation and tourism may restore these services for some users. However, this benefit would have to be balanced against cost and the potential for further disruption~~ng~~ to ~~recovering~~ intertidal ~~ecosystem~~ communities.

Monitor recovery. Monitor~~ing~~ the recovery of resources used for recreation and tourism ~~services~~. Also monitor changes in recreation and tourism in the spill area. ~~will track the progress of recovery, detect major reversals, and identify problems with the resources and~~

~~resource management that may affect the rate or degree of recovery.~~

River Otters

Injury and Recovery: River otters have suffered sublethal effects from the spill and continuing exposure to hydrocarbons.

Recovery Objectives: Indications of recovery are when habitat use, food habitats, and physiological indices have returned to prespill conditions.

Restoration Strategy:

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

Monitor recovery. Monitor the health and habitat use of river otters in Prince William Sound.

Protect river otters and their habitat. With regard to river otters, the objective of habitat protection is to ensure maintenance of adequate riparian and shoreline habitats for feeding and denning.

Rockfish

Injury and Recovery: Dead adult rockfish were recovered following the oil spill. Other rockfish were exposed to hydrocarbons and showed sublethal effects. Furthermore, closures to salmon fisheries increased fishing pressures on rockfish which may be affecting their population. However, the extent and mechanism of injury to this species are unknown.

Recovery Objective: Without further study, recovery cannot be defined.

Restoration Strategy:

Rely on natural recovery. Natural processes aided by protective measures will be the main agents of restoration.

Determine if restoration is needed. Synthesize Natural Resource Damage Assessment studies and other data on rockfish in Prince William Sound to define a restoration objective and develop strategies to monitor and protect the recovery of the species.

Monitor recovery. Once a recovery objective is defined, monitor the progress of natural recovery toward that objective.

~~*Protect rockfish and their habitat.* If further protection is necessary, it could be provided through management practices, the reduction of marine pollution, and protection of important~~

~~marine habitat.~~

Sea Otters

Injury and Recovery: Sea otters do not appear to be recovering, but are expected to eventually recover to their prespill population. Exactly what population increases would constitute recovery is very uncertain, as there are no population data from 1986 to 1989, and the population may have been increasing in Eastern Prince William Sound during that time. In addition, only large changes in the population can be reliably detected with current measuring techniques. However, there are recent indications that the patterns of juvenile and mid-aged mortalities are returning to prespill conditions.

Recovery Objective: Sea otters will be considered recovered when population abundance and distribution are comparable to prespill abundance and distribution, and when all ages appear healthy.

Restoration Strategy: Sea otters are harvested for subsistence. For additional restoration strategies, see *Subsistence*.

Conduct research to find out why sea otters are not recovering. One hypothesis is that exposure to hydrocarbons and ingestion of contaminated prey affected survival and reproductive success of sea otters in Prince William Sound. Another hypothesis is that the oil spill induced changes in the population of benthic prey species that have limited reoccupation of sea otter habitat and the recovery of sea otters in oiled areas.

Initiate, sustain, or accelerate recovery of sea otters. Once scientists determine why sea otters are not recovering, efforts may be undertaken to accelerate recovery.

~~*Promote recovery of subsistence as soon as possible*. Sea otters are an important subsistence resource in the spill area. In addition to accelerating the recovery of sea otters, promote recovery of services that depend on them by increasing the availability, reliability, or quality of subsistence resources, or increasing the confidence of subsistence users.~~

Monitor recovery. Monitor abundance and mortality of sea otters in oiled areas.

Protect sea otters and their habitats. With regard to sea otters, the objective of habitat protection is to reduce disturbance at haulout sites, pupping sites, and in nearshore feeding areas.

Sediments

Injury and Recovery: With tidal action, oil penetrated deeply into cobble and boulder beaches that are relatively common on the rocky islands of the spill area. Cleaning removed much of the oil from the intertidal zone but subsurface oil persisted in many heavily oiled beaches and

in mussel beds, which were avoided during the cleanup. Chemical analyses show that *Exxon Valdez* oil apparently did not reach deeper than 20 to 40 meters, although elevated activities of hydrocarbon-degrading bacteria were seen somewhat deeper in some cases.

Recovery Objective: Sediments will have recovered when contamination causes no negative effects to the spill-~~affected~~ ecosystem.

Restoration Strategy:

Monitor recovery. Monitor concentrations of hydrocarbons in ~~subtidal~~ sediments and indices of petroleum exposure in flatfish.

Remove or reduce residual oil if it is cost effective and less harmful than leaving it in place. Removal of residual oil may accelerate recovery of sediment where natural recovery is insufficient. However, this benefit would have to be balanced against cost and the potential for disrupting the recovering intertidal ecosystem.

Sockeye Salmon

Injury and Recovery: Sockeye salmon in Red Lake, Akalura Lake, and lakes in the Kenai River system declined in population because of adult overescapement in 1989. The Red Lake system may be recovering because the plankton has recovered, and fry survival improved in 1993. However, Akalura Lake and Kenai River Lakes have not recovered: smolt production has continued to decline from these lakes. In the Kenai River lakes, for example, smolt production has declined from 30 million in 1989 to 6 million in 1990, and to less than 1 million in 1992 and 1993.

Recovery Objective: Sockeye salmon in the impacted lakes will have recovered when populations are able to support overwinter survival rates and smolt outmigrations comparable to prespill levels.

Restoration Strategy: Sockeye salmon is important for subsistence use, commercial fishing, and sport fishing. For additional restoration strategies, see *Subsistence, Commercial Fishing* and *Recreation and Tourism.*

Rely on natural recovery for Red Lake sockeye. Natural processes aided by protective measures will be the main agents of restoration for sockeye salmon in Red Lake, which are expected to fully recover by 1996.

Conduct research to find out why other populations of sockeye salmon are not recovering. The most likely explanation is that overescapement of adults changed the community structure of sockeye lake-rearing habitat. Possible changes in community structure include a reduction in zooplankton biomass; conversion of the zooplankton community structure to a predation-resistant form; or a change in composition of zooplankton that demands increased foraging

time for juvenile salmon, which may increase predation.

Initiate, sustain, or accelerate recovery of sockeye salmon. Once scientists determine why sockeye salmon are not recovering, efforts may be undertaken to accelerate recovery.

~~*Promote recovery of subsistence, commercial fishing, and sport fishing as soon as possible.* Sockeye salmon is an important subsistence food source and commercial and sport fish species. In addition to accelerating the recovery of sockeye salmon, promote recovery of services that depend on them by increasing the availability, reliability, or quality of subsistence resources and commercial or sport fish species.~~

Monitor recovery. Monitor outmigrations of smolt in Red Lake and Akalura Lake. In Kenai River lakes, monitor fall fry abundance and smolt abundance to estimate overwinter survival and smolt production.

Protect sockeye salmon and their habitats. With regard to sockeye salmon, the objective of habitat protection is to ensure maintenance of adequate water quality, riparian habitat and intertidal habitat for spawning and rearing. ~~Sockeye salmon can also be protected by improving their management.~~ The Trustee Council can also contribute to the protection of sockeye salmon by providing information needed to improve their management.

Subsistence

Injury and Recovery: Subsistence users say that maintaining their subsistence culture depends on uninterrupted use of ~~subsistence~~ resources used for subsistence. The more time users spend away from subsistence activities, the less likely they will return to the activities. Continuing injury to natural resources used for subsistence may affect the way of life of entire communities.

Residual oil exists on some beaches with high value for subsistence. Continued presence of hydrocarbons may contaminate ~~subsistence food~~ resources used for subsistence or, at a minimum, create uncertainty about the safety of ~~subsistence food~~ resources that reduces their use and value for subsistence.

Recovery Objective: Subsistence will have recovered when injured ~~subsistence~~ resources used for subsistence are healthy and productive and exist at prespill levels and people are confident that the resources are safe to eat. One indication that recovery has occurred is when the cultural values provided by gathering, preparing, and sharing food are reintegrated into community life.

Restoration Strategy: The primary way of restoring subsistence is to restore injured resources used for subsistence ~~resources~~, such as clams, harbor seals, Pacific herring, pink salmon, sea otters and sockeye salmon. These are discussed elsewhere in this chapter. Four additional parts of the strategy to restore subsistence are the following:

Promote recovery of subsistence as soon as possible. Many subsistence communities will be significantly harmed while waiting for ~~subsistence~~ resources used for subsistence to recover through natural recovery alone. Therefore, an objective of restoration is to accelerate recovery of ~~subsistence~~ resources used for subsistence and the services itself. This objective may be accomplished through increasing availability, reliability, or quality of ~~subsistence~~ resources used for subsistence, or increasing the confidence of subsistence users. Specifically, if subsistence harvest has not returned to prespill levels because users doubt the safety of particular ~~subsistence~~ resources, this objective may take the form of increasing the reliability of the resource through food safety testing. Other examples are the acquisition of alternative ~~subsistence~~ food sources and improved use of existing resources. However, all projects to promote subsistence must be related to an injured natural resource. See Policy 9 in Chapter 2.

Remove or reduce residual oil if it is cost effective and less harmful than leaving it in place. Removing residual oil on beaches with high value for subsistence may improve the safety of foods found on these beaches. This benefit would have to be balanced against cost and the potential for further disruption~~ing~~ to ~~recovering~~ intertidal communities.

Protect subsistence resources from further degradation. Further stress on subsistence resources could impede recovery. Appropriate protection can take the form of habitat protection and acquisition if important subsistence areas are threatened. Protective action could also include protective management practices if a resource or service faces further injury from human use or marine pollution.

Monitor recovery. Monitor~~ing~~ the recovery of resources used for subsistence. Also monitor subsistence harvest. ~~will track the progress of recovery, detect major reversals, and identify problems with the resources and resource management that may affect the rate or degree of recovery. Inadequate information may require managers to unduly restrict use of injured resources, compounding the injury to subsistence.~~

Subtidal Organisms

Injury and Recovery: Certain subtidal organisms, like eelgrass and some species of algae, appeared to be recovering. Other subtidal organisms, like leather stars and helmet crabs, showed little signs of recovery through 1991.

Recovery Objective: Subtidal communities will have recovered when the community composition, age class distribution, population abundance of component species, and ecosystem functions and services in each injured subtidal habitat have returned to levels that would have prevailed in the absence of the oil spill.

Restoration Strategy:

Conduct research to find out why some subtidal organisms are not recovering. Possible

explanations include changes in the community structure resulting from spill-induced changes in predators; changes in the population of benthic prey; and limitations in recruitment processes (the availability of new organisms to repopulate the area).

Initiate, sustain, or accelerate recovery. Once scientists determine why some ~~sea otters~~ subtidal organisms are not recovering, efforts may be undertaken to accelerate recovery.

Monitor recovery. Monitor subtidal organisms in Prince William Sound~~, with a focus on eelgrass~~.

Protect subtidal organisms and their habitats. With regard to subtidal biota, the objective of habitat protection is to maintain water quality along the shoreline and reduce disturbance in nearshore areas. Subtidal organisms can also be protected by reducing marine pollution.

Appendix
Summary of Results of Injury Assessment Studies

This appendix summarizes the results of the injury assessment studies completed after the *Exxon Valdez* oil spill. It has three parts:

- biological resources
- other natural resources (air, water, sediment, and archaeology), and
- services.

The information has not been updated since the *Draft Restoration Plan* was published in fall 1993. It is expected to be updated during winter, 1994.

Table 3 summarizes for all natural resources and archaeology completed after the *Exxon Valdez* oil spill. It shows whether there was initial mortality caused by the spill, whether the spill caused a measured population decline, and whether there is evidence of sublethal injury. For some resources, an estimate is available for the total number of animals initially killed by the spill. If available, that estimate is shown in parentheses under the initial mortality column. For many resources, the total number killed will never be known. For other resources and archaeology, listed in Table 4, information on injury is not quantitative.

The "Status of Recovery" columns show the best estimate of recovery using the most recent information. The columns show resources' progress toward recovery to the condition and population levels that scientists estimate would have occurred in the absence of the spill. The "Current Population Status" column shows a resource's progress from any "Decline in Population after the Spill." Similarly, the column labeled "Continuing Sublethal Effects" shows whether a sublethal injury is ongoing.

TABLE 3. Resources: Summary of Results of Injury Assessment Studies Done After the *Exxon Valdez* Oil Spill

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
MARINE MAMMALS										
Harbor Seals (d)	YES (300)	YES	YES	POSSIBLY STABLE, BUT NOT RECOVERING (b)	UNKNOWN	YES	YES (e)	UNKNOWN	UNKNOWN	Many seals were directly oiled. There was a greater decline in population indices in oiled areas compared to unoiled areas in PWS in 1989 and 1990. Population was declining prior to the spill and no recovery evident in 1992. Oil residues found in seal bile were 5 to 6 times higher in oiled areas than unoiled areas in 1990.
Humpback Whales	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	Other than fewer animals being observed in Knight Island Passage in summer 1989, which did not persist in 1990, the oil spill did not have a measurable impact on the north Pacific population of humpback whales.

(a) 1993 field reports are not yet finalized.
(b) There may have been an unequal distribution of injury within each region.
(c) Adjusted for carcasses not found, not reported, scavenged, or otherwise lost.
(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
Killer Whales	Yes (13)	YES (h)	UNKNOWN	RECOVERING	UNKNOWN	YES	UNKNOWN	UNKNOWN	UNKNOWN	13 adult whales of the 36 in AB pod are missing and presumed dead. The AB pod has grown by 4 whales since 1990. Some experts think that the loss of 13 whales in 1989, 1990 is unrelated to oil spill.
Sea Lions (d)	UNKNOWN	YES (h)	NO	CONTINUING DECLINE	(f)	(f)	(f)	(f)	(f)	Several sea lions were observed with oiled pelts and oil residues were found in some tissues. It was not possible to determine population effects or cause of death of carcasses recovered. Sea lion populations were declining prior to the oil spill.
Sea Otters	YES (3,500 TO 5,500)	YES	YES	STABLE, BUT NOT RECOVERING	YES, POSSIBLY	YES	YES	YES (e)	YES (e)	Postspill surveys showed measurable difference in populations and survival between oiled and unoiled areas in 1989, 1990, and 1991. Survey data have not established a significant recovery. Prime-age animals were still found on beaches in 1989, 1990, and 1991. Sea otters feed in the lower intertidal and subtidal areas and may still be exposed to hydrocarbons in the environment.

(a) 1993 field reports are not yet finalized.
(b) There may have been an unequal distribution of injury within each region.
(c) Adjusted for carcasses not found, not reported, scavenged, or otherwise lost.
(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
TERRESTRIAL MAMMALS										
Brown Bear	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	Hydrocarbon exposure was documented on Alaska Peninsula in 1989 including high hydrocarbon levels in the bile of one dead cub. Brown bear feed in the intertidal zone and may still be exposed to hydrocarbons in the environment.
Black Bear	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	No field studies were done.
River Otters	YES (TOTAL NUMBER UNKNOWN)	NO	YES, POSSIBLY	UNKNOWN	UNKNOWN	YES	UNKNOWN	UNKNOWN	UNKNOWN	Exposure to hydrocarbons and possible sublethal effects were determined, but no effects were established on population. Sublethal indicators of possible oil exposure remained in 1991. River otters feed in the intertidal and shallow subtidal areas and may still be exposed to hydrocarbons in the environment.
Sitka Black-tailed Deer	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	Elevated hydrocarbons were found in tissues in some deer in 1989.
Mink	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	Studies limited to laboratory toxicity studies.

(a) 1993 field reports are not yet finalized.
(b) There may have been an unequal distribution of injury within each region.
(c) Adjusted for carcasses not found, not reported, scavenged, or otherwise lost.
(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
BIRDS										
Bald Eagles	YES (200 or more)	NO	YES	POSSIBLY RECOVERED	NO	YES	YES	YES (e)	YES(e)	Productivity in PWS was disrupted in 1989, but returned to normal in 1990. Exposure to hydrocarbons and some sublethal effects were found in 1989, but no continuing effects were observed on populations.
Black-legged Kittiwakes	YES (NUMBER UNKNOWN)	NO	NO	NO CHANGE	NO	YES	YES (e)	YES (e)	YES (e)	Total reproductive success in oiled and unoiled areas of PWS has declined since 1989. Hydrocarbon contaminated stomach contents were detected in 1989 and 1990. This species is known for great natural variation and reproductive failure may be unrelated to the oil spill.

(a) 1993 field reports are not yet finalized.
(b) There may have been an unequal distribution of injury within each region.
(c) Adjusted for carcasses not found, not reported, scavenged, or otherwise lost.
(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
Black Oyster-catchers	YES (120-150 ADULTS; UNKNOWN FOR CHICKS	YES	YES	RECOVERING	YES	YES	YES (e)	YES (e)	YES (e)	Differences in egg size between oiled and unoiled areas were found in 1989. Exposure to hydrocarbons and some sublethal effects were determined. Populations declined more in oiled areas than unoiled areas in postspill surveys in 1989, 1990, and 1991. Black oystercatchers feed in the intertidal areas and may still be exposed to hydrocarbons in the environment.
Common Murres	YES (170,000 to 300,000)	YES	YES	DEGREE OF RECOVERY VARIES IN COLONY	YES	NO	YES	YES	YES	Measurable impacts on populations were recorded in 1989, 1990, and 1991. Breeding is still inhibited in some colonies in the Gulf of Alaska.
Glaucous-winged Gulls	YES (NUMBER UNKNOWN)	NO	NO	NO CHANGE	NO	YES (e)	YES (e)	YES (e)	YES (e)	While dead birds were recovered in 1989, there is no evidence of a population-level impact when compared to historic (1972, 1973) population levels.

(a) 1993 field reports are not yet finalized.
(b) There may have been an unequal distribution of injury within each region.
(c) Adjusted for carcasses not found, not reported, scavenged, or otherwise lost.
(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
Harlequin Ducks	YES (APPROX. 1000)	YES	YES, POSSIBLY	UNKNOWN	YES	YES	YES (e)	YES (e)	YES (e)	Postspill samples showed hydrocarbon contamination. Surveys in 1990-1992 indicated population declines and possibly reproductive failure. Harlequin ducks feed in the intertidal and shallow subtidal areas and may still be exposed to hydrocarbons in the environment.
Marbled Murrelets (d)	YES (8,000 TO 12,000)	YES	NO	STABLE OR CONTINUING DECLINE	UNKNOWN	YES	YES (e)	YES (e)	YES (e)	Measurable population effects were recorded in 1989, 1990, and 1991. Marbled murrelet populations were declining prior to the spill.
Peale's Peregrine Falcons	UNKNOWN	YES (h)	NO	(f)	(f)	(f)	(f)	(f)	(f)	When compared to 1985 surveys a reduction in population and lower than expected productivity was measured in 1989 in the PWS. Cause of these changes are unknown.
Pigeon Guillemots (d)	YES (1,500 TO 3,000)	YES	NO	STABLE OR CONTINUING DECLINE	UNKNOWN	YES	YES (e)	YES (e)	YES (e)	Pigeon guillemot populations were declining prior to the spill. Hydrocarbon contamination was found externally on eggs.

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(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
Storm Petrels	YES (NUMBER UNKNOWN)	NO	NO	NO CHANGE	UNKNOWN	YES (e)	YES (e)	YES (e)	YES (e)	Few carcasses were recovered in 1989 although petrels ingested oil and transferred oil to their eggs. Reproduction was normal in 1989.
Other Seabirds	YES (number unknown)	VARIES BY SPECIES	UNKNOWN	VARIES BY SPECIES	UNKNOWN	YES (e)	YES (e)	YES (e)	YES (e)	Seabird recovery has not been studied. Species collected dead in 1989 include common, yellow-billed, Pacific, red-throated loon; red-necked and horned grebe; northern fulmar; sooty and short-tailed shearwater; double-crested, pelagic, and red-faced cormorant; herring and mew gull; Arctic and Aleutian tern; Kittlitz's and ancient murrelet; Cassin's, least, parakeet, and rhinoceros auklet; and horned and tufted puffin.
Other Sea Ducks	YES (875)	NO	UNKNOWN	UNKNOWN	UNKNOWN	YES	YES (e)	YES (e)	YES (e)	Species collected dead in 1989 include Stellar's, king and common eider; white-winged, surf and black scoter; oldsquaw; bufflehead; common and Barrow's goldeneye; and common and red-breasted merganser. Sea ducks tend to feed in the intertidal and shallow subtidal areas which were most heavily impacted by oil.

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Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
Other Shorebirds	YES (NUMBER UNKNOWN)	VARIES BY SPECIES	UNKNOWN	UNKNOWN	UNKNOWN	YES	YES (e)	YES (e)	YES (e)	Species collected dead in 1989 include golden plover; lesser yellowlegs; semipalmated, western, least and Baird's sandpipers; surfbird; short-billed dowitcher; common snipe; red and red-necked phalarope.
Other Birds	YES (NUMBER UNKNOWN)	NO (NOT STUDIED)	UNKNOWN	UNKNOWN	UNKNOWN	YES (e)	YES (e)	YES (e)	YES (e)	Species collected dead in 1989 include emperor and Canada goose; brant; mallard; northern pintail; green-winged teal; greater and lesser scaup; ruddy duck; great blue heron; long-tailed jaeger; willow ptarmigan; great-horned owl; Stellar's jay; magpie; common raven; northwestern crow; robin; varied and hermit thrush; yellow warbler; pine grosbeak; savannah and golden-crowned sparrow; white-winged crossbill.

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Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
FISH										
Cutthroat Trout	NO	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	NO	NO	NO	Differences in survival between anadromous adult populations in the oiled and unoiled areas were not statistically different; however, differences in growth between adult populations in the oiled and unoiled areas were found in 1989, 1990, and 1991.
Dolly Varden	NO	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	Differences in survival between anadromous adult populations in the oiled and unoiled areas were not statistically different. Growth rates between 1989 and 1990 were reduced.

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(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
Pacific Herring	YES, TO EGGS AND LARVAE	YES (h)	YES	SEE COMMENTS	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	Measurable difference in egg counts between oiled and unoiled areas were found in 1989 and 1990. Lethal and sublethal effects on eggs and larvae were evident in 1989 and to a lesser extent in 1990; in 1991, there were no differences between oiled and unoiled areas. Herring exposed as eggs or larvae in 1989 were under-represented in 1992 and 1993 returns. It is unknown whether 1993 disease outbreaks were due to the spill.
Pink Salmon (Wild) (d)	YES, TO EGGS	YES (h)	YES	SEE COMMENTS	YES	YES	UNKNOWN	UNKNOWN	UNKNOWN	There was initial egg mortality in 1989. Egg mortality continued to be high in 1991 and 1992. Abnormal fry were observed in 1989. Reduced growth of juveniles was found in the marine environment, which can be correlated with reduced survival to adulthood. It is unknown whether poor returns in 1993 are linked to the spill.

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(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
Rockfish	YES (20) (g)	NO	YES	UNKNOWN	UNKNOWN	YES	YES	UNKNOWN	UNKNOWN	Few dead fish were found in 1989 in condition to be analyzed. Exposure to hydrocarbons with some sublethal effects were determined in those fish, but no effects established on the population. Closures to salmon fisheries increased fishing pressures on rockfish which may be impacting population.
Sockeye Salmon	UNKNOWN	YES	YES	SEE COMMENTS	SEE COMMENTS	UNKNOWN	YES	YES	UNKNOWN	Fry survival continues to be poor in the Kenai River systems due to overescapements to the Kenai River in 1987, 1988, 1989. As a result, adult returns are expected to be low in 1994 and successive years. Trophic structures of Kenai and Skilak Lakes have been altered by overescapement. Red Lake may be recovering since plankton have recovered and fry survival improved in 1993.

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(d) Population may have been declining prior to the spill.
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Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
SHELLFISH										
Clam	YES (NUMBER UNKNOWN)	YES	POSSIBLY, FINAL ANALYSES PENDING	UNKNOWN	UNKNOWN	YES	YES	YES	YES	Marginal declines in clam populations were noted in 1989. Native littleneck and butter clams were impacted by both oiling and cleanup, particularly high-pressure, hot-water washing. Littleneck clams transplanted to oiled areas in 1990 grew significantly less than those transplanted to unoiled sites. Reduced growth recorded at oiled sites in 1989 but not 1991.
Crab (Dungeness)	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	Crabs collected from oil areas were not found to have accumulated petroleum hydrocarbons.
Oyster	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	Although studies were initiated in 1989, they were not completed because they were determined to be of limited value.
Sea Urchin	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	Studies limited to laboratory toxicity studies.
Shrimp	NO	NO	NO	(f)	(f)	(f)	(f)	(f)	(f)	No conclusive evidence presented for injury linked to oil spill.

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Resource	Description of Injury			Status of Recovery (a)		Geographic Extent of Injury (b)				Comments/Discussion
	Oil Spill Mortality (total mortality estimate)(c)	Measured Decline in Population after the spill	Sublethal or Chronic Effects	Current Population Status	Continuing Sublethal or Chronic Effects	PWS	Kenai	Kodiak	Alaska Penin.	
INTERTIDAL/SUBTIDAL COMMUNITIES										
Intertidal Organisms/ Communities	YES	YES	YES	VARIABLE BY SPECIES, SEE COMMENTS	YES	YES	YES	YES	YES	Measurable impacts on populations of plants and animals were determined. The lower intertidal and, to some extent, the mid-intertidal is recovering. Some species (Fucus) in the upper intertidal zone have not recovered, and oil may persist in mussel beds.
Subtidal Communities	YES	YES	YES	VARIABLE BY SPECIES, SEE COMMENTS	YES	YES	UNKNOWN	UNKNOWN	UNKNOWN	Measurable impacts on population of plants and animals were determined in 1989. Eelgrass and some species of algae appear to be recovering. Amphipods in eelgrass beds recovered to prespill densities in 1991. Leather stars and helmet crabs show little sign of recovery through 1991.

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(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

TABLE 4. Other Natural Resources and Archaeology: Summary of Results of Injury Assessment Studies Done After the *Exxon Valdez* Oil Spill

Resource	Description of Injury	Status of Recovery	Geographic Extent of Injury (b)				Comments/Discussion
			PWS	Kenai	Kodiak	Alaska Penin.	
Air	Air quality standards for aromatic hydrocarbons were exceeded in portions of PWS. Health and safety standards for permissible exposure levels were exceeded up to 400 times.	Recovered	YES	NO	NO	NO	Impacts diminished rapidly as oil weathered and lighter factions evaporated.
Sediments	Oil coated beaches and became buried in beach sediments. Oil-laden sediments were transported off beaches and deposited on subtidal marine sediments.	Patches of oil residue remain intertidally on rocks and beaches and buried beneath the surface at other beach locations. Oil remains in some subtidal marine sediments and has spread to depths greater than 20 meters.	YES	YES	YES	YES	Unweathered buried oil will persist for many years in protected low-energy sites.
Water	State of Alaska water quality standards may have been exceeded in portions of PWS. Federal and State oil discharge standards of no visible sheen were exceeded.	Recovered	YES	YES	YES	YES	Impacts diminished as oil weathered and lighter fractions evaporated.

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(b) There may have been an unequal distribution of injury within each region.
(c) Adjusted for carcasses not found, not reported, scavenged, or otherwise lost.
(d) Population may have been declining prior to the spill.
(e) Based on recovery of dead animals from this region of the spill zone.
(f) If no injury was detected or known, no assessment of recovery could be made.
(g) Total body count, not including carcasses not found.
(h) It is unknown if declines are due to the oil spill.

Resource	Description of Injury	Status of Recovery	Geographic Extent of Injury (b)				Comments/Discussion
			PWS	Kenai	Kodiak	Alaska Penin.	
Archaeological sites/artifacts	Currently, 24 sites are known to have been adversely affected by oiling, clean-up activities, or looting and vandalism linked to the oil spill. One hundred thirteen sites are estimated to have been similarly affected. Injuries attributed to looting and vandalism (linked to the oil spill) are still occurring.	Archaeological sites and artifacts cannot recover; they are finite, non-renewable resources.	YES	YES	YES	YES	
Designated Wilderness Areas	Many miles of Federal and State Wilderness and Wilderness Study Area coastlines were affected by oil. Some oil remains buried in the sediments of these areas.	Oil has degraded in many areas but remains in others. Until the remaining oil degrades, injury to Wilderness Areas will continue.	YES	YES	YES	YES	

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Services:
Summary of Results of Injury Assessment Studies

Table 5 summarizes information concerning lost or reduced services damaged by the spill. Much of the injury to services and the information about those injuries is not quantitative. The table reflects the qualitative content of the information. The "Description of Reduction or Loss" column recounts the impacts of the spill on each service. The "Status of Recovery" shows the most recent information on recovery.

The information used for this table is taken from injury assessment studies, information from agency managers, and, for recreation, a Key Informant Interview study conducted in December 1992.

TABLE 5. Services: Summary of Results of Injury Assessment Studies Done After the *Exxon Valdez* Oil Spill

Service	Description of Reduction or Loss	Status of Recovery	Geographic Extent of Injury (a)				Comments/Discussion
			PWS	Kenai	Kodiak	Alaska Penin.	
Passive Use	The areas of Alaska impacted by the oil spill supported a large diverse ecosystem that was valued by large numbers of the American public who did not visit the area. The spill killed substantial numbers of different bird species and marine mammals as well as oiling much of the coastline in the impacted areas. The spill also had substantial effects on the fish, bird, and wildlife populations. While some of these effects may be of relatively short duration, others such as recovery of various bird populations are likely to take decades.	The animals initially killed are irreplaceable. Fish and wildlife populations are recovering at different rates. Much of the oil in shoreline areas has been removed or has weathered to varying degrees.	YES	YES	YES	YES	A contingent valuation study of the American public done in 1991 found that approximately 95% were still aware of the Exxon Valdez oil spill, and that over 50% spontaneously named the spill as one of the worst environmental accidents to occur in the world during their lifetime. The median household was willing to pay $31 to prevent a spill similar to the Exxon Valdez in the future. Multiplied by the number of U.S. households, this results in an estimate of spill damages of $2.8 billion.

(a) There may have been an unequal distribution of injury within each region.

Service	Description of Reduction or Loss	Status of Recovery	Geographic Extent of Injury (a)				Comments/Discussion
			PWS	Kenai	Kodiak	Alaska Penin.	
Recreation and Tourism (e.g., hunting, sportfishing, camping, kayaking, sailboating, motorboating, environmental education)	The nature and extent of any reduction or loss of services varied by user group and by area. Some commercial recreation and tourism businesses were injured by the reduction in visitors and visitor spending as a result of the spill. Non-commercial recreation also decreased in some parts of the spill area. The quality of recreation experiences decreased as a result of the spill due to crowding, residual oil, and fewer fish and wildlife. The oil spill caused injury to the way people perceive recreation opportunities in the spill area. The location of recreation use was altered by changed use patterns and displaced use. A few recreation facilities were impacted by the spill, most from overuse or misuse during 1989 and 1990. Overall, recreation use declined significantly in 1989. Between 1989 and 1990, a decline in sport fishing (number of anglers, fishing trips, and fishing days) were recorded for PWS, Cook Inlet and the Kenai Peninsula.	Public comment shows persisting oil, crowding, diminished aesthetics, reduction of wilderness character, reduction of wildlife sightings, tainted food sources, disturbance of cultural sites, and evidence of clean-up activities all to be continuing injuries to recreation. Some displaced users are returning to parts of the spill area, while others still avoid the heavier oiled areas. Recovery of recreation, especially sport hunting and fishing, is largely dependent on the recovery of injured species. As species recover, recreational experiences will improve. The projected decrease in the Kenai River sockeye salmon returns could cause additional injury to recreation on the Kenai Peninsula. Use patterns continue to change in relation to the recovery of the resources, perceptions, and restoration projects.	YES	YES	YES	YES	Survey respondents also reported changes in their perception of recreation opportunity in terms of increased vulnerability to future oil spills, erosion of wilderness, a sense of permanent change, concern about long-term ecological effects, and, in some, a sense of optimism.

(a) There may have been an unequal distribution of injury within each region.

Service	Description of Reduction or Loss	Status of Recovery	Geographic Extent of Injury (a)				Comments/Discussion
			PWS	Kenai	Kodiak	Alaska Penin.	
Commercial Fishing	During 1989, emergency commercial fishery closures were ordered in PWS, Cook Inlet, Kodiak and the Alaska Peninsula. This affected salmon, herring, crab, shrimp, rockfish, and sablefish. The 1989 closures resulted in sockeye over-escapement in the Kenai River and in the Red Lake system (Kodiak Island). In 1990, portions of PWS were closed to shrimp and salmon fishing.	Currently there are no area-wide oil spill-related commercial closures in effect. Management actions to try to compensate for the spill are still in effect. Oil spill-related sockeye over-escapement in the Kenai River system is anticipated to result in low adult returns in 1994 and beyond. Over-escapements may result in closure or harvest restrictions during these and perhaps in subsequent years. Returns of pink salmon and and herring to Prince William Sound were very low in 1993. It is uncertain to what degree this is linked to the spill.	YES	YES	YES	YES	Injuries and recovery status of rockfish, pink salmon, shellfish, and herring are uncertain. Therefore, future impacts on these fisheries are unknown.

(a) There may have been an unequal distribution of injury within each region.

Service	Description of Reduction or Loss	Status of Recovery	Geographic Extent of Injury (a)				Comments/Discussion
			PWS	Kenai	Kodiak	Alaska Penin.	
Subsistence	Subsistence harvests of fish and wildlife in 11 of 15 villages surveyed declined from 4 - 77% in 1989 when compared to prespill levels. At least 4 of the 11 villages showed continued lower than average levels of use in the period 1990-1991; this decline is particularly noticeable in the Prince William Sound villages of Chenega and Tatitlek. In 1989-1991, chemical analysis indicated that most resources tested, including fish, marine mammals, deer, and ducks, were safe to eat. Starting in 1989, health advisories were issued indicating that shellfish from oiled beaches should not be eaten.	Many subsistence users believe that continued contamination to subsistence food sources is dangerous to their health. In addition, village residents believe that subsistence species continue to decline or have not recovered from the oil spill. Health advisories against eating clams from obviously oiled beaches are still in effect.	YES	YES	YES	YES	

(a) There may have been an unequal distribution of injury within each region.

Table ___ Resources and Services Injure by the Spill
Biological resources in the table experienced population-level or continuing sublethal injuries

INJURED RESOURCES			Lost or Reduced SERVICES
Biological Resources		**Other**	
Recovering Bald eagle Black oystercatcher Intertidal organisms (some) Killer whale Mussels Sockeye salmon (Red Lake) Subtidal organisms (some)	**Not Recovering** Common murre Harbor seal Harlequin duck Intertidal org. (some) Marbled murrelet Pacific herring Pigeon guillemot Pink salmon Sea otter Sockeye salmon (Kenai & Akalura systems) Subtidal organisms (some)	Archaeological resources Designated wilderness areas Sediment	Commercial fishing Passive uses Recreation and Tourism including sport fishing, sport hunting, and other recreation uses Subsistence
Recovery Unknown Clams Cutthroat trout Dolly Varden River otter Rockfish			

Amending the List of Injured Resources and Services. The list of injured resources and services will be reviewed as new information is obtained. For example, research and monitoring will hopefully show that recovery is beginning for many of the resources which currently show little or no signs of recovery. In addition, information may be submitted to add resources to the list. This information can include research results, assessment of population trends, ethnographic and historic data, and supportive rationale. Information that has been through an appropriate peer-review process is preferable. If data have not been peer-reviewed, they should be presented in a format that permits and facilitates peer-review. Information to change the list will be peer-reviewed through the Trustee Council's scientific review process.

Table 2. Resources and Services Injure by the Spill

Biological resources in the table experienced population-level or continuing sublethal injuries

INJURED RESOURCES			Lost or Reduced SERVICES
Biological Resources		Other	
Recovering Bald eagle Black oystercatcher Intertidal organisms (some) Killer whale Mussels Sockeye salmon (Red Lake) Subtidal organisms (some)	**Not Recovering** Common murre Harbor seal Harlequin duck Intertidal org. (some) Marbled murrelet Pacific herring Pigeon guillemot Pink salmon Sea otter Sockeye salmon (Kenai & Akalura systems) Subtidal organisms (some)	Archaeological resources Designated wilderness areas Sediment	Commercial fishing Passive uses Recreation and Tourism including sport fishing, sport hunting, and other recreation uses Subsistence
Recovery Unknown Clams Cutthroat trout Dolly Varden River otter Rockfish			

Amending the List of Injured Resources and Services. The list of injured resources and services will be reviewed as new information is obtained. For example, research and monitoring will hopefully show that recovery is beginning for many of the resources which currently show little or no signs of recovery. In addition, information may be submitted to add resources to the list. This information can include research results, assessment of population trends, ethnographic and historic data, and supportive rationale. Information that has been through an appropriate peer-review process is preferable. If data have not been peer-reviewed, they should be presented in a format that permits and facilitates peer-review. Information to change the list will be peer-reviewed through the Trustee Council's scientific review process.

Exxon Valdez Oil Spill Trustee Council

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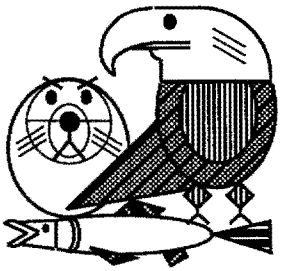

MEMORANDUM

To: Restoration Work Force

From: Molly McCammon
Director of Operations

Date: October 25, 1994

Subj: October 26 RWF Meeting

The weekly RWF meeting will begin at 10:00 a.m. The Juneau location for tomorrow's RWF meeting will be the FS conference room #413. The Anchorage location, as always, will be the Simpson Building 4th floor conference room. Items to be discussed will include:

- The November 2 & 3 Trustee Council meeting
- Update on miscellaneous issues

Please note the time change for the RWF meeting tomorrow.

mm/raw

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*** MULTI TRANSACTION REPORT ***
****

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INCOMPLETE TX/RX

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	[10] 19075867555	D.GIBBONS
	[11] 19074655375	M.BRODERSEN
	[12] 19074654759	J.MONTAGUE
	[13] 19077896608	MORRIS-WRIGHT
	[14] 2572510	S.RABINOWITCH
	[15] 5624871	C.FRIES
	[17] 2713992	R.THOMPSON
	[18] 5223148	J.SULLIVAN
	[19] 7863636	L.BARTELS
	[20] 7863350	C.BERG
	[35] 15103737834	B.SPIES
	[38] 2715827	G.BELT

ERROR

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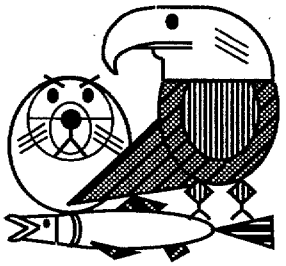

FAX COVER SHEET

To: Restoration Work Force

From: Molly Date: 10-25-94

Comments: Total Pages: 2

Pls forward to the RWF member in your ofc.

Thank You

RESTORATION WORK FORCE MEMBERS INCLUDE:

Bartels, Leslie
Berg, Catherine
Brodersen, Mark
Bruce, David
Fries, Carol
Gibbons, Dave
Gilbert, Veronica
Loeffler, Bob
McCammon, Molly
Montague, Jerome
Morris, Byron
Myers, Eric
Rabinowitch, Sandy
Spies, Bob
Sullivan, Joe
Thompson, Ray
Wright, Bruce

Document Sent By: Rebecca

9/9/94

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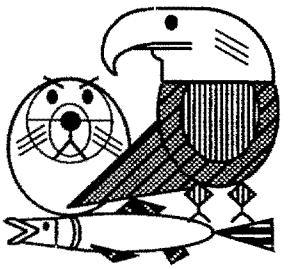
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



October 24, 1994

Dorne Hawxhurst, Executive Director
Cordova District Fishermen United
POB 939
Cordova, Alaska 99574

Dear Dorne:

Thank you for your letter of October 5, 1994. As you can well imagine, it is extremely difficult to schedule a meeting to be attended by all six Trustees, who all have extensive travel schedules.

Unfortunately, it will not be possible to have the November 2 - 3 meeting in Cordova. However, I will bring your request to the Trustees' attention and it may be possible to schedule a future meeting in Cordova, perhaps in January.

Thank you for your continued interest in the *Exxon Valdez* Trustee Council's actions.

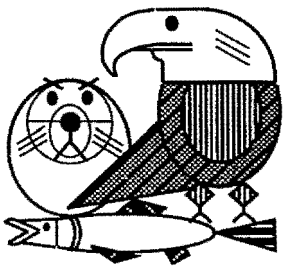
Sincerely,

James R. Ayers
Executive Director

jra/raw

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



October 21, 1994

Shan Burson
108 Mill Hill Road
South Chatham, MA 02659

Dear Mr. Burson:

Enclosed per your request, please find copies of the FY95 Invitation to Submit Restoration Projects for Fiscal Year 1995 and Draft Fiscal Year 1995 Work Plan Summary.

Thank you for your interest in the *Exxon Valdez* Trustee Council's Actions. If you require any further information, please don't hesitate to contact me.

Sincerely,

Molly McCammon
Director of Operations

mm/raw

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 "G" Street, Anchorage, AK 99501
Phone: (907) 278-8012 Fax: (907) 276-7178

MEMORANDUM

TO: Trustee Council

THROUGH: James R. Ayers
Executive Director

FROM: Traci Cramer
Traci Cramer
Administrative Officer

DATE: October 21, 1994

RE: Financial Report as of September 30, 1994

Enclosed are the financial statements for the Exxon Valdez Oil Spill Trustee Council for the period ending September 30, 1994.

Financial Statements

1. Status of settlement funds as of September 30, 1994.

   - $7,060,253 has been earned on settlement funds (see attached statement #1).
   - $410,831,233 has been disbursed from the total settlement (see attached statement #1).
   - Estimated funds available including receivables from Exxon are approximately $614,933,483 (see attached statement #1).

2. The balance in the Joint Trust Fund as of September 30, 1994 was $134,908,483 (see attached statement #2).

3. Based on action to date, the Restoration Reserve Fund is currently $12 million and is reflected in the Joint Trust Fund balance.

4. Status of the recent court request.

- The court process was completed October 20, 1994 for actions taken at the July and August Trustee Council meetings. Due to timing, the total disbursement of $10,664,256 is not reflected on the attached statements.

Other Business

1. State of Alaska Projects - Authorization to receive and expend Exxon Valdez Oil Spill Funds was approved on August 27th.

2. Federal Projects - Currently in the allocation distribution process.

If you have any questions regarding the information provided please give me a call at 586-7152.

attachments

cc: Molly McCammon
Restoration Work Force

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Statement of Exxon Settlement Funds
As of September 30, 1994

Beginning Balance of Settlement	900,000,000
Receipts:	
Interest Earned on Exxon Escrow Account	831,233
Net Interest Earned on Joint Trust Fund (See Note 1)	5,443,172
Interest Earned on United States and State of Alaska Accounts	785,848
Total Interest	7,060,253
Disbursements:	
Reimbursements to United States and State of Alaska	150,382,887
Exxon clean up cost deduction	39,913,688
Joint Trust Fund deposits	220,534,658
Total Disbursements	410,831,233
Funds Available	
Exxon future payments	490,000,000
Balance in Joint Trust Fund (See Statement 2)	134,908,483
Seal Bay acquisition payments due (See Note 3)	(9,975,000)
Other (See Note 2)	TBD
Total Estimated Funds Available	614,933,483

Note 1: Gross interest earned less District Court registry fees.

Note 2: Previously funded projects may have unobligated balances which will be available.

Note 3: Annual payments due in November 1994, 1995 and 1996.

Footnotes - It should be noted that the Joint Trust Fund Balance includes the Restoration Reserve Fund which has been allocated $12 million to date. In addition, the statement does not reflect the recent court request for $10,664,256.

Cash Flow Statement Exxon Valdez Oil Spill Settlement United States and State of Alaska Joint Trust Fund
As of September 30, 1994

Receipts:

Exxon payments		
Deposit December 1991	36,837,111	
Deposit December 1992	56,586,312	
Deposit September 1993	68,382,835	
Deposit September 1994	58,728,400	
Total Deposits	220,534,658	220,534,658
Interest Earned	6,038,826	
Total Interest	6,038,826	6,038,826
Total Receipts		226,573,484

Disbursements:

Court requests		
Withdrawal June 1992	12,879,700	
Withdrawal December 1992	6,567,254	
Withdrawal June 1993	21,067,740	
Withdrawal November 1993	29,950,000	
Withdrawal November 1993	4,743,925	
Withdrawal June 1994	15,860,728	
Total Requests	91,069,347	91,069,347
District Court Fees	595,654	595,654
Total Disbursements		91,665,001
Balance in Joint Trust Fund		134,908,483

Footnotes - It should be noted that the Joint Trust Fund Balance includes the Restoration Reserve Fund which has been allocated $12 million to date. In addition, the statement does not reflect the recent court request for $10,664,256.

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 "G" Street, Anchorage, AK 99501
Phone: (907) 278-8012 Fax: (907) 276-7178

October 21, 1994

Mr. James K. Wilkens
Bliss & Wilkens
P.O. Box 201128
Anchorage, AK 99520-1128

Dear Mr. Wilkens:

Thank you for your letter of September 27, 1994, regarding Trustee Council authority. As we discussed, in my rush to provide you with the information, I inadvertently sent a response letter to you yesterday that contained a paragraph arrangement "glitch". This letter is the replacement of that letter and serves as the appropriate response.

The Trustee Council's authority is limited to approval of the expenditure of the joint settlement funds. They have no authority to contract in the Council name, or even to hire personnel. Instead, it must utilize the authority of one or more state or federal agencies to implement decisions. Thus, with respect to its habitat protection and land acquisition activities, the laws pertaining to the appropriate state or federal agency must be followed.

Both the Interior and Agriculture Departments have authority to purchase certain lands related to the EVOS restoration program. Under the statutory Real Property Acquisition Policy and the relevant appropriations acts, both departments are obligated to comply with the appraisal procedures set forth in the Uniform Appraisal Standards for Federal Land Acquisition (UASFLA). The appraisal process and procedures ordinarily used by the State are consistent with those in UASFLA. In the interests of uniformity, the Council therefore agreed to apply UASFLA to determine the approved appraised value that will be used as the basis for subsequent negotiations by the relevant state and federal agencies.

As to your second inquiry, under the statutory Federal Real Property Acquisition Policy, neither the Department of the Interior or Agriculture may offer to purchase at less than its appraised value. While these departments may negotiate to pay more than the approved appraised value, this involves the Committees on Appropriations of the House

and Senate which have by report language imposed the following:

> Lands shall not be acquired for more than the approved appraised value (as addressed in section 301(3) of Public Law 91-646) except for condemnations and declarations of taking, unless such acquisitions are submitted to the Committees on Appropriations for approval . . .

I understand that neither Department will proceed to acquire lands above the approved appraised value without so advising the Appropriations Committees of its intentions and awaiting their response.

The Trustee Council and its staff have had substantial discussions over the past year which have generally recognized that in spending restoration funds, the Trustee Council must consider the price to be paid relative to the injured natural resource and services being protected or restored. The Trustee Council may in certain situations consider paying more than the appraised value if that is necessary to complete the acquisition and the restoration benefits justify a higher price. On the other hand, the Trustee Council may decide that it is not a wise use of restoration funds to offer to purchase at appraised value where the restoration benefits of a particular acquisition do not justify the price.

As you are no doubt aware, the Trustee Council approved the expenditure of $7.5 million of joint funds, to be used in combination with other State funding sources, for the State's acquisition of inholdings within Kachemak Bay State Park. The contracted price for that acquisition was for restoration purposes and was based on approval by the Alaska State Legislature of a value for the property that was in excess of a fair market value appraisal procured by the State.

Again, please note that the Trustee Council has followed a prudent course that provides for protection of habitat that is necessary for restoration of injured resources at a fair and reasonable price. I anticipate that practice will continue.

We appreciate your time and effort and look forward to bringing this to a satisfactory closure for all parties.

Sincerely,

James R. Ayers
Executive Director

JRA/mir

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 "G" Street, Anchorage, AK 99501
Phone: (907) 278-8012 Fax: (907) 276-7178

MEMORANDUM

TO: Trustee Council

THROUGH: James R. Ayers
Executive Director

FROM: Traci Cramer
Traci Cramer
Administrative Officer

DATE: October 21, 1994

RE: Financial Report as of September 30, 1994

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   - Estimated funds available including receivables from Exxon are approximately $614,933,483 (see attached statement #1).

2. The balance in the Joint Trust Fund as of September 30, 1994 was $134,908,483 (see attached statement #2).

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- The court process was completed October 20, 1994 for actions taken at the July and August Trustee Council meetings. Due to timing, the total disbursement of $10,664,256 is not reflected on the attached statements.

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1. State of Alaska Projects - Authorization to receive and expend Exxon Valdez Oil Spill Funds was approved on August 27th.

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If you have any questions regarding the information provided please give me a call at 586-7152.

attachments

cc: Molly McCammon
Restoration Work Force

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Statement 1

Statement of Exxon Settlement Funds
As of September 30, 1994

Beginning Balance of Settlement	900,000,000
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Funds Available	
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Balance in Joint Trust Fund (See Statement 2)	134,908,483
Seal Bay acquisition payments due (See Note 3)	(9,975,000)
Other (See Note 2)	TBD
Total Estimated Funds Available	614,933,483

Note 1: Gross interest earned less District Court registry fees.

Note 2: Previously funded projects may have unobligated balances which will be available.

Note 3: Annual payments due in November 1994, 1995 and 1996.

Footnotes - It should be noted that the Joint Trust Fund Balance includes the Restoration Reserve Fund which has been allocated $12 million to date. In addition, the statement does not reflect the recent court request for $10,664,256.

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Cash Flow Statement Exxon Valdez Oil Spill Settlement United States and State of Alaska Joint Trust Fund
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Total Requests	91,069,347	91,069,347
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Total Disbursements		91,665,001
Balance in Joint Trust Fund		134,908,483

Footnotes - It should be noted that the Joint Trust Fund Balance includes the Restoration Reserve Fund which has been allocated $12 million to date. In addition, the statement does not reflect the recent court request for $10,664,256.

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 "G" Street, Anchorage, AK 99501
Phone: (907) 278-8012 Fax: (907) 276-7178

October 20, 1994

Mr. James K. Wilkens
Bliss & Wilkens
P.O. Box 201128
Anchorage, AK 99520-1128

Dear Mr. Wilkens:

Thank you for your letter of September 27, 1994, regarding Trustee Council authority. The Trustee Council may consider paying more than the appraised value if that is necessary to complete the acquisition and the restoration benefits are so high as to justify a higher price. On the other hand, the Trustee Council may decide that it is not a wise use of restoration funds to offer purchase at appraised value where the restoration benefits of a particular acquisition do not justify the price. The Trustee Council's authority is limited to approval of the expenditure of the joint settlement funds. It has no authority to contract in its own name, or even to hire personnel. Instead, it must utilize the authority of one or more state or federal agencies to implement its decisions. Thus, with respect to its habitat protection and land acquisition activities, the laws pertaining to the appropriate state or federal agency must be followed.

Both the Interior and Agriculture Departments have authority to purchase certain lands related to the EVOS restoration program. Under the statutory Real Property Acquisition Policy and the relevant appropriations acts, both departments are obligated to comply with the appraisal procedures set forth in the Uniform Appraisal Standards for Federal Land Acquisition (UASFLA). The appraisal process and procedures ordinarily used by the State are consistent with those in UASFLA. In the interests of uniformity, the Council therefore agreed to apply UASFLA to determine the approved appraised value that will be used as the basis for subsequent negotiations by the relevant state and federal agencies.

As to your second inquiry, under the statutory Federal Real Property Acquisition Policy, neither the Department of the Interior or Agriculture may offer to purchase at less than its appraised value. While these departments may negotiate to pay more than the

approved appraised value, this involves the Committees on Appropriations of the House and Senate which have by report language imposed the following:

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I understand that neither Department will proceed to acquire lands above the approved appraised value without so advising the Appropriations Committees of its intentions and awaiting their response.

The Trustee Council and its staff have had substantial discussions over the past year which have generally recognized that in spending restoration funds, the Trustee Council must consider the price to be paid relative to the injured natural resource and services being protected or restored.

As you are no doubt aware, the Trustee Council approved the expenditure of $7.5 million of joint funds, to be used in combination with other State funding sources, for the State's acquisition of inholdings within Kachemak Bay State Park. The contracted price for that acquisition was for restoration purposes and was based on approval by the Alaska State Legislature of a value for the property that was in excess of a fair market value appraisal procured by the State.

Again, please note that the Trustee Council has followed a prudent course that provides for protection of habitat that is necessary for restoration of injured resources at a fair and reasonable price. I anticipate that practice will continue.

We appreciate your time and effort and look forward to bringing this to a satisfactory closure for all parties.

Sincerely,

James R. Ayers
Executive Director

JRA/mir

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Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 "G" Street, Anchorage, AK 99501
Phone: (907) 278-8012 Fax: (907) 276-7178

MEMORANDUM

TO: Carl L. Rosier
Commissioner
Department of Fish & Game

FROM: James R. Ayers
Executive Director

DATE: October 20, 1994

RE: Trip Report

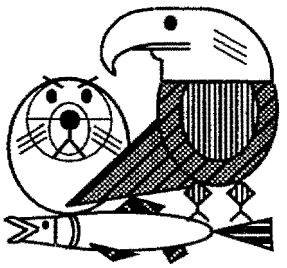
I travelled to Washington, DC, from October 10 - 14, 1994, for the purpose of meeting with the Federal Trustees to brief them on the current status of habitat acquisition.

In addition, I met with Department of Justice officials about final questions regarding the Research Institute in Seward.

JRA/mir

C:\WPDOCS\TRIPREP.MEM

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



MEMORANDUM

TO: Agency Liaisons

FROM: Molly McCammon, Director of Operations

DATE: October 20, 1994

SUBJ: Guidance Procedures for Final Reports

As a result of the most recent round of reviews, a final draft of the *Procedures for the Preparation & Distribution of Final Reports* has been prepared (copy enclosed). A listing and brief discussion of specific issues that were raised during the most recent review and how they were addressed is provided as an attachment to this memo.

As noted previously, it is recognized that a number of final reports have been developed without the benefit of these most recent guidance procedures. You will find, however, that the enclosed procedures for formatting are largely consistent with prior guidance issued by the Restoration Work Force. The most significant additional guidance beyond what was previously provided involves: (1) preparation of standardized cover pages, title pages, brief study histories, abstracts and the identification of key words to ensure consistency and proper cataloging of final reports; and (2) specific guidance regarding the reproduction and distribution of final reports. It is also recognized that, in some cases, it may not be possible to alter reports that have already been prepared and that, in some cases, there may be a need for additional support for production costs. I will work with each agency liaison to address these concerns on a case-by-case basis.

Unless there are further changes you feel need to be made, this version of the *Procedures* will be distributed at the beginning of November. Please let Eric Myers (278-8012) know how many copies of the guidance packet your agency will need.

enclosures

Issues raised during the most recent review of the draft *Procedures for the Preparation & Distribution of Final Reports* were addressed as follows:

- **Identification of NRDA reports vs. Restoration Project reports (project numbers):** NRDA projects are distinguished by alpha-numeric project numbers (e.g., MM6 for "Marine Mammal 6" or B8 for "Bird 8"). Restoration Projects are identified by a five-digit identification number (e.g., 93110, 94007).

- **Abstract and Executive Summary:** Both an Abstract as well as an Executive Summary are called for in the guidance packet. It was suggested by some that just an Abstract should suffice. However, the Abstract and the Executive Summary serve different purposes. The Abstract is primarily for cataloging purposes and to provide a sufficient amount of information to allow readers to determine whether they wish to read the entire report. The Executive Summary, by contrast, is intended to provide a summary that consolidates the principle points of the report in one place and allows the reader to digest the significance of the report without having to read it in full. The Executive Summary should be written so that it can be read independently of the report. More guidance regarding the content of an Abstract and an Executive Summary has been provided.

- **Report Cover Page and Title Page:** The design of the Cover Page and Title Page have been made consistent with one another.

- **Consolidated Example:** To clarify what is intended, a consolidated example of the first few pages of a hypothetical final report has been prepared as an attachment.

- **Electronic Copy of Final Report**: The request to provide a DOS electronic copy in Word Perfect of the report has been dropped. Concerns about this request included: (1) imposing a single software requirement was unrealistic given that certain report elements will be produced using other software types (for tables, graphics, etc.); and (2) an electronic copy, if distributed to the public, could potentially be manipulated inappropriately. OSPIC regarded availability of an electronic copy of reports as of limited utility (perhaps for word searching, but that can be addressed through key words).

- **Acknowledgments**: A new subsection in the "Report Format" was added to include Acknowledgments.

- **Key Words**: More explicit guidance has been provided regarding key words.

- **Reproduction of Reports/Submission to OSPIC:** The responsibility to provide thirty-six copies (4 camera-ready copies plus an additional 32 copies) of the final report to OSPIC remains with the report author (i.e., responsible agency). If there are specific reports for which it is not possible for an agency to prepare the copies required, please discuss those reports with me on a case-by-case basis.

- **Camera-ready Copy Specifications:** A camera-ready copy is an unbound copy of the report as it will appear in its final form, except that it must be *single sided* printing with blank pages inserted as appropriate.

- **Font/Proportional Spacing:** As previously, the guidance packet includes direction to use the font Times (12 point); if Times is not available, some other sarif font should be used (e.g., Palatino, Bookman or New Century Schoolbook).

- **Suggested Report Citation:** Attachment 1 now includes an example of a recommended report citation.

- **Reference to Journal Publications in Study History:** Additional guidance regarding the Study History was provided including direction to include references, as appropriate, to published journal articles about the investigations being reported.

PROCEDURES

for the

PREPARATION & DISTRIBUTION

of

FINAL REPORTS

Exxon Valdez Oil Spill Trustee Council
Anchorage Restoration Office
645 G Street — Suite 401
Anchorage, Alaska 99501
(907) 278-8012

October 1994

The purpose of these *Procedures for the Preparation and Distribution of Final Reports* is to provide guidance regarding the preparation, reproduction and distribution of final reports prepared for the *Exxon Valdez* Oil Spill Trustee Council. These procedures update and consolidate earlier guidance provided by the Restoration Team[1] and should be read together with the report writing guidelines provided by the *Journal of Wildlife Management.*[2] (Appendix A.) To the extent that there are any inconsistencies between the procedures identified in these *Procedures for the Preparation and Distribution of Final Reports* and that provided by Ratti, J. and L. Ratti (1988), the procedures in this guidance packet should be followed.

Unless otherwise indicated, it is expected that each project funded by the Trustee Council will produce a final report (or series of reports) subject to final approval by the Chief Scientist through the Trustee Council's peer review process. For purposes of identification, Natural Resource Damage Assessment (NRDA) projects are distinguished by alpha-numeric project numbers (e.g., MM6 for "Marine Mammal Study 6" or B08 for "Bird Study 8"). Restoration Projects are identified by a five-digit project number (e.g., 93110, 94007, 95191).

Nature of Final Reports: A final report for a project should be a comprehensive report addressing all data collected over the course of the entire study. The final report should address the original objectives of the study and any changes in the objectives. Final NRDA reports should be viewed as both the *first* and *last* word on the subject for the purpose of damage assessment under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

1. **Final Report Preparation**: The lead agency prepares a final report that meets the following standards. These standards will ensure the proper cataloging of final reports and ability to access them.

    A. **Report Cover:** The report cover should include identification of the report as either a (1) NRDA final report, or (2) Restoration Project final report;[3] provide the report title; include the project/study identification number; identify the author(s) with appropriate affiliations; and include the date (month/year) of publication. Use quality cover stock.

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[1] See "Additional Guidance for Preparation of Damage Assessment Final Reports," memo from J. Strand and K. Oakley to P. Bergmann and B. Morris (June 2, 1992).

[2] Ratti, J. and L. Ratti. 1988. Manuscript guidelines for the Journal of Wildlife Management, Journal of Wildlife Management 52 (1, Supplement), The Wildlife Society. Another useful reference regarding the preparation of scientific papers is Day, R.H. 1988. How to write and publish a scientific paper. 3rd Ed. Oryx Press, Phoenix.

[3] Include on the Cover Page and the Title Page the following uniform titles. For NRDA reports: *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report. For Restoration Project final reports: *Exxon Valdez* Oil Spill Restoration Project Final Report.

The color of the report cover should be as close as possible to the color of goldenrod as provided in the example. (Attachment 1.)

B. **Title Page:** The Title Page of the report should include the same information as the Cover Page. (Attachment 1.)

C. **Study History/Abstract/Key Words/Citation:** Following the Title Page, each report should include a single page that has: (1) a brief study history; (2) an abstract; (3) key words; and (4) a recommended citation for the final report. (Attachment 1.)

- **Study History:** Final reports should include a brief study history including reference to all prior study numbers; changes in the title of the project or report over time; work plans of which that study was a part; titles of study plans or draft reports which contributed to the final report; and citation of journal publications that have preceded publication of the final report.

- **Abstract:** An abstract, with a maximum length of 200 words,[4] should enable the reader to quickly identify the basic content of the report, determine its relevance to their interests and thus decide whether to read the document in its entirety. Do not use abbreviations or acronyms in the abstract.

- **Key Words:** A short list of key words (6 to 12 in alphabetical order) should be provided. Include some words from the title and others that identify: (1) common and scientific names of principal organisms, if any; (2) geographic area or region (if the region is well known); (3) phenomena and entities studied (e.g., behavior, reproduction, etc.); (4) methods (only if the report describes a new or improved method); and (5) other -- that is, words not covered above but useful for indexing.

- **Citation:** A recommended citation for the final report should be provided.

D. **Report Format:** Authors should follow the format set out below in preparing final reports after they are accepted by the Chief Scientist. Reports should meet normal scientific standards of completeness and detail that would permit an independent scientific reader to evaluate the reliability and validity of the methods, data and analyses.

- Cover Page (as described above).

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[4] A limit of 200 words is needed so that the report can be processed through the National Technical Information Service.

- Title Page (as described above).

- Study History/Abstract/Key Words/Citation (as described above).

- Table of Contents, Lists of Tables, Figures and Appendices.

- Executive Summary

  The purpose of the executive summary is to consolidate the principle points of the report in one place. It must provide information in enough detail to reflect the report's content and concisely enough to allow the reader to digest the significance of the report without having to read it in full. The executive summary is a concise statement of the purpose, scope, methods, results and conclusions of the report. The executive summary should be organized according to the sections of the report it summarizes with headings which mirror those used in the Table of Contents (i.e., Introduction, Objectives, Methods, Results, Discussion, Conclusions, etc.).

  The Executive Summary should be written so that it can stand independently of the report (i.e., it must not refer to figures, tables or references contained elsewhere and all acronyms, uncommon symbols, and abbreviations should be spelled out). Although the length of the Executive Summary will vary with individual reports, it should not exceed four single-spaced pages.

- Introduction

  The introduction should present first, with all possible clarity, the nature and scope of the problem investigated, including reference to the oil spill injured resource(s) and/or service(s) being addressed and the general area in which field activities were conducted. The introduction should review the pertinent literature and state the method of investigation. It should also briefly state the principal results. Do not keep the reader in suspense; let the reader follow development of the evidence.

- Objectives

  These should be the same as the objectives identified in the damage assessment plan or the detailed project description. If the objectives have changed, describe what has changed and why.

- Methods

  Provide a clear description of the methods used and the study area. To the extent the methodology differs from that described in the damage assessment plan or the detailed project description, explain the reason for the deviation.

- Results

  This should be an objective and clear presentation of the data that have been collected. In the case of damage assessment studies, investigators should make the presentation in a manner that will make clear to the reader:

  — evidence of injury found; and
  — evidence that the injury found was caused by the *Exxon Valdez* oil spill.

- Discussion

  The discussion should interpret the study results and explore the meaning and significance of the findings. The relevance to restoration should also be discussed here. Where there are unanswered questions, these should be brought out. Where appropriate, the relevant findings from other *Exxon Valdez* spill studies and literature should be cited.

- Conclusions

  This should be a brief, clear statement of conclusions that are apparent from the discussions; this should include conclusions related to restoration. Where there are **major** unanswered questions, these should be identified.

- Acknowledgements

- Literature Cited

2. **Word Perfect Conventions**:[5] To help produce reports with a consistent format, it is requested that reports be prepared in Word Perfect (5.1 or 6.0).

   - Use Format (shift, F8) to set up standard settings:

     Line

     Line spacing - single for final report
     Hyphenation - off (i.e., do not hyphenate at right margin)
     Justification - left (i.e., do not right-justify margins)
     Margins - 1 inch at top, bottom
     1 inch left, right
     Tabs - 0", every 0.5"

[5] These conventions were previously issued by the Restoration Team.

Widow Protection - On

Page
Page numbering - yes, bottom center
Header - not in final report

Document
Font - Times 12 point [6]

- Use Word Perfect's Table of Contents feature to create the Table of Contents, List of Figures and List of Tables.

- Prevent page breaks from separating headings from the following text. Do not use hard page breaks for this purpose.

- Use italics (rather than underlining) for Latin names and for *T/V Exxon Valdez*. If your printer does not print italics, then use underlining.

- Regularly use the spell check feature to catch typographical errors. Always do a complete spell check.

- Use the space bar, tab key and indent (F4) feature appropriately.

  — Use spaces only to separate words and sentences.

  — Use tabs to place characters at set locations across the page, such as when placing a list in the text.

  — Use indents when you want the text to wrap around at a tab point to the right of the left margin. Only use a hard return at the end of the text being indented.

- To make a hanging indent for use in the Literature Cited section, start each citation with indent, shift-tab. Only use a hard return at the end of the complete citation. Example:

  Byrd, G. V., D. Gibson, and D. L. Johnson. 1974. The birds of Adak Island, Alaska. Condor 76:288-300

[6] If Times is not available, some other sarif font should be used (e.g., Palatino, Bookman or New Century Schoolbook).

3. **Other Conventions:**[7] Use good-quality white paper 8.5 x 11" (215 x 280mm) or metric size A4. Reports prepared on dot matrix printers are not acceptable. Remove from the pages of the final report all reference(s) to "draft," "interim," or "draft final." When referring to the tanker vessel *Exxon Valdez* as a ship, use *T/V Exxon Valdez*. [Example: The *T/V Exxon Valdez* ran aground on Bligh Reef.] When referring to the oil spill that occurred because the *T/V Exxon Valdez* ran aground, use *Exxon Valdez* oil spill. After the first mention of the *Exxon Valdez* oil spill in your report, refer to it simply as the spill. Do not use acronyms such as EVOS.

   Use the terms "damages" and "injury" as defined by CERCLA regulations (see 43 CFR-11.14).

   > "Damages" means the amount of money sought by the natural resource trustee as compensation for injury, destruction or loss of natural resources.
   >
   > "Injury" means a measurable adverse change, either long or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil. Injury encompasses the phrases "destruction" and "loss."
   >
   > > "Destruction" means the total and irreversible loss of a natural resource.
   > >
   > > "Loss" means a measurable adverse reduction of a chemical or physical quality or viability of a natural resource.

   Avoid reference to interim reports. If it is necessary to cite to information presented in an interim report by another investigator, contact the investigator to determine if the information will be presented in a final report. Cite to final reports whenever possible.

4. **Final Report Review Process as to Form**: Upon acceptance of the final report by the Chief Scientist (including the study history, abstract and key words), the lead agency/principle investigator will be notified and a copy of the letter of approval will be sent to the Oil Spill Public Information Center (OSPIC).

   — Within 30 days of the date on which the Chief Scientist accepts the final report, the lead agency will submit one camera-ready copy of the final report to OSPIC at 465 G Street, Suite 100, Anchorage, Alaska 99501 (attention: OSPIC Director - Final Report).

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[7] These conventions were previously issued by the Restoration Team. See "Additional Guidance for Preparation of Damage Assessment Final Reports," memo from J. Strand and K. Oakley to P. Bergmann and B. Morris (June 2, 1992).

— Written notification of its receipt will be sent immediately by OSPIC to the PI/Author/Project Leader and the lead agency's liaison.

— Within 15 days of receipt of the final report, OSPIC will review it for compliance with the report format standards and notify the PI/Author/Project Leader and the lead agency's liaison in writing of its findings.

5. **Report Reproduction/Submission to OSPIC**: Within 60 days of the date of the letter from OSPIC regarding its review as to form, the lead agency will modify the final report (if necessary) and provide to OSPIC the requisite number of copies. Reproduction standards are presented below:

   — **Pages**: The body of the report should be printed in two-sided format. This standard will reduce the space needed to store reports.

   — **Number of Copies**: The lead agency will provide to OSPIC thirty-six copies of the final report (32 bound copies and 4 camera-ready copies). A camera-ready copy is an unbound copy of the report as it will appear in its final format, except that it has single-sided printing with blank pages inserted as appropriate. Bound copies are for libraries; camera-ready copies are for duplication upon request.

   — **Binding**: The 32 bound copies submitted to OSPIC should be bound using PERFECT binding.

6. **Distribution**: OSPIC will distribute copies of reports as shown in Attachment 2.

7. **Future Project Proposals**: The schedules and budgets of future project proposals should reflect the time and funding necessary to reproduce 36 copies (32 bound copies and 4 camera-ready copies) of the final report that meet the report format standards.

8. **Publication of Project Results Supported by the Trustee Council**: To preserve the opportunity for investigators to publish results in the peer-reviewed literature, the final reports will *not* be formally published as a series. The reports will be simply reports to a sponsoring agency. Investigators working on projects sponsored by the Trustee Council that are the subject of a journal article or other submission for publication should include the following statement with all such submissions:

   > "The research described in this paper was supported by the *Exxon Valdez* Oil Spill Trustee Council. However, the findings and conclusions presented by the author(s) are their own and do not necessarily reflect the views or position of the Trustee Council."

- Investigators who do not plan to submit results to peer-reviewed journals but who would like their results to be more widely reported may have other opportunities to publish their results. The Trustee Council may sponsor future *Exxon Valdez* oil spill symposiums and submitted papers may be published in symposium proceedings.

Attachment 1	Example: Cover Page/Title Page/Study History/Abstract/Key Words/Citation
Attachment 2	Distribution List for Final Reports
Appendix A	Ratti, J. and L. Ratti. 1988. Manuscript guidelines for the Journal of Wildlife Management, 52 (1 Suppl.), The Wildlife Society.

Attachment 1

Example:

Cover Page/Title Page/Study History/Abstract/Key Words/Citation

Note: The following example of a final report Cover Page, Title Page, Study History, Abstract, Key Words and Citation has been prepared on the basis of a completely hypothetical project as a guide to help with formatting and design of final reports. This example is based on a hypothetical Restoration Project final report and is identified accordingly. Natural Resource Damage Assessment (NRDA) final reports, as distinguished from Restoration Project final reports, should be identified as such (see "Final Report Preparation" discussion on page 1 of the *Procedures for the Preparation and Distribution of Final Reports*).

Exxon Valdez Oil Spill
Restoration Project Final Report

Investigation of the Breeding Success of Marbled Murrelets Injured by the *Exxon Valdez* Oil Spill

Restoration Project 95103
Final Report

Gretchen Smith
Mark Hansen
Nancy Johnson

U. S. Fish and Wildlife Service
1011 East Tudor Road
Anchorage, Alaska 99503

February 1995

Exxon Valdez Oil Spill
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February 1995

Investigation of the Breeding Success of Marbled Murrelets Injured by the *Exxon Valdez* Oil Spill

Restoration Project 95103
Final Report

Study History: Restoration Project 95103 was initiated as part of a detailed study plan in 1991 under Bird Study 13 (Injury Assessment of Hydrocarbon Uptake by Seabirds in Prince William Sound). The project effort continued under Restoration Project 93042. A draft report was issued in 1993 by Smith, G., under the title Investigation of *Exxon Valdez* Oil Spill Injury on the Breeding Success of Marbled Murrelets. The project effort was continued under Restoration Project 94103 (Productivity of Marbled Murrelets in Prince William Sound) and 95103 (Breeding Success of Marbled Murrelets). A journal article regarding the project was published in 1994 (Smith, G. 1994. Breeding success of marbled murrelets injured by the *Exxon Valdez* oil spill, *Journal of Seabird Ornithologists* 9(4);23-31).

Abstract: We studied reproduction of marbled murrelets (*Brachyramphus marmoratus*) breeding in Prince William Sound, Alaska, following the 1989 *Exxon Valdez* oil spill. We tracked 30 radio-collared adults to their nests. Seventy-five percent nested on branches in coniferous trees and 25% nested on the ground on snow-free rocky slopes above 1,000 m. Nests were initiated in May and chicks hatched in June and fledged in July. On average, 0.25 chicks fledged per nest. Most nest failures were due to predation by bald eagles (*Haliaeetus leucocephalus*) on adult murrelets flying between foraging areas and their nests. Adults foraged in waters within 5 km of their nests and delivered primarily sand lance (*Ammodytes hexapterus*) to their chicks. Following fledging, adults quickly left the breeding area while juveniles stayed within a 10 km radius of their nest until late September. Reproductive biology of murrelets in Prince William Sound was similar to that of British Columbia murrelets. Because of a lack of pre-spill data, specific effects of the oil spill on murrelet reproduction could not be determined.

Key Words: *Brachyramphus marmoratus*, breeding, *Exxon Valdez*, marbled murrelet, Prince William Sound, reproduction.

Citation: Smith, G., M. Hansen, and N. Johnson. 1995. Investigation of the breeding success of marbled murrelets injured by the *Exxon Valdez* oil spill, *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 95103), U.S. Fish and Wildlife Service, Anchorage, Alaska.

Attachment 2

DISTRIBUTION LIST FOR FINAL REPORTS

The Oil Spill Public Information Center (OSPIC) will distribute copies of final reports to:

- Alaska State Library (18 bound copies) - for distribution to the libraries in the state repository system.
- Oil Spill Public Information Center (5 bound copies and 1 camera-ready copy) - for the Administrative Record, OSPIC Reference Collection, Circulating Collection, and Interlibrary Loan.
- National Technical Information Service (1 camera-ready copy) - for reproduction upon request.
- Preston, Gates & Ellis (2 bound copies) - for litigation discovery purposes.
- Cordova Public Library (1 bound copy)
- Valdez Consortium Library (1 bound copy)
- Alaska Dept. of Environmental Conservation Library (1 bound copy)
- ADF&G Habitat Division Library (1 bound copy)
- Auke Bay Fisheries Lab Marine Fisheries Service Library (1 bound copy)
- U.S. Fish and Wildlife Service Library (1 bound copy)
- University of Washington Library (1 bound copy)
- TimeFrame (1 camera-ready copy) - for reproduction upon request.
- Clay's Printing (1 camera-ready copy) - for reproduction upon request.

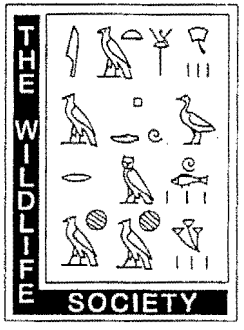
The Alaska State Library will distribute its copies to the following libraries:

Alaska Historical Library
E.E. Rasmuson Library (University of Alaska Fairbanks)
University of Alaska Anchorage Consortium Library
Library of Congress
Z.J. Loussac Library
Fairbanks North Star Borough Library
Alaska Resources Library
Washington State Library
Ketchikan Public Library
Sheldon Jackson Library
Northwest Community College Learning Resources Center
A. Holmes Johnson Library (Kodiak)
Kenai Community Library
Kuskokwim Consortium Library (Bethel)
National Library of Canada (Ottawa)
Center for Research Libraries (Chicago)
University of Alaska, Southeast (Juneau)

Appendix A

Ratti, J. and L. Ratti, 1988. Manuscript guidelines for the Journal of Wildlife Management, Journal of Wildlife Management, 52 (1 Suppl.) The Wildlife Society, Bethesda, Maryland

MANUSCRIPT GUIDELINES FOR THE JOURNAL OF WILDLIFE MANAGEMENT



By
John T. Ratti and Leslie W. Ratti

1988. J. Wildl. Manage. 52(1, Suppl.). 34 pp.
The Wildlife Society, Inc., Bethesda, MD

1 January 1988
John T. Ratti
Department of Fish & Wildlife Resources
University of Idaho
Moscow, ID 83843
208-885-6434

MANUSCRIPT GUIDELINES FOR THE JOURNAL OF WILDLIFE MANAGEMENT

JOHN T. RATTI, Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83843

LESLIE W. RATTI,[1] The Wildlife Society, c/o Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83843

Abstract: This publication provides guidelines for preparing manuscripts submitted to The Journal of Wildlife Management (JWM) for publication consideration. Authors should submit manuscripts in the format and style presented in these guidelines. Proper preparation increases the probability and speed of acceptance.

J. WILDL. MANAGE. 00(0):000-000

Key words: author, format, guidelines, instructions, manuscript, The Journal of Wildlife Management.

These guidelines update Gill and Healy (1980) and those on the back cover of some issues of JWM. This update was prepared to make the guidelines more available to authors by publication in JWM, to include basic format changes, and to provide additional examples. Authors should review a recent issue of JWM but should understand that there are differences between articles in final printed form and correct format of submitted manuscripts (e.g., key words, placement of tables and figures, and line spacing). Check the most recent JWM issues for instructions that may supersede these guidelines and the name and address of the current editor in chief. Papers

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[1]Present address: ThoroGold Farm, 2457 W. Twin Road, Moscow, ID 83843.

that obviously deviate from JWM format and style may be returned for correction before review.

Special thanks go to S. L. Beasom for major contributions to this manuscript. We received helpful review comments from B. B. Ackerman, C. E. Braun, D. E. Capen, J. D. Gill, F. S. Guthery, G. B. Healy, H. E. Hodgdon, R. L. Kirkpatrick, F. L. Knopf, P. R. Krausman, N. A. Lawrence, K. R. Rautenstrauch, and P. E. White. Portions of this manuscript have been extracted from Gill and Healy (1980) with permission of The Wildlife Society. This is Contribution 293, University of Idaho Forest, Wildlife, and Range Experiment Station.

POLICY

Referees and editors judge each submitted manuscript on data originality, ideas, interpretations, accuracy, conciseness, clarity, appropriate subject matter, and contribution to existing literature. Prior publication or concurrent submission to other refereed journals precludes publication in JWM (see additional information in section on Transmittal Letter and Submission). The JWM, Wildlife Society Bulletin, and Wildlife Monographs have identical quality standards. Fisheries papers are discouraged unless information is part of an account that mainly concerns terrestrial vertebrates.

PAGE CHARGES AND COPYRIGHTS

Current policies and charges are explained in the acknowledgment sent to authors when manuscripts are accepted for publication. Page charges may change annually; in 1987 they were $50/page for the first 10 pages plus $95 for each succeeding page. Authors pay for alterations to page proofs (in 1987, $2/reset line) except for typesetting and editorial errors. If a manuscript not in the public domain is accepted for publication, authors or their employers must transfer copyright interest to The Wildlife Society. Publications authored by federal government employees are in the public

domain. Manuscript submission implies entrusting a clear copyright (or equivalent trust in public domain work) to the editor in chief until the manuscript is either rejected, withdrawn, or accepted for publication. If accepted, The Wildlife Society retains the copyright.

COPY

Use good-quality white paper, 215 x 280 mm (8.5 x 11 inches) or metric size A4: Do not hyphenate words at the right margin. If your manuscript is typed with a computer word processor, do not right-justify the text. Manuscripts produced on poor-quality dot matrix printers are not acceptable.

Margins should be 3 cm (1 3/16 inches) on all sides. Do not violate margin boundaries to begin a new paragraph or the Literature Cited section at the top of a new page; i.e., do not leave >3 cm of space at the bottom of a page. Type the senior author's last name (upper left) and page numbers (upper right) on pages 2 through the Literature Cited and on tables and figure title pages, but not on the first page, figures, or illustrations. Underline words in the text only to indicate italics for scientific names or emphasis (rarely). Keep the original copy and submit 4 good-quality photographic copies. Submit a transmittal letter (see below) with your manuscript.

RUNNING HEAD, TITLE, AND AUTHORS

Page 1 of the manuscript should begin with the date (update with each revision), corresponding author's name, address, and telephone number, single-spaced in the upper left corner. Thereafter, all text is double-spaced, including tables.

The running head (RH) is the first line following the correspondent's address. The RH is limited to 45 characters, left-justified, and typed in upper- and lower-case letters followed by a dot (or raised period) and the last name(s) of 1 or 2 authors. For ≥3 authors use the name of the first author followed by "et al." Single underline the author's name(s). The RH is

used in final printed form as an abbreviated title at the top of each page following the title page.

The title follows the RH, is also left-justified in all upper-case letters, should not include abbreviations, and should not exceed 10 words unless doing so forces awkward construction. In such cases, use ≤13 words. The title identifies manuscript content. Do not use scientific names in the title except for organisms that do not have, or are easily confused by, common names. Use digits for numbers.

Author's names are left-justified in upper-case letters followed by affiliation and address in upper- and lower-case letters (usually where the author was employed during the study). The second and third lines of the author's address are indented 5 spaces. Use available postal codes (Appendix A) in each address. Write out words like Street, Avenue, and Boulevard but abbreviate directions (e.g., N. and N.W.). For multiple authors with the same address, repeat the address after each author's name. See recent issues of JWM for by-line examples.

FOOTNOTES

Footnotes in the text usually are restricted to the bottom of the first page to reference the present address of an author when it differs from the by-line address. Footnotes also may be used to indicate a deceased author. The footnote appears immediately below a left-justified solid line of 10 characters, is indented 5 spaces, and starts with a numerical superscript; subsequent lines are left-justified. The origin of the footnote is the corresponding numerical superscript following the author's name. Endorsement disclaimers and pesticide warnings should be incorporated in the text. For table footnotes, see the Tables section.

ABSTRACT

Begin with the word "Abstract" underlined, left-justified, and followed by a colon. The Abstract text begins after the colon on the same line, and

should be a single paragraph not exceeding 1 line/page of text, including Literature Cited. The Abstract should include:

Problem Studied or Hypothesis Tested.--What was it and why is it important? Indicate new data, ideas, or interpretations used directly or indirectly to manage wildlife.

Results.--Emphasize the most important results, positive or negative, but keep the methods brief unless a new or much-improved method is reported.

Utility of Results.--Explain how, where, when, and by whom data or interpretations can be applied to wildlife problems or contribute to knowledge of wildlife science.

On the line following the Abstract, type "J. WILDL. MANAGE. 00(0):000-000" on the right half of the page (see page 1 of this manuscript).

KEY WORDS

Key words follow the abstract. The phrase "Key Words" is underlined, followed by a colon and 6-12 words in alphabetical order. Include some words from the title and others that identify (1) common and scientific names of principal organisms, if any; (2) geographic area, usually the state, province, or equivalent, or region if its name is well known; (3) phenomena and entities studied (e.g., behavior, populations, radio telemetry, habitat, nutrition, browse, density estimation, or reproduction); (4) methods--only if the manuscript describes a new or improved method; and (5) other--words not covered above but useful for indexing. Type a solid line from the left to the right margin beneath the key words; begin the text 2 spaces below this line.

HEADINGS AND MAJOR SECTIONS

Headings

Three levels of headings may be used and examples of each appear in this manuscript. First-level headings are in upper-case letters, are left-justified, and may be in bold face type. Second-level headings also are

left-justified but only the first letter of each word (except articles and prepositions) is upper-case. Third-level headings also have the first letter of each word upper-case, but are indented 5 spaces, underlined, and followed by a period and 2 hyphens. Although short papers (<4 pages) may not require any headings, most require at least first-level headings. Under a first-level heading, use only third-level headings if the subsections are short (≤2 paragraphs). With second- and third-level headings avoid repeating the exact wording of the heading in the first sentence. Do not leave headings standing alone on the last line of a page (i.e., as a "widow line").

Major Sections

The introduction (no heading) follows the line below Key Words and is a concise review of literature specifically related to the manuscript's main topic. The latter part of this section specifies objectives or hypotheses tested. The last paragraph is reserved for acknowledgments (no heading), which should be brief and include both initials (where appropriate) of individuals cited. Agency or affiliation names should not be abbreviated in this section.

Most JWM manuscripts have 7 major sections: introduction, Study Area, Methods, Results, Discussion, Management Implications, and Literature Cited. Some authors combine Study Area and Methods, and Results and Discussion. Combining Results and Discussion sections is not recommended. Merging these sections so that results can be interpreted when first presented often leads to superfluous wording, unnecessary discussion, and confusion.

Most study area descriptions should be presented in past tense; e.g., average annual precipitation was 46 cm (CBE Style Man. Comm. 1983:38-39). Methods should be brief and include dates, sampling periods, research or experimental design, and sampling and data analyses methods. Previously published methods should be cited without explanation. New or modified methods should be identified as such and explained in detail.

Present Results in a clear, simple, concise, and organized fashion. Avoid overlapping text with information in tables and figures; resist explaining analyses that should be presented in the Methods. In most cases results should be presented in the past tense. Reserve interpretation comments for the Discussion.

The Discussion provides an opportunity for interpreting data and making literature comparisons. Reasonable speculation and new hypotheses to be tested may be included in the Discussion. Do not repeat results and comment only on the most important results. Systematic discussion of every aspect of the research leads to unnecessarily long manuscripts.

The Management Implications section should be short and direct, but is important to conservation issues. This section may be speculative, but should address specific management opportunities or problems wherever possible.

STYLE AND USAGE

Many manuscripts with publishable data are rejected because of poor writing style (i.e., long and complex sentences, superfluous words [Table 1], unnecessary information, and poor organization). Most editors are patient with this problem and are willing to offer helpful suggestions. However, referees tend to be less tolerant of poor writing, and this problem may lead to unnecessarily negative reviews. Authors are urged to review Chapters 3 and 4 in the "CBE Style Manual" (CBE Style Man. Comm. 1983) and "Writing with Precision, Clarity, and Economy" by Mack (1986). Manuscripts should be direct and concise. Using a carefully prepared outline to guide manuscript writing will remedy many common problems. Other helpful suggestions are presented by Strunk and White (1979), Day (1983), and Batzli (1986). Use the first person and active voice whenever appropriate. Review the list of commonly misused words (Table 2) before preparing your manuscript.

Numbers and Unit Names.--Use digits for numbers (e.g., 7 and 45) unless

the number is the first word of a sentence, where it is spelled out. Use symbols or abbreviations (e.g., % and kg) for measurement units that follow a number unless the number is indefinite (thousands of hectares), is a "0" (zero) standing alone, or is the first word in a sentence. In such cases spell out the number and unit name or recast the sentence. Avoid using introductory phrases such as "A total of ... ." Spell out numbers used as pronouns (i.e., one) or adverbs and ordinal numbers (e.g., first and second). However, use digits for cases such as 3-fold and 2-way. Use fractions (1/4, 1/3, etc.) only where conversion to decimals misrepresents precision.

Hyphenate number-unit phrases used as adjectives (e.g., 3-m^2 plots and 3-year-old males), but not those used as predicate adjectives (e.g., plots were 3 m^2). Insert commas in numbers ≥1,000 (except for pages in books, clock time, or year dates). Do not insert a comma or hyphen between consecutive, separate numbers in a phrase (28 3-m^2 plots). Never use naked decimals; i.e., use 0.05, not .05.

Time and Dates.--Use the 24-hour system: 0001 through 2400 hours (midnight). Date sequence is day month year, without punctuation. Use an apostrophe for plural dates (e.g., 1970's). Spell out months except in parentheses, tables, and figures, in which 3-letter abbreviations are used with no period (e.g., 31 Mar 1947; Appendix B).

Mathematics and Statistics.--Underlining symbols (Appendix B) instructs the typesetter to use italic type. Underline Roman letters used as symbols for quantities (e.g., n, $\bar{X}$, F, t, Z, P, and X). Do not underline numbers, Greek letters, names of trigonometric and transcendental functions, or certain statistical terms (e.g., ln, e, exp, max., min., lim, SD, SE, CV, and df). Draw a wavy underline or annotate items that should be set in boldface type.

Insert a space on both sides of symbols used as conjunctions (e.g., $P > 0.05$), but close the space when used as adjectives (e.g., >20

observations). Where possible, report exact probabilities ($P = 0.057$, not $P > 0.05$). A subscript precedes a superscript (X_i^3) unless the subscript includes >3 characters. Break long equations for column-width printing (67 mm) if they appear in the main body of the manuscript; long equations and matrices can be printed page-width (138 mm) in appendixes. Swanson (1974) or the CBE Style Manual Committee (1983:28-30, 150-153) should be followed for general guidance and MacInnes (1978) for advice on presentation of statistics. Authors are urged to read Tacha et al. (1982) and Wang (1986) for reviews of common statistical errors.

Abbreviations.--Metric units, their appropriate prefixes, and abbreviations identified by an asterisk in Appendix B may be used in the text. All other abbreviations used in the text must be defined the first time used. Do not start sentences with acronyms. All abbreviations in Appendixes A, B, and C may be used within parentheses.

Punctuation.--Use a comma after the next-to-last item in a series of ≥3 items (e.g., red, black, and blue). Do not hyphenate prefixes, suffixes, or combining forms unless necessary to avoid confusion. Closing quotation marks are always placed after periods and commas, but may be placed either before or after other punctuation (CBE Style Man. Comm. 1983:137).

Fences must appear in pairs, but the sequence varies. Use ([]) in ordinary sentences, use ([()]) in mathematical sentences, and use (()) only in special cases such as chemical names. Brackets are used to enclose something not in the original work being quoted (e.g., insertion into a quotation or a translated title [CBE Style Man. Comm. 1983:134]).

Enumerating Series of Items.--When enumerating series a colon must precede the numbered items unless preceded by a verb or preposition. In simple series place numbers within parentheses (see example in Key Words section). When enumerating lengthy or complexly punctuated series place the numbers at the left margin, with periods but no parentheses, and indent

run-on lines (see example in Tables section).

COMMON AND SCIENTIFIC NAMES

Do not capitalize common names of species except words that are proper names (e.g., Canada goose [Branta canadensis], Swainson's hawk [Buteo swainsoni], white-tailed deer [Odocoileus virginianus]). Scientific names should follow the first mention of a common name, except in the title. If a scientific name is given in the abstract, do not repeat it in the text or tables. Scientific names following common names are underlined (not italics) in parentheses with the first letter of the genus upper-case and the species name in lower-case letters. Abbreviate genus names with the first letter when they are repeated within a few paragraphs, provided the meaning is clear and cannot be confused with another genus mentioned in the manuscript with the same first letter; e.g., we studied snow geese (Chen caerulescens) and Ross' geese (C. rossii).

Do not use subspecies names unless essential and omit taxonomic authors names. Use "sp." to indicate species unknown (spp. for plural); e.g., the field was bordered by willow (Salix sp.). Use the most widely accepted nomenclature where disagreement occurs. As general references use The American Ornithologists' Union (1983) for birds and Honacki et al. (1982) for mammals. For plants there is no single reference for North America; we recommend citing the most widely accepted regional flora reference (e.g., in northwestern states, Hitchcock and Cronquist [1973]). Omit scientific names of domesticated animals or cultivated plants unless a plant is endemic or widely escaped from cultivation, or is a variety that is not described adequately by its common name.

MEASUREMENT UNITS

Use Systeme Internationale d'Unites (SI) units and symbols. Use English units only in parentheses following a converted, metric-unit quantity that may misrepresent the precision of a nominal, trade dimension. However, these

non-SI units are permitted:

area -- hectare (ha) in lieu of 10^4 m^2;

energy -- calorie (cal) in lieu of Joule (J);

temperature -- Celsius (C, without degree symbol) in lieu of Kelvin (K);

time -- minute (min), hour (hr), day, etc. in lieu of seconds (sec);

volume -- liter (L) in lieu of dm^3.

The CBE Style Manual Committee (1983:147-153) provided definitions of SI units and prefixes and listed 9 references. The American Society of Testing Materials (1979) included many conversion factors.

CITING LITERATURE IN TEXT

Published literature is cited by author and year; e.g., Jones (1980), Jones and White (1981). With ≥3 authors use "et al."; e.g., Jones et al. (1982). Do not separate the author and date by a comma, but use a comma to separate a series of citations and put these in chronological order; e.g., (Jones 1980, Hanson 1986). If citations in a series have >1 reference for the same author(s) in the same year, designate the years alphabetically (underlined) and separate citations with semicolons; e.g., (Jones 1980a,b; Hanson 1981; White 1985, 1986). For citations in a series with the same year, use alphabetical order within chronological order; e.g., (Brown 1977, Clark 1977, Reese 1977, Allen 1980). For a quotation or paraphrase, cite author, year, colon, and page number(s). Use the same style for a book or other lengthy publication unless the reference is to the entire publication; e.g., Odum (1971:223) or Steel and Torrie (1980:316-321). Avoid referencing common knowledge, particularly conventional tests of probability.

Cite documents that are cataloged in major libraries, including theses and dissertations, as published literature. This includes symposia proceedings and U.S. Government reports that have been widely distributed. However, cite such references as unpublished information if they are not easily available. Cite unpublished information in the following forms:

(J. G. Jones, Natl. Park Serv., pers. commun.), (D. F. Brown, Ariz. Game and Fish Dep., unpubl. data), (D. E. Timm, Annu. Waterfowl Rep., Alas. Dep. Fish and Game, Juneau, 1977).

A manuscript accepted for publication is cited as a published manuscript in the text using the anticipated publication year. In the Literature Cited, show the year after the name(s) of the author(s) and "In Press" after the volume number (see below).

LITERATURE CITED STYLE

Type the Literature Cited double-spaced immediately following the text, not necessarily on a new page. Alphabetize by author's surname(s), regardless of the number of multiple authors for the same publication. Within the alphabetical order the sequence is chronological. Use upper- and lower-case letters (typing all capital letters complicates editing names such as DeGraaf and van Druff). Use 2 initials (where appropriate) with 1 space between. For multiple citations with the same author(s), use a 5-spaced line to replace the author's name(s) after the first citation. See Appendixes A and C for word abbreviations commonly used in JWM literature citations. Do not abbreviate 1-word journal names (e.g., Ecology). For serial publications, show the issue number only if the pages of each issue are numbered separately. Omit unnecessary words, but do not remove a conjunction if the meaning may be changed (e.g., Game and Fish vs. Game Fish). As in the text, spell out ordinal numbers (e.g., Third ed.). Please review the following examples.

Book -- More Than 1 Edition

Smith, R. L. 1974. Ecology and field biology. Second ed. Harper & Row Publ., New York, N.Y. 850pp.

Book -- More than 1 Volume

Palmer, R. S. 1976. Handbook of North American birds. Vol. 2. Yale Univ. Press, New Haven, Conn. 521pp.

Book -- Editor As Author

Temple, S. A., editor. 1978. Endangered birds: management techniques for preserving threatened species. Univ. Wisconsin Press, Madison. 466pp.

Chapter Within Book

Zeleny, L. 1978. Nesting box programs for bluebirds and other passerines. Pages 55-60 in S. A. Temple, ed. Endangered birds: management techniques for preserving threatened species. Univ. Wisconsin Press, Madison.

Note: Total page numbers are not given in this case.

Theses (M.S. and Ph.D.)

Tacha, T. C. 1981. Behavior and taxonomy of sandhill cranes from mid-continental North America. Ph.D. Thesis, Oklahoma State Univ., Stillwater. 110pp.

Note: Include state or province name if it is not in institution title.

Journals -- General Format

Miller, M. R. 1986. Molt chronology of northern pintails in California. J. Wildl. Manage. 50:57-64.

Journals In Press -- Year and Volume Known

Rotella, J. J., and J. T. Ratti. 1986. Test of a critical density index assumption: a case study with gray partridge. J. Wildl. Manage. 50:In Press.

Journals In Press -- Year and Volume Unknown

Hohman, W. L., and B. L. Cypher. In Press. Age-class determination of ring-necked ducks. J. Wildl. Manage.

Symposia and Proceedings -- Complete Volume

DeGraaf, R. M., technical coordinator. 1978. Proc. workshop management of southern forests for nongame birds. U.S. For. Serv. Gen. Tech. Rep. SE-14. 176pp.

Note: Abbreviate words like Proceedings (Proc.), Symposium (Symp.), and

Transactions (Trans.) when they are the first word in the title; otherwise spell out.

Symposia and Proceedings -- Individual Article

Dickson, J. G. 1978. Forest bird communities of the bottomland hardwoods. Pages 66-73 in R. M. DeGraaf, tech. coord. Proc. workshop management of southern forests for nongame birds. U.S. For. Serv. Gen. Tech. Rep. SE-14.

Note: total page numbers are not given in this case.

Symposia and Proceedings -- Part of a Numbered Series

Palmer, T. K. 1976. Pest bird control in cattle feedlots: the integrated system approach. Proc. Vertebr. Pest Conf. 7:17-21.

Multiple Citations of the Same Author(s)

Peek, J. M. 1963. Appraisal of a moose range in southwestern Montana. J. Range Manage. 16:227-231.

_____. 1986. A review of wildlife management. Prentice-Hall, Englewood Cliffs, N.J. 486pp.

_____, and A. L. Lovaas. 1968. Differential distribution of elk by sex and age on the Gallatin winter range, Montana. J. Wildl. Manage. 32:553-557.

_____, _____, and R. A. Rouse. 1967. Population changes within the Gallatin elk herd, 1932-1965. J. Wildl. Manage. 31:304-316.

_____, and R. A. Rouse. 1966. Preliminary report on population changes within the Gallatin elk herd. Wildl. Sci. 82:1298-1316. (Fictitious citation used for example only.)

Government Publication

Lull, H. W. 1968. A forest atlas of the Northeast. U.S. For. Serv., Northeast For. Exp. Stn., Upper Darby, Pa. 46pp.

Government Publication -- Part of a Numbered Series

Anderson, D. R. 1975. Population ecology of the mallard: V. Temporal and geographic estimates of survival, recovery, and harvest rates. U.S. Fish and Wildl. Serv. Resour. Publ. 125. 110pp.

Government Publication -- Agency as Author

National Research Council. 1977. Nutrient requirements of poultry. Seventh ed. Natl. Acad. Sci., Washington, D.C. 62pp.

Note: Cite in text as National Research Council (1977) or (Natl. Res. Counc. 1977).

TABLES AND FIGURES

Submit only essential tables and figures. Often tables overlap with presentation in the text, or the information can be easily printed in the text with less journal space. Do not present the same data in a table and a figure. Number tables and figures independently. In the text limit reference of tabular data to highlights of the most important information. In most cases reference tables and figures parenthetically. Avoid statements such as "The results are shown in Tables 1-4." Prepare line drawings only for data that cannot be presented as clearly in a table. For general guidance see CBE Style Manual Committee (1983:67-85).

Tables and figures should be self-explanatory; avoid reference to the text, and be sure the title includes the species or subject of the data and where and when the data were collected. In rare cases, titles or footnotes of tables and figures may be cross-referenced to avoid repeating long footnotes or the same data. However, this violates the "self-explanatory" rule and should be avoided. When a table or figure is first mentioned in the text, indicate in the margin "Table " or "Fig. ," and the corresponding number (see this manuscript for examples).

Tables

Do not prepare tables for small data sets, those containing many blank spaces, zeros, repetitions of the same number, or those with few or no significant data. Put such data or a summary of them in the text. Day (1983) presents a practical discussion of tables.

For data that must be shown in a table, items that provide the most important comparisons usually read vertically, not horizontally. Construct tables for column-width (67 cm) printing. If the table will not fit in 1 column width, construct it for page-width printing not wider than 23 cm (9 inches). Some extra-wide tables can be printed vertically (e.g., JWM 50:192, 51:461), but such tables usually waste space. Extra-long and extra-wide tables require persuasive justification.

Table titles may vary, but we recommend this sequence: (1) name of the characteristic that was measured (e.g., weight, age, and density), (2) measurement unit or units in parentheses (e.g., cm, No./ha, M:100 F, or %), (3) name of organism or other entity measured (e.g., "of Canada geese"), and (4) place and date. Each part of the sequence can include >1 item (e.g., "Carcass and liver fat [%] and adrenal and kidney weight [mg] of white-tailed deer in Ohio and Michigan, 1975)."

Avoid beginning the title with "puff" words (e.g., The, Summary of, and Comparisons between) and words that can be presented parenthetically as symbols or abbreviations (e.g., %). Symbols such as n and % in the title seldom need repetition in table headings. Do not use abbreviations in table title, except within parentheses. However, use standard abbreviations and symbols (Appendix B) in the table body and in footnotes.

The lines printed in tables are called "rules," and JWM standards are

1. None drawn vertically within the table.
2. Three rules across the entire table: below the title, below the column headings, and at the bottom. Type each as a single, continuous line.
3. Use rules that straddle subheadings within the column heading (e.g., JWM 50:48).
4. None to show summation if "Total" or equivalent is in the row heading.
5. For results of multiple-range tests use rules to join the means if only 1 rule/row of means is needed. Break the line between sets of means that differ (e.g., JWM 50:371). If ≥2 rules are needed, use Roman upper-case letters instead of rules (e.g., 12.3A[a], 16.2A, and 19.5B) where the superscript "a" references a footnote such as "[a]Means with the same letters are not different ($P > 0.10$)" (e.g., JWM 50:22). Upper-case letters may be used in a similar fashion to reference the relationships of data among columns (e.g., JWM 50:371).

In column headings use straddle rules liberally to join related columns and reduce wordage (e.g., JWM 50:31). Label columns to avoid unnecessary print in the data field. For example, instead of "$\bar{x} \pm$ SE," label $\bar{x}$ and SE separately so that $\pm$ need not be printed. Similarly, label sample size columns "n" instead of using numbers in parentheses in the data field.

Keep column- and row-heading words out of the data field. Type main headings flush left, and indent their subheadings (e.g., JWM 50:86). In the data field, do not use dashes (often misused to mean "no information") or zeros unless the item was measured and 0, 0.0, or 0.00 correctly reports the precision. Similarly, respect digit significance in all numbers, particularly percentages. Do not use percentages where n is <26, except for 1 or 2 samples among several others where n is >25. Where the number of significant digits varies among data in a column, show each datum at its precision level; i.e., do not exaggerate precision.

For footnote superscripts use asterisks for probability levels and lower-case Roman (not italic) letters for other footnotes. Use this sequence for placing letters alphabetically: in the title, then left-to-right, and then down. Make certain that each footnote character in the title and table matches an explanation that is indented below the table. Left justify run-on lines of footnotes. Use footnotes liberally to reduce cluttering the title and table with details. The most common errors in tables are single spacing, incomplete titles, naked decimal points, and ambiguous or unnecessary characters in the data field.

Figures

Most figures are either line drawings or pictures ("picture" is used to distinguish scene or object photographs from photos of drawings). If possible, photographic prints should not exceed 20 x 25 cm. Submit 3 prints of a picture; for drawings submit either 3 prints or 1 print and 2 photographic copies. Retain original drawings to guard against loss or damage. Consult Allen (1977), the CBE Style Manual Committee (1983:67-80), and Day (1983) for additional guidance.

Type figure captions on a separate page. On the back of each figure lightly print (in soft pencil) the senior author's name, figure number, and "Top." Figure titles tend to be longer than table titles because figures are not footnoted. The title may be several sentences and include items such as regression equations, exceptions, and brief suggestions for interpreting the relationships shown.

Pictures.--Few pictures are accepted. They must have sharp focus in the most important parts of the image, have high tonal contrast, a reference scale if size is important, a glossy finish, and must be unmounted. Letters, scales, or pointers can be drawn on the prints, but they must be of professional quality. Sets of 2-4 related pictures can be handled as 1 figure if prints are the same width and will fit in a space 67 x <170 mm when reduced for printing. Label prints A, B, C, D or use "Top," etc., for reference in the figure title. Cropping improves composition of most pictures, but do not put crop marks on prints. Instead, put them on xerographic copies or sketches. Do not submit color prints unless you are able to pay for printing at $1,800/plate (as of 1987).

Line Drawings.--Consider whether a drawing can be printed column width (67 mm) or is so detailed that it must be printed page width (138 mm). The difference depends mainly on size of characters and lengths of legends drawn on the figure. If page width is necessary, consider omitting some of the

detail and look for ways to shorten legends. Column-width figures are preferred (e.g., JWM 50:145).

Before revising the first sketch, determine the minimum height for letters, numbers, and other characters, which must be ≥1.5 mm tall after reduction for printing. Decide on a width for the revised sketch and measure it in millimeters. To determine the minimum height (mm) for characters, multiply the width by 0.0224 for column-width printing or 0.0109 for page-width printing. If in doubt as to printed width, use the column-width multiplier. The product is the minimum height in millimeters. Plan to use at least the next larger character height available. Hand-drawn lines and lettering and typewriter characters are not acceptable. We recommend professionally prepared line drawings with type-set lettering. Lettering from most personal computer-generated graphics software and printers is not acceptable.

Use lower-case or italic letters only where they are essential to the meaning, as in mathematical terms and most metric units (see subsection on Math. and Stat. and Appendix B). Otherwise use all upper-case letters, which are more legible when reduced. Identify arbitrary symbols by legend within the figure (preferred) or, for those normally available to the printer (e.g., CBE Style Man. Comm. [1983:72]), in the figure title.

TRANSMITTAL LETTER AND SUBMISSION

Check the most recent issue of JWM for the name and address of the editor in chief. Send the manuscript with a transmittal letter that indicates you are submitting exclusively to JWM and that no part of the manuscript has been published or is being considered for publication elsewhere. If any portion of the manuscript has been published or reported elsewhere, furnish 4 copies of each report or publication. If the manuscript relates to but does not duplicate other publications or manuscripts by the same authors, send 4 copies of each to assist reviewers and editors in assessing the submitted

manuscript.

Theses (M.S. and Ph.D) do not constitute prior publication and need not be mentioned in the letter, but they should be cited in the manuscript. Similarly, brief abstracts of talks given at meetings do not constitute prior publication. Generally, unpublished reports that were required by sponsors and that were not distributed as part of a numbered series (or in other ways that might result in accession by libraries) do not constitute prior publication. Most symposia proceedings are considered publications. However, editors may decide these case by case. Provide information that bears on ethical and copyright considerations (CBE Style Man. Comm. 1983:1-6, 87-92) and any other information that might facilitate review and editing.

REVIEW PROCESS

Manuscripts are submitted to the editor in chief who selects a minimum of 2 reviewers from JWM files and personal knowledge. The JWM has a board of associate editors, each with specialized knowledge of subject areas. The manuscript is mailed to the reviewers and an appropriate associate editor. Reviewers are instructed to return their comments to the associate editor, who usually takes 1 of 3 actions after assessing the manuscript and review comments: (1) the manuscript is forwarded to the editor in chief with a recommendation to publish without revision (extremely rare), (2) the manuscript is returned to the author(s) with review comments and suggestions for revision, or (3) the manuscript is rejected and the file is returned to the editor in chief.

A third reviewer may be selected if a manuscript is controversial or if reviewers differ widely in their opinions. Several revisions may be necessary before the associate editor decides to reject or recommend acceptance. Final acceptance of manuscripts is decided by the editor in chief. The editor in chief may review manuscripts that have been rejected by an associate editor if a request is accompanied by a convincing rebuttal

letter.

The time span between submission and final decision to accept or reject averages 6 months, but varies from 1 to 20 months depending on the number of revisions required and the time manuscripts are held by reviewers and authors. Manuscripts seldom are delayed in either editorial office more than 2-3 weeks during the review process. After acceptance, manuscripts usually are printed within 6-8 months.

LITERATURE CITED

Allen, A. 1977. Steps toward better scientific illustrations. Allen Press Inc., Lawrence, Kans. 33pp.

American Ornithologists' Union. 1983. Check-list of North American birds. Sixth ed. Allen Press Inc., Lawrence, Kans. 877pp.

American Society of Testing Materials. 1979. Standard for metric practice, ASTM E 380-379. Am. Soc. Testing and Materials, Philadelphia, Pa. 42pp.

Batzli, G. O. 1986. Thoughts while cleaning out old editorial files. Bull. Ecol. Soc. Am. 67:167-168.

CBE Style Manual Committee. 1983. CBE style manual. Fifth ed. Counc. Biol. Eds., Inc., Bethesda, Md. 324pp.

Day, R. A. 1983. How to write and publish a scientific paper. Second ed. ISI Press, Philadelphia, Pa. 181pp.

Gill, J. D., and G. B. Healy. 1980. Guidelines for Journal of Wildlife Management manuscripts, 1980. The Wildl. Soc., Washington, D.C. 29pp.

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Honacki, J. H., K. E. Kinman, and J. W. Koeppl. 1982. Mammal species of the world. Allen Press and The Assoc. Syst. Collections, Lawrence, Kans. 694pp.

MacInnes, C. D. 1978. Editorial--expression of statistical results. J.

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Mack, R. N. 1986. Writing with precision, clarity, and economy. Bull. Ecol. Soc. Am. 67:31-35.

Strunk, W. Jr., and E. B. White. 1979. The elements of style. Third ed. MacMillan Publ. Co., New York, N.Y. 85pp.

Swanson, E. 1974. Mathematics into type: copy editing and proofreading mathematics for editorial assistants and authors. Am. Math. Soc., Providence, R.I. 98pp.

Tacha, T. C., W. D. Warde, and K. P. Burnham. 1982. Use and interpretation of statistics in wildlife journals. Wildl. Soc. Bull. 10:355-362.

Wang, D. 1986. Use of statistics in ecology. Bull. Ecol. Soc. Am. 67:10-12.

(Immediately below the Literature Cited section type the following:)

Received _____.

Accepted _____.

Table 1. Common expressions with superfluous words.

Superfluous wording	Suggested substitute
The purpose of this study was to test the hypothesis	I (or We) hypothesized
In this study we assessed	We assessed
We demonstrated that there was a direct	We demonstrated a direct
were responsible for	caused
played the role of	were
On the basis of evidence available to date	Consequently
in order to provide a basis for comparing	to compare
as a result of	through, by
for the following reasons	because
during the course of this experiment	during the experiment
during the process of	during
during periods when	when
for the duration of the study	during the study
the nature of	(omit by rearrangement)
a large (or small or limited) number of	many (or few)
conspicuous numbers of	many
substantial quantities	much
a majority	most
a single	one
an individual taxon	a taxon
seedlings, irrespective of species	all seedlings
all of the species	all species

Table 1. Continued.

Superfluous wording	Suggested substitute
various lines of evidence	evidence
they do not themselves possess	they lack
were still present	persisted, survived
the analysis presented in this paper	our analysis
indicating the presence of	indicating
despite the presence of	despite
checked for the presence of	checked for
in the absence of	without
a series of observations	observations
may be the mechanism responsible for	may have caused
It is reasonable to assume that where light is not limiting	with light not limiting
in a single period of a few hours	in a few hours
occur in areas of North America	are in North America
adjacent transects were separated by at least 20 m	adjacent transects were $\geq$ 20 m apart
in the vicinity	nearby
separated by a maximum distance of 10 m and a minimum distance of 3 m	3-10 m apart
the present day population	the current population, the population
their subsequent fate	their fate
whether or not	whether

Table 1. Common expressions with superfluous words.

Superfluous wording	Suggested substitute
summer months	summer
are not uncommon	may be
due to the fact that	(omit by rearrangement)
showed a tendency toward higher survival	had higher survival
devastated with drought-induced desiccation	killed by drought

[a]Mack (1986:33). Reprinted with permission from the Ecol. Soc. Am.

Table 2. Words that commonly need correction in The Journal of Wildlife Management manuscripts.[a]

Word and proper usage
accuracy (see precision): extent of correctness of a measurement or statement.
affect (see effect): verb, to cause a change or an effect; to influence.
among (see between): use in comparing >2 things.
between (see among): use in comparing only 2 things.
cf.: compare
circadian: approximately 24 hours.
continual: going on in time with no, or with brief, interruption.
continuous: going on in time or space without interruption.
diurnal: recurring every 24 hours; occurring in daylight hours.
effect (see affect): usually a noun, the result of an action; as an adverb (rare), to bring about or cause to exist, or to perform.
e.g. (see i.e.): for example.
enable (see permit): to render able, make possible.
ensure (see insure): to make certain or guarantee.
farther: more distant in space, time, or relationship.
further: going beyond what exits, to move forward.
i.e. (see e.g.): that is.
incidence (see prevalence): number of cases developing per unit of population per unit of time.
insure (see ensure): to assure against loss.
livetrap: verb.

Table 2. Continued.

Word and proper usage
live trap: noun.
logistic: symbolic logic.
logistics: details of an operation.
ovendry: adjective.
oven-dry: verb.
percent: adjective, adverb, or noun. Spell out only when the value is spelled out or when used as an adjective. Use "%" with numerals.
percentage: noun, part of a whole expressed in hundredths; often misused as an adjective, e.g., percent error, not percentage error.
permit (see enable): to allow, to give formal consent.
precision (see accuracy): degree of refinement with which a measurement is made or stated; e.g., the number 3.43 shows more precision than 3.4, but is not necessarily more accurate.
prevalence (see incidence): number of cases existing per unit of population at a given time.
since: from some past time until present; not a synonym for "because" or "as."
presently: in the future, not synonymous with "at present" or "currently."
that (see which): pronoun introducing a restrictive clause (seldom immediately preceded by a comma).
usage: firmly established and generally accepted practice or procedure.
utilization, utilize: avoid by using "use" instead.
various: of different kinds.
varying: changing or causing to change. Do not use for different.

Table 2. Continued.

Word and proper usage
very: a vague qualitative term; avoid in scientific writing.
viz: namely.
which (see that): pronoun introducing a nonrestrictive clause (often preceded by a comma or preposition [for, in, or of which]); the word most often misused in JWM manuscripts.
while: during the time that. Use for time relationships but not as synonym for "whereas," "although," and "similarly," which do not imply time.

[a]Adapted in part from CBE Style Man. Comm. (1983:269-278). Also see Day (1983:140-142).

Appendix A. Abbreviations for United States and Canadian political units. Use American National Standards Institute (ANSI) abbreviations in parentheses, table and figure bodies, footnotes, and the Literature Cited. Use U.S. Postal Service (USPS) abbreviations only in addresses with postal code numbers. A blank means do not abbreviate.

Unit	ANSI	USPS
U.S. and territories		
Alabama	Ala.	AL
Alaska	Alas.	AK
American Samoa	Am. Samoa	AS
Arizona	Ariz.	AZ
Arkansas	Ark.	AR
California	Calif.	CA
Canal Zone		CZ
Colorado	Colo.	CO
Connecticut	Conn.	CT
Delaware	Del.	DE
District of Columbia	D.C.	DC
Florida	Fla.	FL
Georgia	Ga.	GA
Guam		GU
Hawaii	Haw.	HI
Idaho	Id.	ID
Illinois	Ill.	IL
Indiana	Ind.	IN
Iowa	Ia.	IA
Kansas	Kans.	KS
Kentucky	Ky.	KY
Louisiana	La.	LA
Maine	Me.	ME
Maryland	Md.	MD
Massachusetts	Mass.	MA
Michigan	Mich.	MI
Minnesota	Minn.	MN
Mississippi	Miss.	MS
Missouri	Mo.	MO
Montana	Mont.	MT
Nebraska	Nebr.	NE
Nevada	Nev.	NV
New Hampshire	N.H.	NH
New Jersey	N.J.	NJ
New Mexico	N.M.	NM
New York	N.Y.	NY
North Carolina	N.C.	NC
North Dakota	N.D.	ND
Ohio	Oh.	OH
U.S. and territories (continued)		
Oklahoma	Okla.	OK
Oregon	Oreg.	OR
Pennsylvania	Pa.	PA
Puerto Rico	P.R.	PR
Rhode Island	R.I.	RI
South Carolina	S.C.	SC
South Dakota	S.D.	SD
Tennessee	Tenn.	TN
Texas	Tex.	TX
Trust Territory	Trust Territ.	TT
Utah	Ut.	UT
Vermont	Vt.	VT
Virginia	Va.	VA
Virgin Islands	V.I.	VI
Washington	Wash.	WA
West Virginia	W.Va.	WV
Wisconsin	Wis.	WI
Wyoming	Wyo.	WY
Canadian provinces and territories		
Alberta	Alta.	AB
British Columbia	B.C.	BC
Manitoba	Manit.	MB
New Brunswick	N.B.	NB
Newfoundland	Newf.	NF
Northwest Territories	Northwest Territ.	NT
Nova Scotia	N.S.	NS
Ontario	Ont.	ON
Prince Edward Island	Prince Edward Isl.	PE
Quebec	Que.	PQ
Saskatchewan	Sask.	SK
Yukon Territory	Yukon Territ.	YT
Other		
United States	U.S.	
New Zealand	N.Z.	
United Kingdom	U.K.	

Appendix B. Abbreviations commonly used in *The Journal of Wildlife Management* tables, figures, and parenthetic expressions. Only those metric units and their appropriate prefixes (CBE Style Man. Comm. 1983:150) identified with an asterisk may be abbreviated in the text. A blank means do not abbreviate.

Term	Abbreviation or symbol	Term	Abbreviation or symbol
Adult	ad	Liter	*L
Amount	amt	Logarithm, base e	*ln or $\log_e$
Approximately	approx	Logarithm, base 10	*$\log_{10}$
Average	$\bar{x}$	Male	M
Calorie	*cal	Maximum, minimum	max., min.
Celsius	*C	Meter	*m
Chi-squared	χ^2	Metric Ton	t
Coefficient	coeff	Minute	min
Coefficient of		Month	
correlation, simple	r	Month names	Jan, Feb, etc.
multiple	R	More than	*>
determination, simple	r^2	Number (of items)	No.
multiple	R^2	Observed	obs
variation	CV	Outside diameter	o.d.
Confidence interval	CI, $a < \bar{x} \leq a$	Parts per billion	*ppb
Confidence limits	CL, $\bar{x} \pm a$	Parts per million	*ppm
Day		Percent	*%
Degrees of freedom	df	Population size	N
Diameter	diam	Probability	P
Diameter, breast height	dbh	Range	
Equation(s)	eq(s)	Sample size	n
Expected	exp	Second	sec
Experiment	exp.	Spearman rank correlation	r_s
Female	F	Square	sq
F ratio	F	Standard deviation (s)	SD
Gram	*g	Standard error ($s_{\bar{x}}$)	SE
Gravity	g	Student's t	t
Hectare	*ha	Temperature	temp
Height	ht	Trace[a]	tr
Hotelling's T^2	T^2	Versus	vs.
Hour(s)	hr	Volt	*V
Inside diameter	i.d.	Volume	vol
Joule	*J	Watt	*W
Juvenile	juv	Week	
Kilocalorie	*kcal	Weight	wt
Lethal concentration, 50%	LC_{50}	Wilcoxon test	T
Lethal dose, median	LD_{50}	Year	yr
Less than	*<	Z-statistic	Z
Limit	lim		

[a] Define in a footnote (e.g., tr = <1%).

Appendix C. Word or phrase abbreviation[a] for titles of publications and parenthetic expressions. An * indicates a frequently misabbreviated word; a blank means do not abbreviate.

Word/root or phrase	Abbreviation	Word/root or phrase	Abbreviation
Abstract-	Abstr.	Communications	Commun.
Academ-	Acad.	Company[ies]	Co.
Acta		Compar-	Comp.
Administr-	Adm.	Completion	
Advanc-	Adv.	Comptes Rendus	C.R.
Aeronautic-	Aeronaut.	Comput-	Comput.
Affair-	Aff.	Confer-	Conf.
Afri-	Afr.	Congres-	Congr.
Agency		Conserva-*	Conserv.
Agricult-*	Agric.	Contamina-	Contam.
Agronom-	Agron.	Catalogue	Cat.
Ameri-*	Am.	Contrib-	Contrib.
Anali[y]-	Anal.	Coopera-	Coop.
Anals	An.	Coordinator	Coord.
Anatomical	Anat.	Council-	Counc.
Animal-	Anim.	Corporation	Corp.
Annal-	Ann.	Cultur-	Cult.
Annu-*	Annu.	Current	Curr.
Antarcti-	Antarct.	Depart-*	Dep.
Appli-	Appl.	Develop-	Dev.
Archaeology	Archaeol.	Disease-	Dis.
Archiv-	Arch.	Disserta-	Diss.
Arctic	Arct.	District	Dist.
Assistance	Assist.	Divis-	Div.
Associ-	Assoc.	Doctor of Philosophy	Ph.D.
Atlanti-	Atl.	East*	
Atmos-	Atmos.	Eastern*	East.
Atomi-	At.	Ecolog-	Ecol.
Australi-	Aust.	Econom-	Econ.
Avian		Edic[t][z]-	Ed.
Bac[k]teriolog-	Bac[k]teriol.	Education(al)	Educ.
Behavio(u)r-	Behav.	Electric[q]-	Electr.
Beobacht-	Beob.	Endocrinolog-	Endocrinol.
Bibliogra-	Bibliogr.	Energy	
Biennial	Bienn.	Engineer-	Eng.
Biochem-	Biochem.	Engl-	Engl.
Biolo-	Biol.	Entomolog-	Entomol.
Biometri-	Biom.	Environment-*	Environ.
Board		Europ-	Eur.
Botan-	Bot.	Evol-	Evol.
Branch		Experiment-	Exp.
Breeder		Fauna	
British*	Br.	Federa-	Fed.
Bulet-	Bul.	Fenni-	Fenn.
Bullet-	Bull.	Fertility	Fertil.
Bureau-	Bur.	Fertiliz-	Fert.
Canad-	Can.	Field-Naturalist	Field-Nat.
Center-	Cent.	Finni-	Finn.
Central	Cent.	Fishery[ies]	Fish.
Chapter*	Chap.	Forest-	For.
Chemic-	Chem.	Foundation-	Found.
Chimie	Chim.	Franc-	Fr.
Chronicle	Chron.	French	Fr.
Circula-	Circ.	Gazette	Gaz.
Clini-	Clin.	Genera-	Gen.
College[i]-	Coll.	Genet-	Genet.
Commerc-	Commer.	Geogra-	Geogr.
Commission-	Comm.	Geolog-	Geol.
Committee	Comm.	German-	Ger.
Commonwealth	Commonw.		
Commonw. Sci. and Ind. Res. Organ.	C.S.I.R.O.		

Appendix C. Continued.

Word/root or phrase	Abbreviation
Gesellschaft	Ges.
Go(u)vernment-	Gov.
Handb-	Handb.
Helminthology-	Helminthol.
Heredi-	Hered.
Herpetolog-	Herpetol.
Histo(i)r-	Hist.
Human	Hum.
Hygien-	Hyg.
Ichthyolog-	Ichthyol.
Immunolog-	Immunol.
Infecti-	Infect.
Information	Inf.
Inland	
Instit-	Inst.
Interi-	Inter.
Internal	Intern.
Internat[z]-*	Int.
Investiga-	Invest.
Japa[o]n-	Jap.
Journal	J.
Laborato-	Lab.
Leaflet-	Leafl.
Libra-	Libr.
Linn-	Linn.
Livestock	Livest.
Magas[z]i-	Mag.
Mammalia-	Mamm.
Mammalog-*	Mammal.
Management*	Manage.
Manua[e]l	Man.
Manufacturing	Mfg.
Marin-	Mar.
Master of Science	M.S.
Mathemat-	Math.
Medi[e]ca[h][i]-	Med.
Meeting	Meet.
Memoir-	Mem.
Memorand-	Memo.
Memorial	Mem.
Metaboli-	Metab.
Meteorolog-	Meteorol.
Method(s)	
Mex-	Mex.
Microbiolog-	Microbiol.
Midland	Midl.
Midwestern	Midwest.
Migratory	Migr.
Mimeograph-*	Mimeogr.
Minist-	Minist.
Miscel-	Misc.
Monitoring	Monit.
Monogra-*	Monogr.
Month-	Mon.
Morf[ph]olog-	Morf[ph]ol.
Mountain	Mt.
Muse-	Mus.
National-*	Natl.
National Academy of Science	Natl. Acad. Sci.
National Research Council	Natl. Res. Counc.
National Aeronautics and Space Administration	Natl. Aeronaut. and Space Adm.
National Oceanic and Atmospheric Administration	Natl. Oceanic and Atmos. Adm.
Nature [al-]* [el-]	Nat.
Newsletter	Newsl.
Nomenclat-	Nomencl.
North*	
Northeast*	
Northeastern*	Northeast.
Northern*	North.
Northwest*	
Northwestern*	Northwest.
Norwegian	Norw.
Note(s)	
Nuclear-	Nucl.
Nutri-	Nutr.
Occasion-	Occas.
Offi-	Off.
Organic[q]	Org.
Organis[z]a-	Organ.
Ornit(h)olog-	Ornit(h)ol.
Outdoor-	
Pacific	Pac.
Pamf[ph]let-	Pam.
Paper-	Pap.
Parasitolog-	Parasitol.
Patholog-	Pathol.
Performance	Perf.
Pesticide-	Pestic.
Perspectives	Perspect.
Pharmacolog-	Pharmacol.
Philosoph-	Philos.
Physica-	Phys.
Physiolog-	Physiol.
Pittman-Robertson*	
Polish	Pol.
Pollution	Pollut.
Poultry	Poult.
Press	
Printer	
Proceedings	Proc.
Professional	Prof.
Program	
Progres-	Prog.
Project-	Proj.
Protection	Prot.
Provincial	Prov.
Psycholog-	Psychol.
Public	
Publica-	Publ.
Publishing Company	Publ. Co.
Quantit-	Quant.
Quarterly*	Q.
Radiati-	Radiat.
Radio	
Range	
Raptor	
Record-	Rec.
Region-	Reg.
Regulation	Regul.

Appendix C. Continued.

Word/root or phrase	Abbreviation
Report-	Rep.
Reproduction	Reprod.
Research-	Res.
Resource-*	Resour.
Restoration	Restor.
Revi[u]-	Rev.
Royal-	R.
Russi[k]-	Russ.
Sanitar[t]-	Sanit.
Scien-	Sci.
Secti-	Sect.
Seminar	Semin.
Serie-	Ser.
Ser(i)olog-	Ser(i)ol.
Servi-*	Serv.
Society	Soc.
Southeastern	Southeast.
Special	Spec.
Station*	Stn.
Statistical	Stat.
Study(ies)	Stud.
Supplement	Suppl.
Survey	Surv.
Symposium	Symp.
Systematic	Syst.
Technical	Tech.
Technology	Technol.
Telemetry	Telem.
Therap-	Ther.
Toxicology	Toxicol.
Transactions	Trans.
Transportation	Transp.
Vertebrat-	Vertebr.
Veterinari-[y]	Vet.
Volum-	Vol.
Volunteer	
West*	
Western*	West.
Wildfowl	
Wild Life	
Wildlife	Wildl.
Workshop	
Yearbook-	Yearb.
Yearly	Yrly.
Zeitschrift-	Z.
Zoolog-	Zool.

[a] No 3-letter and practically no 4-letter words are abbreviated. Words or roots followed by a hyphen encompass >1 word derived from the same root. Letters in brackets can substitute for the letter preceding the bracket(s).

[b] Abbreviate "Naturaliste Canadien" as "Nat. Can. (Que.)" and "Nature Canada" as "Nat. Can. (Ottawa)."

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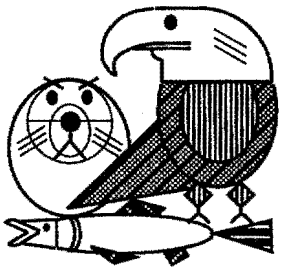
Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



October 20, 1994

Barry Roth
Department of the Interior
Division of Conservation and Wildlife
1849 C Street NW
Washington D.C. 20240

Dear Barry,

The purpose of this letter is to express my continuing appreciation for the help you have provided to identify issues and concerns on behalf of the federal Trustees regarding the Institute of Marine Science Infrastructure Improvements project.

As you know, at the October 5, 1994 meeting, the Trustee Council was presented with a detailed briefing on the project description, design and operational structure. At that time, as part of the briefing, a Draft Executive Director Findings document was distributed that addresses the various issues regarding this project that have been brought to my attention.

It is my understanding that all of the issues identified regarding the project have been addressed in the project description and the companion draft findings document. The Record of Decision for the project EIS will be ready for signature on October 28 and I will be preparing a formal recommendation and resolution for Trustee Council action on the project at the meeting scheduled for November 2 - 3.

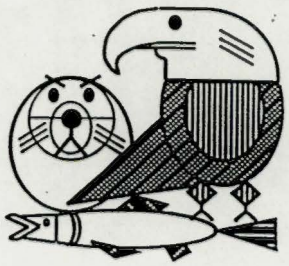
If you have any further questions, please let me know.

Sincerely,

James R. Ayers
Executive Director

cc: Bill Brighton
Trustee Council

Exxon Valdez Oil Spill Trustee Council
Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178



FAX COVER SHEET

To: Trustee Council Number:

From: Molly McCammon Date: Oct. 21, 94

Comments: Total Pages: 2

Please distribute to:

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X Craig Tillery < MARY REC'D 9:00 Am

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Meeting Summary

A. GROUP: Exxon Valdez Oil Spill Public Advisory Group (PAG)

B. DATE/TIME: October 12-13, 1994

C. LOCATION: Anchorage, Alaska

D. MEMBERS IN ATTENDANCE:

Name	Principal Interest
Rupert Andrews	Sport Hunting and Fishing
Pamela Brodie	Environmental
Kim Benton (for Sturgeon)	Forest Products
Jim Cloud (10-12)	Public-at-Large
Jim Diehl	Recreation Users
Donna Fischer, Vice-Chair	Local Government
John French	Science/Academic
James King	Conservation
Vern McCorkle (10-13)	Public-at-Large
Mary McBurney (for McCune)	Commercial Fishing
Chuck Totemoff (10-12)	Native Landowners
Lew Williams	Public-at-Large
(Cloud/McCorkle alt. for Eliason)	Public-at-Large
(McBurney alt. for McMullen)	Aquaculture
Cliff Davidson (*ex officio*)	Alaska State House

E. NOT REPRESENTED:

Name	Principal Interest
Brad Phillips, Chair	Commercial Tourism
Richard Knecht	Subsistence
Don McCumby (alternate)	Public-at-Large
Drue Pearce (*ex officio*)	Alaska State Senate

F. OTHER PARTICIPANTS:

Name	Organization
Jim Ayers (via telecon 10-13)	EVOS Executive Director
Mark Broderson	AK Dept. Envir. Cons.
Howard Ferren	PWS Aquaculture Corp.
Carrie Holba	Oil Spill Public Info. Center
Ken Holbrook	U.S. Forest Service
Dave Gibbons	U.S. Forest Service
Veronica Gilbert	AK Dept. Nat. Resources
Rod Kuhn	U.S. Forest Service
Tom Livingston	Livingston & Sloan Architects
Bob Loeffler	AK Dept. Envir. Conservation
Molly McCammon	EVOS Director of Operations
Jerome Montague	AK Dept. Fish and Game
Rita Miraglia	AK Dept. Fish and Game
Doug Mutter	Designated Federal Officer Dept. of the Interior
Eric Myers	EVOS Project Coordinator

Sandra Schubert	EVOS Staff
Bob Spies	Chief Scientist
Nancy Swanton	Minerals Mgmt. Service
Paul Rotman	PWS Economic Devel. Council
Thea Thomas	Cordova Dist. Fishermen United
Ray Thompson	U.S. Forest Service

G. SUMMARY:

The meeting was opened October 12 at 8:45 a.m. by Vice-Chairperson Donna Fischer. The 10/11/94 agenda was approved. The August 2-3, 1994 meeting summary was accepted.

Molly McCammon gave the Executive Director's report, summarizing Trustee Council actions at their August 23 and October 5, 1994 meetings. The next Trustee Council meeting is scheduled for November 2, 1994. Traci Cramer has been hired as the new EVOS Director of Administration. McCammon stated that the Final Environmental Impact Statement (EIS) for the Restoration Plan was completed and a notice published in the Federal Register. The 30-day wait period will end October 28, 1994 and a Record of Decision (ROD) signed at the Secretarial level is expected soon thereafter. Individual projects, however, are still subject to meeting environmental requirements. After the EIS ROD, action on the Restoration Plan is expected at the November 2, 1994 meeting.

Carrie Holba gave a report on the activities of the Oil Spill Public Information Center (OSPIC)(see attachment #7). Over 3,000 requests for information were handled in FY 1994; OSPIC has an annual budget of $300,000. OSPIC is a participant of the Western Library Network and has an Internet electronic mail address: "ospic@muskox.alaska.edu".

McCammon noted that a project (part of 95089 with about $290,000) has been proposed to develop an information management system for EVOS data. Only 12 reports from 1992 Trustee Council projects have been finalized. Quarterly progress reports have been instituted for use by the Trustee Council. There was discussion about the usefulness of these reports in determining restoration actions. McCammon also noted that an independent audit will be conducted this winter on agencies' performance and management of EVOS funds.

Eric Myers presented a status report on the proposed project for infrastructure improvements at the Institute of Marine Sciences (IMS) in Seward. The amount requested of the Trustee Council is $24.9 million. Nancy Swanton reported on the status of the project EIS--the Final EIS is complete and the ROD is expected to be signed on October 28, 1994. Tom Livingston, architect for the project, presented detailed plans, financial information, and organizational concepts for the project. If approved, the project is expected to begin operation the summer of 1997. McCammon explained that the Trustee Council, in deciding whether to fund the project, had four major issues to consider: (1) that the private funding portion will work, (2) that researchers will use the project--that it serves a need, (3) that tourists will

visit the project and support its operation, and (4) that the management structure will have the abilities to make the project successful. The PAG adopted a motion in support of the project (see attachment #2).

A PAG "Final Report" (see attachment #5) was discussed. Members were encouraged to submit their comments for inclusion in a report to the Trustee Council identifying individual members' issues. A motion was made by Jim Cloud and seconded by Pam Brodie that the staff present issues from individual members, not necessarily a consensus, for a "Final PAG Report"--the motion passed unanimously.

McCammon gave an introduction to the Fiscal Year (FY) 1995 Draft Work Plan, noting that a series of workshops were held to review the direction of several efforts that have involved many projects: Prince William Sound ecosystem investigations, sockeye salmon, pink salmon, herring and fish genetics. She asked that the PAG recommend what projects they thought made the best packages and what made good funding opportunities. The Trustee Council will take action on projects at their November 2, 1994 meeting. All projects are pending legal and environmental compliance. After a proposal summary is approved to proceed, the proposer will develop a detailed project description that will undergo Chief Scientist/peer review and refinement. Bob Loeffler provided a summary of public comments on the Draft Work Plan. The Chief Scientist, Bob Spies, went through most projects (see attachment #8), discussing his and peer reviewers recommendations. The PAG took action, approving for moving forward in the process the projects noted in attachment #1--these total approximately $17.2 million in new project work (excluding stable isotope work), $12 million for the restoration reserve, and $24.9 million for the Seward IMS project--no action was taken on the $9.9 million interim project funding already approved by the Trustee Council.

Public comment was accepted at 4:00 p.m. Paul Rotman presented comments in support of project 95115, Sound Waste Management Plan.

The PAG recessed at 4:45 p.m. and reconvened Thursday at 8:35 a.m. and continued discussion of the Work Plan.

Jim Ayers joined the meeting via telephone for a brief report about the proposed information management system, an integrated, adaptive management/ecosystem approach to restoration, biological intervention and environmental compliance, and habitat protection efforts at Chenega, Shuyak, and Kodiak.

McCammon distributed certificates of appreciation signed by the six Trustee Council members to PAG members and alternates for their contributions to restoration efforts over the past two years.

The meeting adjourned at Noon on October 13, 1994.

H. FOLLOW-UP:

1. Donna Fischer will present a summary of PAG actions at the November 2, 1994 Trustee Council meeting.

2. McCammon will compile PAG member issues and comments as a "Final Report" to the Trustee Council.

3. McCammon will provide information comparing projects let through competitive bid versus government agencies following final action on the FY 1995 Work Plan.

I. NEXT MEETING: To be determined

J. ATTACHMENTS:

1. PAG vote record for FY 1995 projects
2. Motion to support IMS Infrastructure Improvement Project

For those not in attendance:

3. Revised Brief Project Descriptions (10-11-94)
4. Public Comments on the FY 1995 Work Plan
5. PAG Final Report
6. Project 95199 Improvements Affiliated with IMS-Update
7. Oil Spill Public Information Center Statistics FY 1994
8. Draft 1995 Work Plan Summary

K. CERTIFICATION:

_____ _____

PAG Chairperson **Date**

(as adopted)

RESOLUTION

of the

Exxon Valdez Oil Spill Trustee Council
PUBLIC ADVISORY GROUP

The *Exxon Valdez* Oil Spill Trustee Council Public Advisory Group (PAG) has been presented with information concerning the proposed research infrastructure improvements proposed for development in Seward and affiliated with the Institute of Marine Science as reflected in the Project Description and Supplemental Materials (September 26, 1994).

Based on the information presented at its October 13, 1994 meeting and the prior briefings regarding the project, the PAG expresses its general support for the proposed facility with the recognition that the proposed research infrastructure would make an important contribution to the restoration mission of the Trustee Council. While recognizing that there remain a number of issues that must be addressed to ensure that the proposed project can be successfully implemented, the PAG is supportive of development of the proposed facility in Seward.

Issues of particular concern include the following:

— the management structure of the proposed facility and the need to clearly identify the role of the University of Alaska as it relates to the future use and management of the facility;

— that the membership of the governing board of the facility be constituted in a manner that includes the financial and technical expertise needed to successfully implement the project as well as to appropriately represent interests from throughout the spill area;

— the role of the University of Alaska in the project with particular concern regarding the need to ensure that the University does not incur significant new operational cost liabilities at a time of declining funding resources;

— a need to ensure that future Trustee Council project funding is appropriately balanced between on-going, field-based ecosystem research efforts and the new laboratory-based research efforts that the proposed facility would support;

— future Trustee Council projects using the proposed facility should not be given funding priority over other proposed projects based on the location of project activities;

— the need to reduce or eliminate to the extent possible the capital and operational cost risks associated with the project to ensure successful implementation and operation of the facility;

— the City of Seward ensure that adequate, affordable housing resources are available to the researchers and other individuals who would use the facility; and

— the need to name the project in a manner that accurately reflects the facility's relationship with the University of Alaska, School of Fisheries and Ocean Sciences.

In adopting this resolution, the PAG expresses its support for this project and asks that these issues and concerns be considered and addressed as the Trustee Council moves forward with the project.

October 13, 1994