DRAFT Timeline: *Exxon Valdez* Restoration Plan EIS

Chapter	March	April	May	June
Chapter 1: Purpose and Need	Draft to K. Rice 3/31.		Comments back from RPWG 5/5. Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.
Chapter 2: Alternatives	Draft to K. Rice 3/31.		Comments back from RPWG 5/5. Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.
Chapter 3: Affected Environment	In-process draft to K. Rice by 4/9.	Comments from K. Rice and RPWG by 4/23?	Comments back from RPWG 5/5. Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.
Chapter 4: Impacts	Analysis begins.	Analysis continues.	To RPWG for comments 5/5. Group discussion with RPWG on 5/17. Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.
List of Preparers		To RPWG 4/9.	Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.

Revised: April 5, 1993

Chapter	March	April	May	June
Public Comment and Coordination	n/a (applies only to FEIS)	Available information to RPWG 4/9.	see note Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.
References		To editor, with additions continuing.	Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.
Index		Investigate available indexing resources. To editor, with additions continuing.	Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.
Appendices		Appendices AA (list of agencies/persons sent DEIS), BB (lists of TC, RT, PAG members), CC (glossary of terms & acronyms), and DD (species list) to RPWG 4/12.	Final draft to RPWG and TC for review 5/21.	DEIS and Restoration Plan released for public comment.

EIS
D
W136
(2)

1st draft EIS to RPWG 5/5/93

comments back by 5/14/93

2nd draft EIS to RPWG 5/31

final after hearings

2-3 meetings in cost estimate

our inhouse
↑ Restoration fill has more detail on options

maps
land use
timber ownership
habitat
fish runs/ranges
baseline geo area

need to get on DoI
↑ E-mail

→ call Doug to set up working group mtg
& examples of tables & analysis methodology

Michael Kavanaugh (513) 732-3939

TO: CAROL PACQUETTE

FROM: M KAVANAUGH

3 Pages
plus cover

Michael Kavanaugh (513) 732-3939

TO: CAROL PACQUETTE

FROM: M KAVANAUGH

13 Pages
plus cover

March 23, 1993

TO: Carol Pacquette & Matt McMillan
FROM: M. Kavanaugh

SUBJECT: revised 1990 IMPLAN results

Please discard the tables that were sent on Mar. 9 for Alt. 1 and Mar. 18 for Alt. 2. I will send revised 1990 IMPLAN results very soon. The revisions will reflect the latest corrections to the model.

Although the revisions are complete, I am holding them to allow time for reflection and to spare you from having to look at results that may be revised again. The latest changes correct a dimensional problem. While the quantitative results are bigger, the qualitative conclusions remain the same. That is, the changes in output and employment lie within the error margins of the data. I have used the underlying census data to calculate the error margins for employment at 700 jobs.

I think the available timber rights are less than the $312 million budgeted for habitat purchase. All the region's 1990 output of timber could be bought for $57 million. Could it be that (some of) the habitat purchase is for land that does not contain timber? If so what is the current use? Is it possible that the purchase is not for productive land? If so, how much of the purchase is for land that is not part of the economy.

I have been assuming that administering, restoring and monitoring is spread out over 10 years. Is this about right?

Please advise of the latest schedule and when I can expect the final allocations of dollars by spending category.

Michael Kavanaugh (513) 732-3939

TO: CAROL PACQUETTE

FROM: M KAVANAUGH

23 Pages
plus COVER

March 18, 1993

TO: Carol Pacquette & Matt McMillan
FROM: M. Kavanaugh

SUBJECT: more 1990 IMPLAN results

Attached are results for Alternative 2. The panels show the total (direct, indirect and induced) changes to the economy. The changes attributed to this alternative appear insignificant and within the margins of error of the underlying data. The top panel shows the changes if the funds received from habitat purchase are spent on social services, schools and hospitals. The bottom panel shows the changes if the funds from habitat purchase are spent on sewers, air transportation infrastructure and social services There is not much difference between these possible courses of action.

I continue to examine the model. It is not user-friendly. Modelling an alternative requires considerable patience.

Please advise of the latest schedule and when I can expect, with confidence, the final allocations of dollars by broad spending category.

Analysis of Alternative 2
1990$ Millions

Change from Base for direct, indirect and induced effects from

86.3	Endowment with	banks
31.4	Administration by	Federal government
22.5	Monitoring by	State & local government
11.3	Restoration by	State & local government
312.4	Habitat purchase	
167.5	Spending of habitat purchase funds for *	
	33% Hospitals	
	33% Schools	
	34% Services	

	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Added $	Employment #
Agriculture, Forest and fisheries	-0.29	-0.35	-0.07	-0.05	-0.13	-3.95
Mining	0.00	-0.00	0.00	-0.00	-0.00	0.00
Construction	0.00	0.00	0.00	0.00	0.00	0.02
Manufacturing	0.00	-0.00	-0.00	-0.00	-0.00	0.01
Transportation, communication and Utilities	0.00	0.01	0.00	0.00	0.00	0.04
Trade	0.00	-0.00	-0.00	-0.00	-0.00	0.02
Fire	0.07	0.09	0.04	-0.02	0.02	1.97
Services	0.17	0.15	0.10	-0.00	0.10	4.44
Government	0.01	0.01	0.01	0.00	0.01	0.25
Misc. Special sectors	0.00	0.00	0.00	0.00	0.00	0.00
	-0.03	-0.09	0.08	-0.07	0.00	2.79

Change from Base for direct, indirect and induced effects from

86.3	Endowment with	banks
31.4	Administration by	Federal government
22.5	Monitoring by	State & local government
11.3	Restoration by	State & local government
312.4	Habitat purchase	
167.5	Spending of habitat purchase funds for *	
	33% Sewers	
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	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Added $	Employment
Agriculture, Forest and fisheries	-0.29	-0.35	-0.07	-0.05	-0.13	-3.95
Mining	-0.00	0.00	0.00	0.00	0.00	0.00
Construction	0.00	-0.00	-0.00	-0.00	-0.00	-0.02
Manufacturing	-0.00	-0.01	-0.00	-0.00	-0.00	0.00
Transportation, communication and Utilities	0.05	0.06	0.02	0.00	0.03	0.48
Trade	-0.00	-0.01	-0.00	-0.00	-0.00	-0.05
Fire	0.07	0.09	0.03	-0.02	0.02	1.96
Services	-0.00	-0.03	-0.01	-0.01	-0.02	-0.57
Government	0.01	0.01	0.01	-0.00	0.01	0.25
Misc. Special sectors	0.00	0.00	0.00	0.00	0.00	0.00
	-0.15	-0.23	-0.02	-0.07	-0.10	-1.75

* The sharing obligations Section 7(i) of ANCSA make habitat spending less than habitat purchase

DYNAMAC CORPORATION
Environmental Services

2275 Research Blvd, Suite 500
Rockville, MD 20850

FAX TRANSMITTAL FORM

Please deliver this sheet with message.

COVER SHEET PLUS 4 PAGES

To: Carol Paquette	**From:** Matt McMillen
Company: Walcoff & Associates	**Company:** Dynamac - Rockville Office
FAX:703-548-0426	**FAX:** (301) 417-9801
Telephone:	**Telephone:** (301) 417-9800

MESSAGE: Carol,

Attached, as promised, is a draft of the Impact Assessment Methodology for the Exxon Valdez Restoration Plan EIS. I agonized over the specificity, but think the EIS team can use this basic approach. It requires that the analysts fill in some blanks, i.e., criteria for determining the degree of magnitude for the impact, but this lends some flexibility to the evaluation process that I believe is necessary given RPWG's vague description of the restoration options.

We can discuss this and Ken Rice's comments on the annotated outline at the meeting tomorrow. See you then!

Date Sent: 3/24/93

DRAFT

IMPACT ASSESSMENT METHODOLOGY

Introduction

The following information describes general principals and specific aspects of the impact assessment methodology that will be used for the analysis of the implementation of Exxon Valdez Oil Spill Restoration Plan. The Restoration Plan includes five alternative implementation procedures. Each of the alternatives will be encompassed by the impact assessment methodology described below.

The methodology presented here recognizes the dynamic nature of the Restoration Plan, and the generic definition of the options to be included in the Restoration Plan alternatives. Consequently, for each of the resources and services being evaluated, certain assumptions regarding the actual implementation of options will be necessary. These assumptions will provide a basis for the impact assessment methodology, and will be stated for each resource and service included in the analyses.

The economic impact analysis will be conducted differently than the impacts to physical, biological, and cultural resources. The following discussion does not apply to the economic impact assessment. For the economic impact assessment of Restoration Plan implementation, the IMPLAN economic impact assessment model will be used. A description of IMPLAN is presented in Section ▒▒▒ of the EIS. Results of IMPLAN analyses will be presented for each alternative in the Restoration Plan. As with the impact assessment methodology for other resources, any relevant assumptions that are required to frame the economic impact analysis using IMPLAN will be stated.

Types of Impacts

When performing the impact analysis of the proposed action (implementing the Restoration Plan), the analysts will employ a methodology that will account for the various impacts that affect the biological, physical, and sociocultural environment. Impacts will be classified in five ways; direct, indirect, short-term, long-term, and cumulative. These types of impacts are interdependent, in other words, there can be long-term direct impacts, short-term cumulative impacts, etc. For each resource or service being evaluated, analysts will identify what type of impact is being referred to in the analysis so that the reviewer/decision maker is able to make sound, reasoned decisions for the short-term as well as for the long-term.

Direct impacts are those that are the immediate result, or the initial reaction to the action being evaluated. An example would be the loss of habitat caused by a construction project. Indirect impacts are those that are the reaction to the direct impacts, or the second-tier impacts. In other words, indirect impacts are the consequence of direct impacts, and are not in themselves a direct response to the action. In the example of loss of habitat from a construction project, the indirect impacts may be a reduction in wildlife populations that relied on the habitat for food or shelter. In this case, the construction did not kill or harm the animals themselves during the construction operation, but following construction they were not able to find food and shelter and were consequently displaced to other areas or perhaps killed by predators that normally they could have hidden from in the habitat that was lost. Indirect impacts are often difficult to identify because they may or may not occur, making their definition very speculative. Quantifying indirect impacts is usually not possible or warranted. Additionally, there is often little distinction between

indirect impacts, particularly in the long-term, and cumulative impacts. Cumulative impacts are a summation of the impacts related to the action being evaluated and concurrent actions being taken that are similar or are in close proximity to the action. Cumulative impacts often do not manifest themselves until well after the action has been taken. As a result, cumulative impacts, similarly to indirect impacts, can be very speculative and hard to define. However, cumulative impacts are the source of much controversy and litigation, and the analysts will make every effort to account for cumulative impacts in the environmental impact analyses.

Short-term impacts are those that occur for a relatively short time and then abate or attenuate to levels that are not of concern. If the time frame is an important variable that should be considered by the decision maker, it will be stated. An example of a short-term impact would be erosion from a construction site. Erosion may cease entirely after construction is completed, or be reduced to minimal levels by appropriate mitigation so only temporary (short-term) impacts during construction occur. On the other hand, the effects of sedimentation related to the short duration of erosion may have long-term impacts on various resource areas, especially if the intensity or magnitude of the short-term erosion was high. Long-term impacts are those whose duration or manifestation occurs for a relatively long time or manifests itself at some future time. As with short-term impacts, the long-term time frame will be specified if it may influence the decisions being made. To ensure that the full impact of the action being considered is identified, the full complement of impact types will be considered in the environmental impact analysis.

Evaluation Factors

As a basis for the analysts determination of impacts, and as a prelude to presenting conclusions regarding the significance of those impacts, the analysts will use certain predetermined factors to arrive at impact determinations. When performing the analysis of impacts on various resources, the action being analyzed will be viewed in terms of these factors. For all resource areas being evaluated for impacts, the same factors are applied. In this way the analyst can systematically approach the analysis, and document the process used to reach their determinations and conclusions.

For determining the affects of proposed actions on the natural environment, there are four factors that will be used. They are as follows:

1. **Magnitude**
2. **Geographic Extent**
3. **Duration and Frequency**
4. **Likelihood**

The **magnitude** of an impact reflects relative size or amount of an impact. The **geographic extent** of an impact considers how widespread the impact might be. The **duration and frequency** of an impact refers to whether the impact is a one-time event, intermittent, or chronic. The **likelihood** of an impact is simply whether it is reasonable to expect that it is likely to occur. Where a quantitative evaluation is possible, specific quantitative criteria for the magnitude, geographic extent, duration and frequency, and likelihood of the impacts will be explicitly defined.

The magnitude of an impact is an intensity factor that is also a reflection/summation of the other three factors. It is for this reason that the magnitude of an impact will be analyzed and given particular attention in the assessment of impacts. If the magnitude of an impact is large, the other factors become less important in determining whether the impact is significant. Additionally, if the magnitude is not large

or high, there may not be any significance to the impacts occurrence regardless of how wide spread it is, or how often it occurs. Consequently, in the methodology for determining significance of impacts, the magnitude of the impact will be afforded more weight than the other factors. In most cases, only where it can be shown that there is a high or large magnitude would the analysis indicate that there is a significant impact.

As a result of its elevated importance in the determination of significance, the criteria used to determine magnitude of impact will be identified for those effects that have the greatest impact on the environment, or the greatest impact on the decisions to be made by the decision maker. The most important element of the entire impact assessment methodology is the criteria used to determine the magnitude of impacts. The criteria may be either qualitative or quantitative depending on the availability and relevance of existing data. For each resource area or service of concern (e.g., sockeye salmon, sea otters, marbled murrelets, commercial fishing, etc.) the definition of impact magnitude will differ, and will be described in terms of the unit of measure being applied. Based on the definition of impact magnitude, and using the other impact evaluation factors as support, a determination of the significance of the impacts will be presented.

Evaluation Process

The process to be followed by the EIS team analysts before employing the impact evaluation methodology described previously, will be unique to the resource or service being evaluated. In general, however, the development and presentation of minimum levels of evidence and analysis that satisfy the NEPA requirement for a "hard look" at the actions being proposed, will follow the same basic steps. The basic premise of the approach is to provide the decision maker with sufficient information to make informed decisions, while ascribing to the "rule of reason" implicit in the NEPA process.

The first step in the process involves the basic literature review that builds on the information reviewed to prepare the baseline conditions described in the Affected Environment section of the EIS. Because of the generic nature of the programmatic EIS, the use of existing data is essential, no new research efforts or analytical tools such as population dynamics modeling is necessary or warranted given the nature of the decisions to be made regarding the Restoration Plan.

After obtaining the necessary understanding of the resources (species) and services included in Restoration Plan alternatives, the most important aspect of the evaluation process is to define, to the degree possible, what is included in the options being proposed for implementation in the various alternatives. In order to do this, all information available describing the options must be reviewed. This would include all option write-ups that currently exist, such as option short forms, project proposals, "Opportunities for Habitat Protection/Acquisition", Restoration Framework documents, etc. Each analyst will keep a listing of all sources reviewed to identify information concerning options that affect the resource or service being evaluated. Clearly, the specificity of the option descriptions will be the limiting factor in the identification of impacts. All assumptions that must be made to account for the scope or nature of the option will be identified (stated) by the analyst, along with the rationale for the assumption (e.g., without the assumption some key element of option implementation could not be accounted for).

Based on the assumptions made concerning the specifics of the options proposed form implementation, the analyst will restate what is included in the option that specifically affects the resource being evaluated. This process of option evaluation will be performed for each option that has been identified (by RPWG) as affecting the resource or service being evaluated by the analyst. The analyst will evaluate the impact of each of the options individually using the impact evaluation methodology and terminology described above, and then consider the options collectively (all options identified for the particular alternative in

question that affect the resource or service being evaluated) to determine the magnitude and significance of the impact to the resource or service. The analysts will compare the conclusions of their analysis with the RPWG determination of option effectiveness to identify any inconsistencies in the conclusions of the two independent processes (i.e., RPWG's determination of option effectiveness versus the EIS analyst's determination of the magnitude and significance of impacts). Any inconsistencies will be addressed on a case-by-case basis by the EIS team experts for the particular resource area in question.

Consistent with the concept noted previously concerning minimum levels of evidence and analysis, each analyst will identify (reference) outside (not generated for the Restoration Plan development process) sources of information to corroborate conclusions of impact as appropriate ("as appropriate" because of the intuitive nature of certain generic conclusions of impact that are likely to be presented). The purpose of the use of outside sources for supporting conclusions is to remove, as much as possible, the use of professional judgement among the analytical staff in the determination of impact magnitude and significance. However, because much of the assessment process is speculative, owing to the generic nature of the options being presented for analysis, and the use of experts (i.e., experts assisting the Trustee Council [illegible]) to evaluate the effectiveness of proposed options, it is expected that the qualitative EIS assessment process will involve some professional judgement by EIS team analysts, supported by the conclusions of the Trustee Council's [illegible] scientific experts.

For resources and services such as subtidal resources, air, water, sediment or designated wilderness areas for which no restoration options were identified, the evaluation process will have to be left "open ended", and statements regarding the future submission of proposals affecting these resources will have to include reference to additional environmental analyses (e.g., Environmental Assessments or Environmental Impact Statements). In addition to those resources for which no restoration options were proposed, it may be necessary to suggest additional environmental evaluation for resource or services affected by proposed and possible future options that specifically target an area, species population, or user group, and may have significant impacts. Also, consistent with 40 CFR 1502.22 ("incomplete or unavailable information"), where data deficiencies exist that may be critical to the evaluation of adverse environmental impacts, this will be stated and the need for additional environmental analysis noted. The intent of this approach is to ensure that future options that the Trustee Council may want to consider for funding are not precluded from consideration under the Restoration Plan because they were not considered in the EIS.

ADF&G Subsid
Symposium
Jim Fall

QUESTIONS

1. Status of proposed joint study by Govt & natives on subsistence (Ref: Govt's memo-agreement)

2. Need §810 ANILCA reference Alaska National Interest Lands Conservation Act

3. HPWG habitat protection report — threat
Ron Buyea eminent

4. Injured resources & services tables from RPWG (to be published in EIS)

5. Change in study area boundary
which communities should be added in

6. IMPLAN
- new model defective, don't know how soon it will be fixed
- fallback is to use previous version (85-87?)
- any other model/approach preferred?
- Anchorage must be included in affected area in order for IMPLAN to work (import/export mode)

can we determine/estimate which sector will be receiving the funds?

7. What's source of numbered suboptions in Alternatives chapter? Loffler/Stroud Jolly

8. Separate binding of §810 piece? of executive summary?
Distribution list

Qs for Ken:

how are we going to do business
surfacing & resolution of issues
coord. & integration of RP & CIS
identification of other planned projects, e.g.,
highway work
call individual RT member

March mtg minutes

review VTs for illustrating spill & showing injury

TC review on 5/21

TC mtg on 6/1 to approve / printer

6/21 ~~to printer~~ to public distrib

we should ID "reasonable area of impact"

we guesstimate wheat sector $ will go to & give to Ken ~~by~~ by 3/20

adjust categories to be compatible w/ RPWG groupings

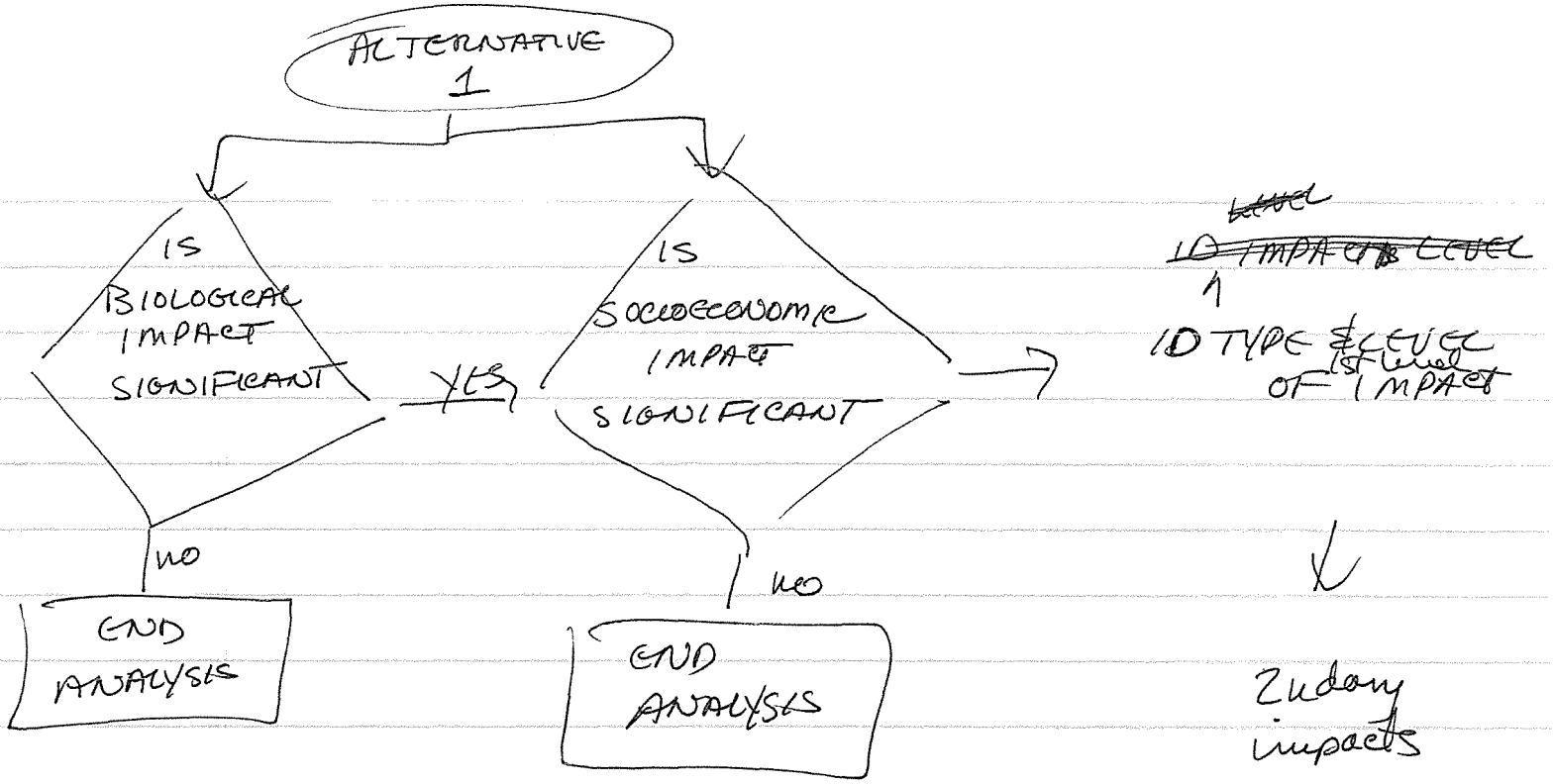
Exxon Valdez Restoration Plan EIS
Evaluation Methodology to Determine Significance

Four factors will be considered in the evaluation of the biological and socioeconomic impacts associated with each of the 5 ~~potential~~ restoration alternatives:

- Magnitude: the relative size or amount of an impact
- (geographic) Extent: how widespread the program impact might be
- duration and frequency: one time event, intermittent, continuing/chronic
- Likelihood: probability that the impact will occur

Methodology to ID Type & ~~Level~~ (1st level: yes/no, etc.) Degree (high, med, low) or quantitative of Impact

~~Logic flow~~
~~relatedness of~~
logic flow analysis (type)
IMPLAN (econ model) (acct for economic)
stat analysis for social/QOL
? for biologic


ALTERNATIVE 1
IS BIOLOGICAL IMPACT SIGNIFICANT
YES
IS SOCIOECONOMIC IMPACT SIGNIFICANT
NO
END ANALYSIS
NO
END ANALYSIS
ID TYPE & LEVEL OF IMPACT
Indirect impacts

3/11/93

Schedule

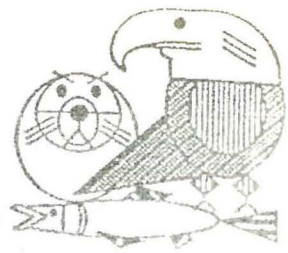
Chapters 1, 2 & 3 end of March
return 5/5/93
Chapter 4 dropt 5/5/93

Comments returned 5/14/93

final dropt GIS ~~5/31/93~~ 5/21

comments on outline 3/19/93

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



FAX COVER SHEET

To: Carol Paquette
Number: 703-548-0426

From: Ray Thompson
Date: February 24, 1993

Comments:
Total Pages: 5

Carol:

The map we discussed. Changes have occured where white lines run through shading. Any questions call!

Ray

February 19, 1993

Memorandum

To: Restoration Team

From: Restoration Planning Working Group

Subject: Transmittal of 2/19/93 Map Depicting EVOS Area

Attached is a map showing the approximate boundaries of the spill area as we discussed on 2/18/93. The boundaries have been expanded from the previous version you reviewed to include shorelines and watershed uplands as far south as Chignik and as far north as the forelands of Cook Inlet. The description of the mapped area is now as follows:

1. The area enclosed by the maximum extent of oiled shorelines (as defined by NOAA, Coast Guard and ADF&G maps) plus adjacent uplands to the watershed divide, including all of Prince William Sound, and

2. Areas of immediate human use for severely affected communities on the edge of the spill area: Cordova, Valdez, Whittier, Seward, Homer, and Chignik. Other communities, such as Kodiak, Chenega Bay or Tatitlek, are entirely within the spill area and their important human use areas are included under Criterion #1.

Should you have any questions concerning this information, please contact (Carol Gorbics or Bob Loeffler.) the undersigned

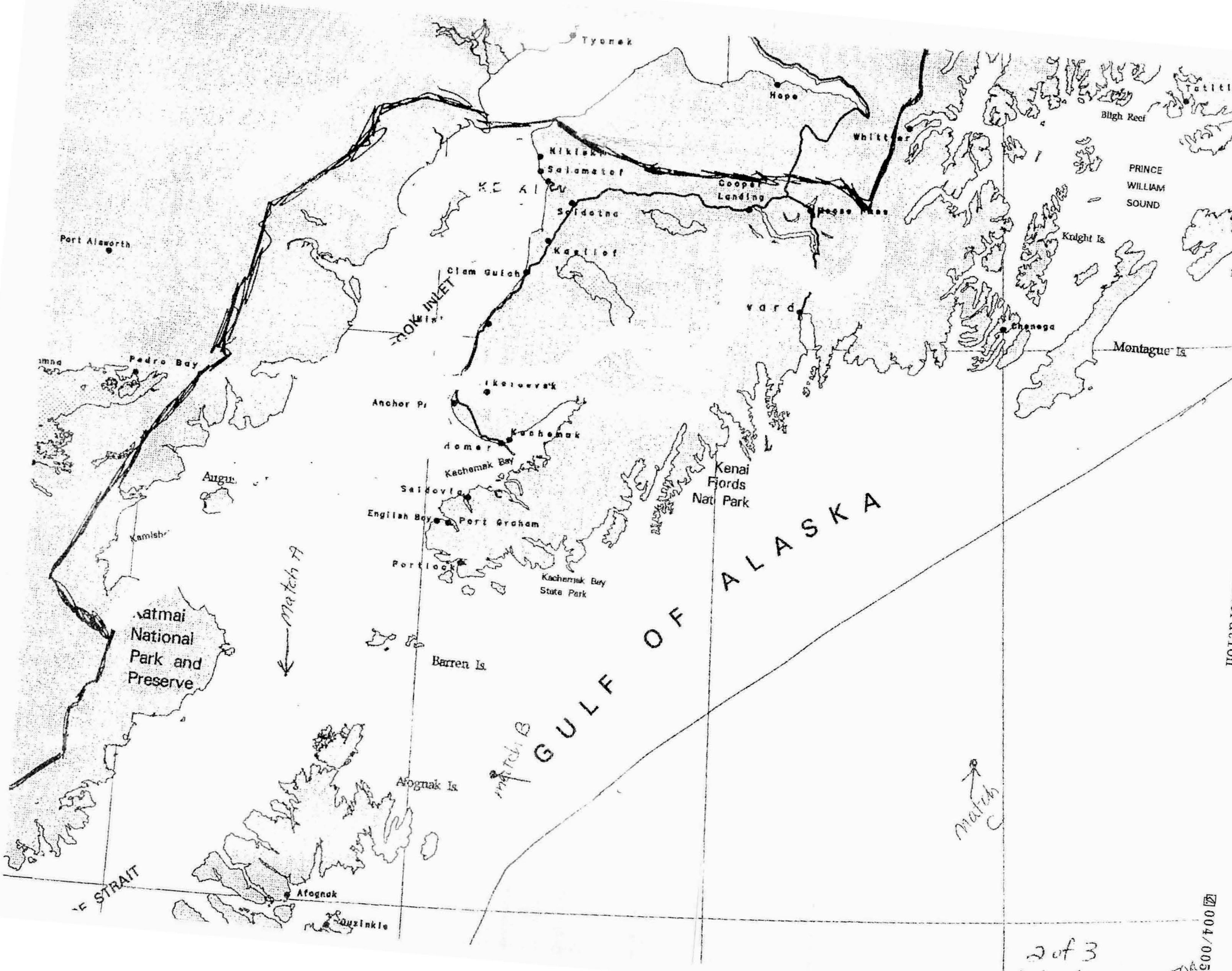
cc RPWG

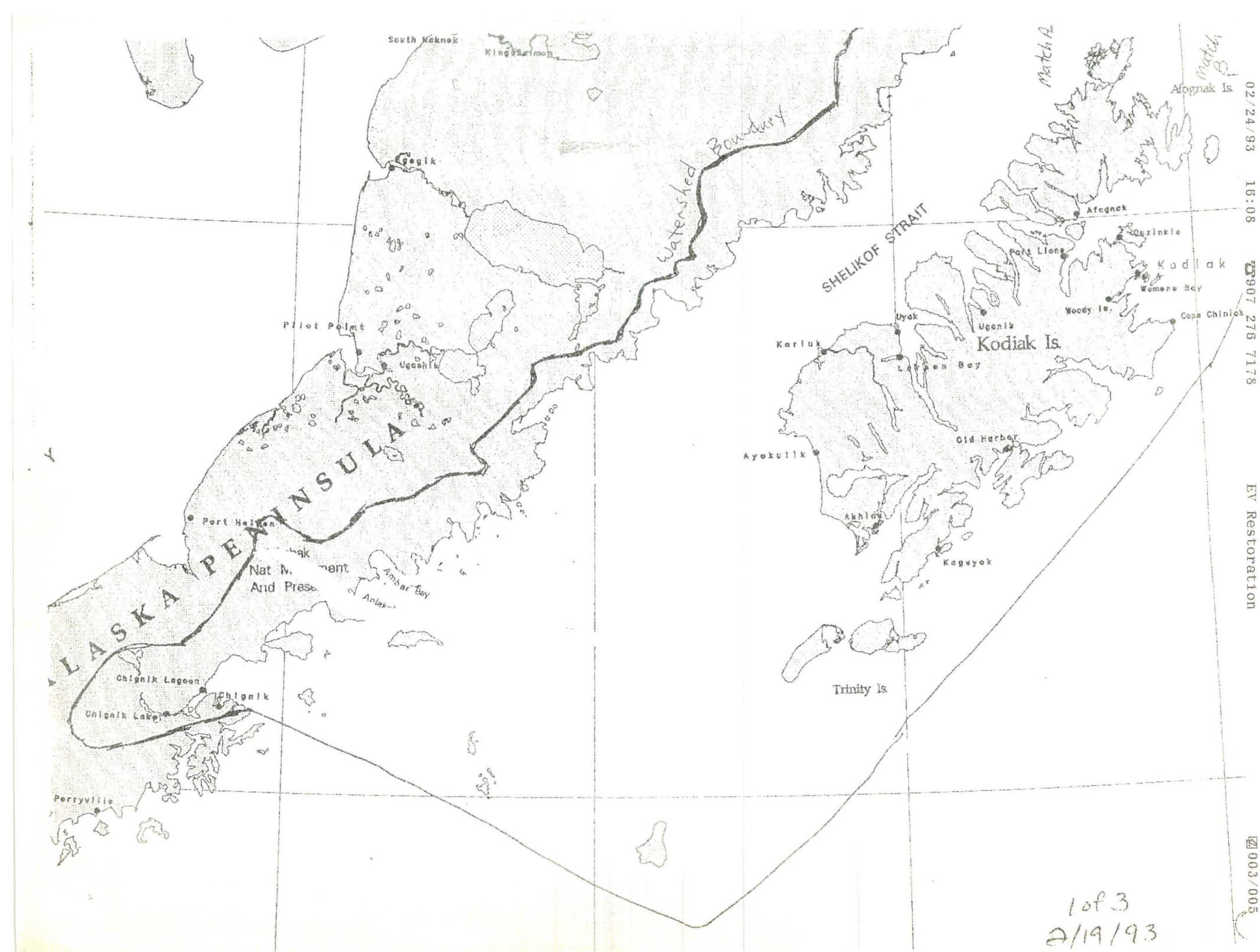
Carol,

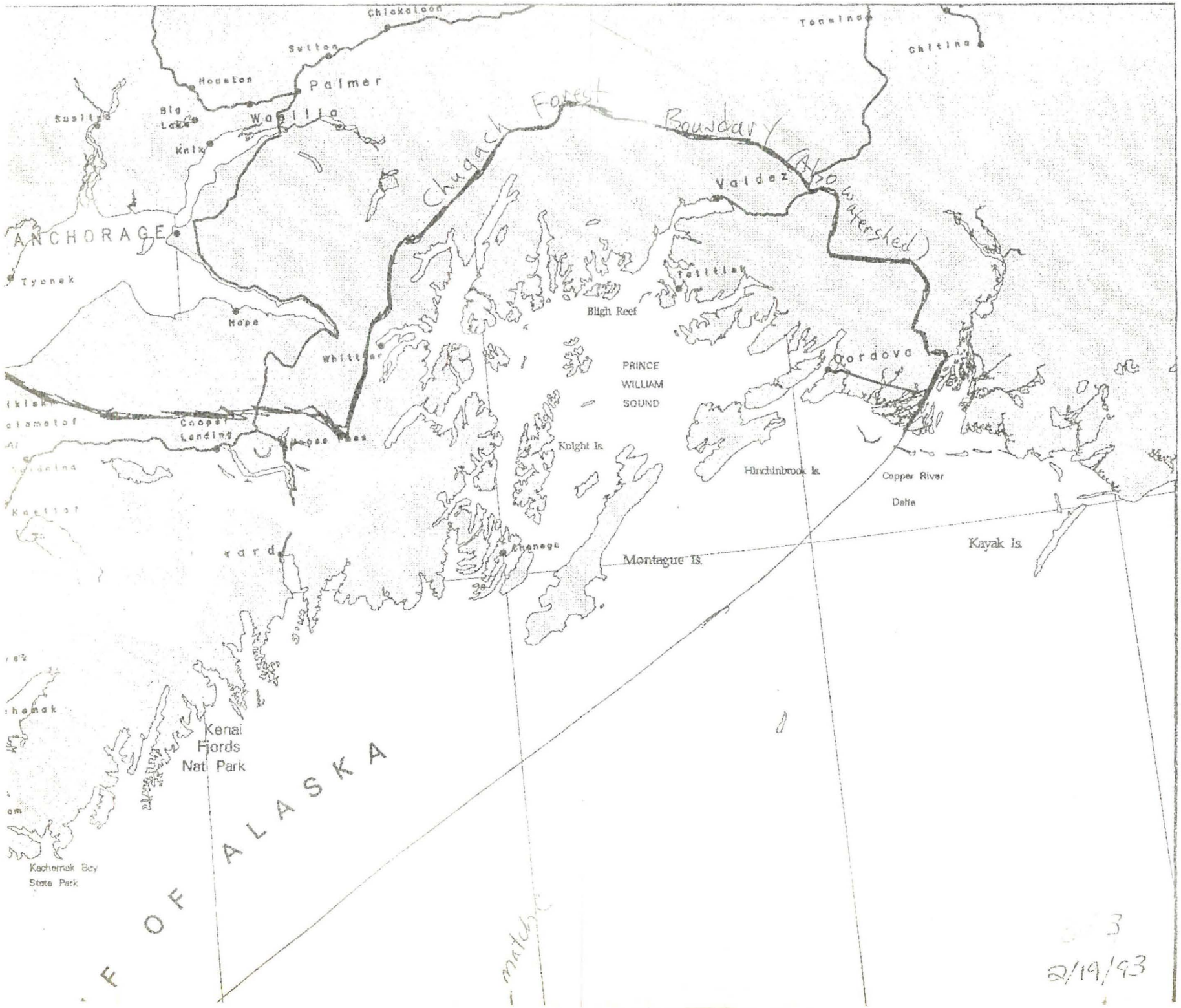
This is the botched version. Since the decision has not been made on the change no "official" large maps have been drafted. If you need more or better maps call (907) 278-8012.

Thanks

Ray Thompson


Tyonek
Hope
Tatitlek
Bligh Reef
Salamatof
PRINCE
WILLIAM
SOUND
Port Alsworth
Knight Is.
Clam Gulch
Chenega
Montague Is.
Pedro Bay
Kachemak
Kachemak Bay
English Bay
Port Graham
Kenai
Fiords
Nat Park
Kachemak Bay
State Park
GULF OF ALASKA
National
Park and
Preserve
Barren Is.
Afognak Is.
Afognak
match A
match B
match C


South Naknek
King Salmon
Egegik
Watershed Boundary
SHELIKOF STRAIT
Afognak Is.
Afognak
Port Lions
Kodiak
Womens Bay
Woody Is.
Cape Chiniak
Uyak
Uganik
Kodiak Is.
Karluk
Larsen Bay
Old Harbor
Ayakulik
Akhiok
Kagayok
Trinity Is.
Pilot Point
Ugashik
ALASKA PENINSULA
Port Heiden
Nat M... ment
And Prese...
Amber Bay
Chignik Lagoon
Chignik
Chignik Lake
Perryville
02/24/93 16:08 ☎907 276 7178 EV Restoration 003/005
1 of 3
2/19/93



matches

2/19/93

TO: Restoration Team

DATE: January 12, 1993

FROM: John Strand, Co-Chair
Bob Loeffler, Co-Chair
Restoration Planning Work Group

SUBJECT: Restoration Plan Schedule

By February 20, 1993, the Restoration Planning Work Group intends to complete the following segments (Key Elements) of the Draft Restoration Plan. By March 1 we intend to complete a draft of the Alternatives Information Package (referred to as a brochure in earlier correspondence). These items will serve as the basis of public meetings which we intend to conduct during April 1993. A schedule is attached.

By the end of January we will submit to the Public Participation Work Group a detailed request for assistance in preparing for public meetings.

The following is an abbreviated outline of the Key Elements and Alternatives Information Package. It is an except from the full outline which you have reviewed.

KEY ELEMENTS OF THE DRAFT RESTORATION PLAN

III. Injured Resources and Services **Rabinowitch/Loeffler**

A. Background: Guidance, Definitions and Criteria

1. Explanation of settlement guidance for injury
2. Definitions of natural resources and services
3. Definition of injury to natural resources
4. Definition of injury to services
5. The criteria

B. Conclusions **Loeffler/Spies/Strand**

1. Marine Mammals
2. Terrestrial Mammals
3. Birds
4. Fish
5. Shellfish (as described above)
6. Intertidal/Subtidal (as described above)
7. Services

IV. Restoration Options

A. Development of Restoration Options **Klinge/Strand**

1. Definition of restoration options
2. Development of restoration options

B. Evaluation Process

1. Settlement Guidance
2. Purpose and use of the criteria

C. Application of criteria

1. Development of alternatives

V. Restoration Plan Alternatives **Loeffler**

A. Definition of an alternative?

1. Description, policies, goals
2. Options
3. How options will change as we get more information

B. Why or why not a preferred alternative?

C. Overall Management goals (and, if appropriate, objectives) for the Spill Area

D. Alternatives **Loeffler/Gorbics/Klinge/Gilbert**

Alternative 1: (title)

1. Theme, including basic goals and objectives of the alternative.
2. Resources Addressed and options proposed that address each resource
3. Services Addressed
4. Monitoring Program
5. Evaluation
   a. Effect on recovery or service (time and extent)
   b. Ecosystem effects
   c. Geographic distribution
   d. Cost
   e. Certainty of the above factors
   f. Timing and priority

Alternative 2 (same as above)
Alternative 3 (same as above)
Alternative 4 (same as above)
Alternative 5 (same as above)

Alternative 6: No Action (same as above except for (3)

E. Comparison of alternatives **Rabinowitch/Gilbert**

VI. Implementation Process for Life of the Settlement

B. Funding mechanisms **Brodersen/Loeffler**

1. Current Mechanisms
2. Endowment

Appendices

A. Restoration options **Various authors**

Summary of options and suboptions

B. Habitat Acquisition Process **Weiner/C. Gilbert**

ALTERNATIVES INFORMATION PACKAGE - Loeffler

The Alternatives Information Package will accompany the Key Elements of the Draft Restoration Plan. The intent is to provide the public with a more reader-friendly summary (4-page newspaper insert) that can be read by those not inclined to read the entire document. The brochure will also be printed in greater numbers to facilitate a wider public distribution than the intended distribution of the Draft Restoration Plan. It also will have a tear-out, pre-addressed detailed comment sheet. The objective is to increase opportunity for public comment.

Public Meetings -- Where & When

I. Introduction

A. Background

1. The spill
2. Activities to date

B. The planning process

C. How you (the public) can be involved

D. Relationship to EIS

E. What the plan will not do

F. Summary of Implementation

II. The Settlements

A. Criminal & Civil

B. Spending Guidelines

III. Summary of Injury, Recovery, and What, if anything, can be done to help. For each injured resource and service, a description of injury by the spill, status of recovery, and what techniques are available, if any, to aid recovery, and the effectiveness of those techniques. Land acquisition will be included in this description (as a technique to aid recovery and avoid further degradation).

IV. Alternatives

A. Introduction

1. Options
2. Evaluation, including cost and geographic distribution

B. Goals, objectives, and policies common to all alternatives

C. Description of alternatives (probably one newspaper page per alternative). One of which will be the no-action alternative; another will be the preferred alternative.

V. Comparison of alternatives

VI. Implementation

A. Annual Work Plans

1. Implementation document
2. Annual solicitation of ideas
3. Annual public review of draft plans
4. Timing of annual plans

B. Operations/Administration

1. Settlement Guidance
2. Organization (including organization) chart

C. Funding Mechanisms

1. Current Mechanisms
2. Endowment

SCHEDULE

01/22/93	Chapter III (Injury) draft due; in-house review[1] begins
01/29/93	Chapter IV (Methodology) and V (Alternatives) due; in-house review begins
02/05/93	Revised drafts of Appendix A (Options) and B (Habitat Protection) due; in-house review begins
02/12/93	Close of In-House Review of **Key Elements** [Chapters III, IV, and V and Appendices A and B]
02/19/93	Revised draft of **Key Elements**
02/22/93	Submit **Key Elements** to editor
02/24/93	Complete draft of **Alternatives Information Package** (brochure); in-house review begins
03/01/93	Close of in-house review of **Alternatives Information Package**
03/03/93	Complete revision and submit **Alternatives Information Package** to editor
03/05/93	Edited drafts of the **Key Elements** and **Alternatives Information Package** returned from editor
03/08/93	Revisions completed
03/09/93	Begin preparing camera-ready copy of both documents
03/17/93	Camera-ready copies to the printer
03/24/93	Release both documents to the public
03/25/93	Issue public notice of meetings and begin other preparations for public meetings
April	Public Meetings
05/03/93	Begin drafting Chapters I, II, and VI.D-F.
05/10/93	Complete drafts of Chapters I, II, and VI.D-F.
05/16/93	Trustee Council approves Draft Restoration Plan and DEIS
	Close of Public Comment Period on **Key Elements** and Alternatives Information **Package**
June	Compile comments submitted during April and May
06/07/93	Release **DEIS** and **Draft Restoration Plan**

[1]In-house review of Key Elements and the Alternatives Information Package will consist of a joint review by the RPWG member and RT member of each trustee agency. RPWG would resolve the conflicts and elevate unresolved issues to the RT.

RESTORATION PLANNING WORK GROUP
FEBRUARY 10, 1993
9:30 A.M.

ATTENDEES

Carol Gorbics
Bob Loeffler
Veronica Gilbert
Chris Swenson
Ray Thompson
John Strand (via teleconference)

DROP ALTERNATIVE

Bob stated during the RT teleconference on Monday, some RT stated the TC was concerned about the complexity of the alternatives and felt RPWG should be prepared to drop an alternative. Bob stated he suggested dropping alternative 1 and that was viewed as not worth pursuing by the RT. Veronica has a proposal relative to dropping an alternative. She reviewed alternatives 3-5 to figure out if we would be raising reasonable policy issues. She suggested the possibility of dropping 3 and 4 as they exist now and substituting an alternative that includes all effective actions for resources affected at a population level. This focuses on two of the key variables we have looked at: should we just do restoration actions for populations affected at the population level or should we do restoration for resources injured sublethally. Any dropping of alternatives will result in losing some distinctions. We would lose the distinction between effective and highly effective. Veronica recommended including all effective actions in both alternatives. It simplifies the distinction of not having to explain the difference between effective and highly effective.

Veronica stated she has an additional suggestion to add before today is over. Carol stated she is convinced by Veronica's suggestion. Her only comment was that within this we need some priority process. Bob stated he was originally skeptical. He listed study options versus do something options and came up with 11 options total. Eight of those are study options which you don't know how effective they are until you do further study. Bob stated he has a problem with reducing the confidence interval. Veronica stated we have to work on simplifying everything including the explanations. Carol suggested another option. She separated the yes and nos by the most restrictive and least restrictive.

Carol diagramed the following:

pop. decline	pop. decline and sub pop. decline
resources not recovered	all resources
protect existing use	protect, increase or new use

Veronica deleted effectiveness of restoration options and chose to retain alternatives 3 and 5. It could be captured in terms of priority or in the text. Chris stated if we keep effectiveness in as some sort of criteria, it can be used to screen. Chris raised the issue of the need for some guidance. Bob stated this guidance might be budgetary. Veronica stated there is a need to define effectiveness. Bob stated that alternative 5 needs some side boards. Carol stated Chris raised a very important issue and feels RPWG has the power to mold this alternative further by defining effectiveness and budget categories. Bob asked where to put things that are not as tightly linked to injury that are replacement or acquisition out of the spill area. This is a fundamental question which needs to be captured.

Bob developed the following phrases which can go into a table:

rename variable: link to injury
in alts. 2 and 3 - options targeted on spill area only
in alt. 5 - option linked to injury throughout Alaska

The key concept is it has to be linked to injury because of the settlement. Carol stated the only unfortunate part to this idea is its closeness to the geographic variable. Veronica proposed allowing for fox eradication in both alts. 3 and 5 because of policy decisions already made by the TC and RT. Bob stated it is misleading to say everything will be considered and keep the budget constraints the way they are. There would be a trade off. Veronica stated her reservation is about the heading, link to injury. Carol suggested using geographic areas. Ray stated the geographic scope gives you further refinement. Bob recommended forming a wording subgroup to develop wording. Chris stated we need to get at populations injured and those that weren't. People will wonder if you are restoring what was injured. Veronica asked if Chris would limit all replacement to alternative 5. Chris stated he would like to. Bob suggested setting up as a trial balloon for tomorrow's meeting with the RT options linked to injury within the spill area and options linked to injury within Alaska. John asked what themes will we use to distinguish between alternatives 3 and 5. Carol stated themes would be: extent of recovery and geographic area. John suggested preparing themes for tomorrow's meeting.

Veronica stated that based on popular and organized opinion, there is the idea that the best thing to do is to prepare for the next spill, such as improving baseline data. Veronica proposed incorporating into this alternative a fund ($100m) that would be set aside to address research response and prevention, which could lend itself to an endowment. A portion of the money (20% of the settlement) would do whatever is appropriate or legal to prepare ourselves for response or restoration. If we don't deal with it somewhere in the alternatives, we will be forced to address it later. John stated the baseline ecological data that was talked

about has been addressed as part of the monitoring program (third component). Veronica stated the significance is to incorporate this issue into the alternatives as opposed to relegating it to chapter 5. Carol suggested that RPWG considered adding this alternative to the plan. Veronica stated we could demonstrate the consequences of actions. John stated he agreed that spill prevention and preparedness should be in here. Veronica stated she is concerned about being backed into a corner and being made to commit to things we don't want to be. Bob stated he agrees spill prevention is very useful and what the public wants. Bob suggested preparing two versions of alternative 3 (one incorporating spill prevention). Veronica stated she has a fundamental problem with staff recommendations being squelched. She feels it is important for staff recommendations to be a part of the record.

John will forward Veronica a copy of a report from an oil spill in the Savannah estuary where settlement monies were used to enhance spill preparedness.

Bob summarized RPWG's alternative decisions as follows:

-drop all effective actions variable, if necessary
-drop alternative 4, if necessary (alt. 3 looks different if the above actions are done)
-try geographic constraint variable (subgroup will work out the language)
-prepare two budget recommendations for alternative 3 (depending on resolution of spill prevention issues)

Chris stated if we emphasize too much of a mix and match approach, we will get something less than a plan. Veronica suggested that she and Chris work on this more to crystalize ideas on alternatives for the fall back position.

EDITING PROTOCOLS

Bob prepared and distributed written guidelines for editing procedures. Veronica is the gatekeeper for cost; Sandy for chapter 3 (except resources injury table); Carol - injury. Carol asked for some protocols on font. Bob stated that Steve Levy will work on this. Gatekeepers will tell what changes to make and in what format.

MISCELLANEOUS

The Public Participation Working Group liaison is Sandy. Ray will assist Sandy. Bob stated he will begin getting the graphic artist to work on formatting and graphics. Chris will assist Bob.

SCHEDULE

Bob stated RPWG is one and a half weeks behind in writing the key

elements. Sandy will get all his edits to Steve Levy by tomorrow. Steve will get his edits done by Tuesday. Veronica suggested that Steve confer with the authors. Chris requested that RPWG have an opportunity to review another version. By Monday, 2/22, we will have a new chapter 3 ready for RPWG and the RT to review. Veronica suggested having Dave appoint an RT member to work with the gatekeeper on each chapter.

Veronica stated that it is important to interact with the Public Participation Work Group to determine the window for public meetings. Bob stated an introduction is needed which is the skeleton of chapters 1 and 2. Discussion is needed on how to simplify chapter 5.

RPWG assignments:

chapter 1	-	(skeleton)
chapter 2	-	(skeleton)
chapter 3	-	RPWG review 2/22
chapter 4	-	can be integrated into skeleton version of chapters 1 and 2 (John and Karen will work on)
chapter 5	-	discussion on how to collapse (2/17 at 8:30) bring ideas; needs to address habitat protection
appendix A	-	Carol will be gatekeeper; Chris will assist; has to integrate cost and geographic distribution
elements of chapter 6	-	Veronica will work on spill prevention
habitat protection	-	Art is working on; Chris assigned to coordinate with Art; need a short form
brochure	-	Bob will write a draft

Ray suggested extracting from the cost background information. Veronica also suggested review of habitat protection information which Art is working on. John stated that Karen has a master list of authors and responsibilities. Bob suggested explaining annual work plan in chapter 1 in the skeleton version. The purpose of the introduction is to provide context that is missing. Chris will make sure that the habitat protection information is targeted. Effectiveness will be defined somewhere in the plan (possibly chapter 4) for services, habitat and resources. The threshold criteria will be explained in chapter 4. Chris will work with John on the history of RPWG's methodology. Chapter 4 is a historical chapter. Veronica stated considering the review process she is concerned with introducing a lot of new information.

John asked who will lead the discussion at the TC meeting. The package to the TC included the injury table and chapter 5. John suggested Carol could discuss the injury table for resources and Sandy could do services. Bob or Veronica could lead the discussion on chapter 5. Veronica stated it is important to stress to the TC that this is a living, organic product which will change with

different iterations. Bob stated there will be brief peer review of the brochure. Spies will be consulted regarding peer review.

Ray stated that Forest Service will be making a brief statement that the public meetings may not be necessary.

Meeting adjourned at 12:35.

RESTORATION PLANNING WORK GROUP
February 17, 1993
1:15 P.M.

Attendees:

John Strand
Steve Levy
Karen Klinge
Ray Thompson
Carol Gorbics
Chris Swenson
Sandy Rabinowitch
Bob Loeffler
Veronica Gilbert

AGENDA

1. Transmittal of Alternatives to Walcoff and Associates
2. March "Alternatives Information Package"
3. Approach/Format of April Public Meetings
4. Revision of Chapter V, Draft Restoration Plan
5. Integrating Habitat Acquisition into Alternatives
6. Pacific Sea Bird Conference
7. Monitoring Planning Workshop, April 13-15, CACI

The following items were distributed:

Alternative 6: No Action (same as above except for (3)

John asked for any additional agenda items. Chris suggested adding whether RPWG needs to meet with the RT. John stated the RT has a couple of items they would like to discuss (i.e., the alternatives information package and its scheduling, public meetings approach and format, the geography of the spill-affected area, and the restoration plan outline). John stated he would like to go to them with some concrete recommendations and specific topics. He will get back to the RT this afternoon with the need to meet and the topics. Veronica stated it would be useful to get input from the RT on what to do once a response is received from the attorneys regarding spill preparedness. RPWG will take a better vision of the alternatives package to the RT.

John spoke with Dave and RPWG will be scheduled from 8:30-11:30 tomorrow. The RT would also like to discuss the injury tables. Sandy stated that contractually the table has to go through Spies.

Carol stated that she thought the Public Participation Work Group would be disbanded by March 1. Sandy suggested finding out who will set up the public meetings if the PPWG has been sunsetted.

Carol diagramed the following geographic issues:

Geographic Element

-spill affected area
-geographic locations to implement options} revisiting an
-inside/outside spill area - suitability?} old issue

Consequences of <u>not</u> using geography as a variable

-doesn't limit
-diffuses effectiveness of $
-doesn't provide annual guidance
-doesn't provide consideration of alternate views during public review

RPWG decided to present this geographic concept to the RT. Some closure is needed on the map changes so that the RT can see what the consequences are. Bob and Carol will lead the discussion on geographic elements. The March alternatives package will also be discussed tomorrow.

WALCOFF

John stated that Ken would like to transmit the alternatives to Walcoff and Associates. Veronica stated that we should include the caveats that the alternatives may shrink to 4, and geographic scope, an effectiveness policy, and spill preparedness might be added. John stated Ken felt the text in Chapter V might be appropriate to provide to Walcoff; the tables would not stand alone. Bob stated that there is a problem with the effectiveness information.

APRIL PUBLIC MEETINGS

Sandy stated his sense is to go to large communities; however, we would go to whatever communities requested it. At a minimum there should be one RPWG and RT member with one or two support staff. The public could be walked through the brochure, and comments could be taken. Veronica suggested having a three-month comment period to reduce confusion. Karen agreed and thought this would be adequate from an organization's stand point. Bob suggested giving a deadline for comments. Sandy stated Mark had some good suggestions for what to do with comments. Sandy also suggested doing a good job of advertising so that people know we are coming.

Veronica asked what are the legal requirements with respect to the EIS for meetings. Ray stated that the lead agency makes the decision to meet the legal requirements and give a reasonable opportunity for public comment. Otherwise, the public might perceive they have been left out. Ray stated that Walcoff will make a recommendation to the RT. Sandy suggested saying that the

subject has not been visited yet but when it is, RPWG will take their role. Carol suggested telling Ken that RPWG would like a schedule of the public meetings this summer so that RPWG can announce them at their public meetings in April. John stated we must let the RT know they will be expected to play a part in the public meetings.

BROCHURE

Bob will arrange for peer review of the brochure questions. Ray cautioned we have to be careful the questions are not construed as a part of the draft EIS plan.

Sandy suggested doing show and tell with examples of what the brochure will look like. Bob provided some examples for RPWG. Karen asked how much text is included in a page such as in Bob's example. Steve stated it depends who you are trying to reach whether you emphasize the graph or the text. Bob stated one of his examples is conceptual in its simplicity; however, the options are varied. Karen asked how the brochure would be mailed. Bob stated he would be more aggressive by starting out with a mailing list and finding other ways such as announcements and distribution points. Veronica stated it is cheaper to use news print. Steve suggested having a map on one side and the information on the other. Steve also suggested passing it out with state paychecks. Bob stated this might be biasing it too much. Veronica asked if the brochure would be good for a subcommittee to work on. John stated we have to talk to the RT about this conceptually, and Bob could provide an example. The subcommittee could coordinate with Steve regarding scheduling.

Steve stated the traditional way to develop a brochure is to go to the writer and say what you want and ask for a format. RPWG stated 5,000 copies is the target. John stated that funding for the draft plan is $25,000. It is important to give Steve some boundaries. Steve stated he will come back with three proposals as far as length and then take comments. Steve will get back to RPWG by Monday at 8:30. Steve also stated if you provide something people want to keep, they will respond. He also stressed the time factor involved.

Bob stated that the location of private lands on the map are too small.

Karen stated there has been no conceptual thinking about the annual work plan. John stated he has already prepared a few paragraphs that might fulfill the requirement.

TRUSTEE COUNCIL MEETING

Bob stated he had the following observations from the Trustee Council on yesterday:

March/April brochure/meetings
- yes

No agreement among TC
- no major change in direction

Alternatives
- 5 but TC are open to see changes

Option List **{Bob - move into categories}**
- too much like projects
- too specific; not specific enough
- options as examples only? **(debatable)**

Compartmentalized ecosystem approach

Injury
- "possibly" may be problem

Other restoration vs. other restoration reserve - combine **(yes)**

RPWG "backed into" allocation amounts **(consider ?) (change has allocation lower)**

Note: bold items represent RPWG's position.

Sandy stated he found our titles are very weak and could be more explicit. The public needs to have some tangible sense of what is being done and also there needs to be some spin-off benefit to the EIS. Veronica questioned if the core of the information is there. John stated it is.

John stated that Spies will be convening a group of peer reviewers to discuss the forage fish issue.

The fundamental problem is the TC doesn't understand the difference between an option and a project. Karen suggested having a tree diagram which narrows down into option titles as an example. This might be helpful in showing how we arrived at the options and the variety involved. Veronica stated we are not sure we have a full list of options; others can be added.

Veronica stated there might be some information which if included, would mean losing your audience. We have to be responsive to the Trustees and their concerns have been that we were too specific. Chris stated that people will want to know how their favorite species is being dealt with. Carol stated that some of the titles are not communicative. Sandy stated Steve might be able to help us communicate some of the terms. Karen stated we need a list of options and which alternatives go under them. Bob stated we should work on formatting and feels it is not worthwhile to do it comprehensively until we get something back from the attorneys.

John stated that a letter went out to the attorneys for guidance on use of civil settlement funds for spill preparedness. Veronica stated if a response is not received by the deadline, RPWG will have to do something anyway. John suggested prompting them to try to get something back by the 26th.

Steve stated it is necessary to move fast on the brochure to meet the deadline. Three mock-ups will be provided on Monday at 8:30. Veronica stated RPWG would be responsible for the following that would not be influenced by the mock up: 1) changes in alternatives (variables, number or content), 2) what questions to ask the public, and 3) line up the peer review. Steve stated that what you ask the public will determine how the send-back card will look.

Veronica will work with Bob on simplifying the options list.

INTEGRATING HABITAT ACQUISITION INTO ALTERNATIVES

Chris took a cut at how habitat acquisition would vary across alternatives. To be consistent we need to have habitat acquisition target different types of land. Once you get your pool of lands, the same process would apply. Chris stated to tie things together we need to: 1) make sure RPWG agrees things should vary across alternatives, 2) make sure HPWG agrees, and 3) after joint consensus, look at evaluation criteria for lands. It needs to be presented graphically that habitat protection varies. Chris stated RPWG needs to work with HPWG on a final list of criteria. Veronica stated RPWG needs a brainstorming session with the HPWG staff emphasizing the comprehensive process.

Steve stated the problem overall is that there are not just five alternatives because you can mix and match. You have to be careful you are not telegraphing to the public that there are only five choices. Veronica stated most people can look at a pie chart and see more flexibility.

Chris stated we need to go through the criteria to ensure that they address services. Bob stated you will have to address services in the April meetings.

RPWG agreed on item #1 above regarding alternatives. Bob stated he would like to be involved in the brainstorming session with HPWG. Chris suggested initiating item #3 above at the brainstorming session.

PACIFIC SEA BIRD CONFERENCE

Karen stated that the information she received at the conference has changed her thinking on sea birds. She will address this issue later when there is more time.

MONITORING PLANNING WORKSHOP

John requested that he not be scheduled to attend a public meeting during the week of the workshop (April 13-15th). He is in the process of putting together a list of people who might attend the workshop. There will be a separate and larger list of key informants who also will be contacted for their input.

RESTORATION PLANNING WORKING GROUP
EXXON VALDEZ OIL SPILL OFFICE
645 "G" STREET
ANCHORAGE, ALASKA 99501

PHONE: (907) 278-8012 FAX: (907) 276-7178

TO: Ms. Carol Paquette
Walcoff & Associates
635 Staters Lane, Suite 102
Alexandria, VA 22314

February 19, 1993

THRU: Ken Rice
Restoration Team

FROM: Ray Thompson
Restoration Planning Work Group

SUBJECT: Draft Alternatives for Draft EVOS Restoration Plan and Injury Table

The enclosed text and tables are the most recent work done by the Restoration Planning Work Group (RPWG). They are **DRAFT** documents which, in revised edition, will be part of the Draft Restoration Plan. The Draft Restoration Plan is evolving quickly, with a proposed release date of June 07, 1993. Changes to the text and tables may be made as RPWG receives and incorporates more information, or as decisions on content are made by the Trustee Council.

The range and theme of the draft alternatives were approved by the Trustee Council, Feb. 16. The policy variables were also tentatively approved as they are described under alternatives 1 through 5, pending the addition of a variable describing the geographic scope.

You should consider these caveats during review of the draft alternatives.

1) The Trustee Council (TC) has asked us to develop a policy variable for geographic scope. The RPWG and Restoration Team (RT) has done this but the TC has not reviewed nor approved the variable language. Therefore, consider the language as subject to change. An enclosed map, reflecting the joint RT and RPWG description of the Exxon Valdez Oil Spill Area, will be useful as you study how geographic scope relates to alternative descriptions. This draft product will go to the RT next week. The RPWG will have their comment by Feb. 26. The map will be approved by the TC before its inclusion in the Draft Restoration Plan.

not recd

2) The TC has also asked RPWG to develop criteria for integration of the habitat protection/acquisition process (Option 37) into the draft restoration alternatives. This has not been completely analyzed and displayed in the summary of alternatives table. When text and tabular information is completed it will be forwarded to you.

3) The RT has requested a solicitor's opinion on the efficacy of including language on oil spill prevention planning in the draft restoration plan. A response is expected by Feb. 26. You will be advised of changes. Should this element be added, changes in the cost allocation by alternative would occur. The magnitude and significance of potential changes, if any, are yet to be decided.

4) The use of several endowment types is currently being discussed. Should we conclude that an endowment proposal will be part of the alternative display you will be advised.

5) The current explanation of the policy variable for effectiveness of restoration actions by alternative will be strengthened. Please be cautious of using percent improvement expected similarly for all resources. Your questions on changes and the use of effectiveness percentages can be directed to RPWG staff, Karen Klinge.

Also enclosed are TABLE X: Natural Resources Injury Summary, TABLE XX: Services Summary of Injury, and TABLE XXX: Other Natural Resources and Archaeology Summary of Injury. Table X has received peer review and been adjusted accordingly while other tables are in earlier drafts and peer review is pending.

Debate on the details of the cost information continues in the Restoration Team. The spread between alternatives for the elements of habitat protection and restoration may be adjusted. The current range is based upon agreement between the RT and RPWG on Feb. 18.

Since you have recently assumed responsibility for the environmental impact statement (EIS) portion of this process, I want to inform you af a couple events pending for March and April. On March 24 an Information Brochure on the content of the Draft Restoration Plan will be sent to the public. Comments on the Brochure will be requested and due the same date as those for the Draft Restoration Plan and EIS. Public meetings will be held between April 12th and 30th in major state communities and other locations throughout the spill area. Should significant public comment request changes to the draft information, including alternatives, revisions would be made prior to public distribution of the Draft Restoration Plan and EIS. Changes would have to be made quickly since the Trustee Council is adamant about not lengthening the current schedule.

Please contact Ken Rice or me about your concerns and questions. We are available at the above numbers. Ken may also be reached at (907) 271-2751.

Enclosures: 1) Draft Chapter V: Restoration Plan Alternatives
2) Partial Draft Chapter III: Summary Injury Tables

- * -

Exxon Valdez Oil Spill Trustee Council

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

For Discussion Only

January 19, 1993

MEMORANDUM:

TO: Restoration Team

FROM: Ken Rice, Chairman Environmental Compliance Work Group

SUBJECT: Restoration Plan Issues

The Environmental Compliance Work Group met on January 15, 1993 and reviewed the list of issues developed by Walcoff and Associates. The list was developed from a review of public comments on the Framework Document and results of public meetings held in May of 1992. While most of the issues identified (see enclosure) are items to be addressed in the Restoration Plan, some are unique to the EIS.

The Environmental Compliance Work Group rewrote those issues that it feels should be addressed in the EIS and provided a unit of measure for each issue. The unit of measure is one of the ways the issue will be addressed in the EIS. In other words when the first issue, How will restoration activities affect local economies and communities, is addressed in the EIS it will, among other things, show the change in jobs that could be expected from implementing the different alternatives.

The number(s) in parenthesis after the number of the issue relates to the Walcoff and Associates document. Please give this list a critical review and come prepared to discuss it at the January 27, 1993 Restoration Team meeting. I would like to get this list to Walcoff immediately after the 27th meeting, assuming we can reach closure on the list. Walcoff will need it to write the effects section of the EIS which will be started once they receive the alternatives from the Restoration Planning Work Group.

RESTORATION PLAN EIS ISSUES

1. (socio economic 3, 13) How will restoration activities affect local economies and communities?

   Unit of Measure: Change in number and kinds of jobs

CP: Qualitative

Draft Issues from K. Rice 1-25-92
for discussion w EIS tea

Change in infrastructure of communities

2. How will restoration activities contribute to restoring injured resources and services?

Unit of Measure: Chance in rate and degree of species/service recovery.
Per cent change in population
Number of animals produced
Amount of habitat restored/enhanced
Change in number of years to full recovery
Change in structure of population demographics
Change in recreation user days.

we will handle if provided data by RPWIG

3. (Biological 2, socio economic 13) How will restoration activities affect land uses?

Unit of Measure: Acres removed from private ownership
Acres of public land receiving more protective management
volume of timber irretrievably lost from timber production (timber not available for harvest)
mineral resources irretrievably lost (value of minerals not available for development)

Sharon

4. (Biological 5, programmatic 14) What are the impacts to non-target biological resources from restoration activities directed at injured resources?

Unit of Measure: Change in population of non-target species
Change in population structure of non-target species
Acreage change in habitat to non-target species

if RPWIG will provide data

5. (Biological 7) How will the genetic diversity of wild salmon stocks be protected?

Matt

Unit of Measure: Change in genetic diversity of wild stocks

6. (Biological 8) What changes to the ecological structure of the spill area will occur from restoration activities?

Sharon

Unit of Measure: Change in species diversity – not quantify
Acres of habitat structurally changed – yes

7. (socio economic 3, 12) What changes to subsistence uses would occur from restoration activities?

Qualitative

Unit of Measure: Change in amount and kinds of subsistence resources harvested
Change in accessibility and availability of subsistence resources

8. (socio economic 5, 12) What effects will restoration actions have on human health and safety?

treat from OSHA standpoint ?

sport fishing subsistence → data from Eleanor & Matt

Unit of Measure: Change to hydrocarbon levels in harvested resources

institutions
health services
accidents

Issue number 5 may not be a significant issue that needs to be tracked through the EIS. It may be addressed through a statement that shows how genetic diversity is handled when manipulating wild stocks. The other issues should be addressed in depth in the EIS and the effects of each alternative on each issue should be discussed.

CC Henry Gerke ~ DOI
Ken Chalk
Paul Bates - DOI/NEPA

Walcoff proposal to FS

EIS
L
2013
(5)

Major Issues Identified by the Public

The USFS policy is to formalize lists of important issues to be addressed in the EIS. The identification of relevant issues is based on "reviews of similar actions, knowledge of the area or areas involved, discussions with community leaders, and/or consultations with experts and other agencies familiar with such actions and their effects" (FSH 1909.15 (11.5)). The following lists of issues were identified through these activities and through the EIS scoping process, during which public participation was encouraged, with both written comments and oral responses at public meetings invited. Public meetings were held to discuss the proposed Restoration Plan and the EIS. The issues identified during the scoping process have been divided into four categories:

- Issues concerning the biological environment.
- Issues concerning the physical environment.
- Issues concerning the socioeconomic environment.
- Programmatic issues.

Many of the issues identified by the public fit in more than one of the above categories. The issues relate to the Restoration Plan, the EIS, and the various actions surrounding preparation of each. The majority of issues identified relate to programmatic issues, i.e., issues concerning the Restoration Plan and the implementation of restoration activities.

The lists provided below frame most of the issues in question form, to assist decisionmakers in considering them in context as they develop the Restoration Plan and the EIS.

Issues Affecting the Biological Environment

Issues in this category relate to terrestrial and aquatic ecosystems and resources.

1.** What level and duration of monitoring or research is appropriate to determine the rate of recovery, health, and management of injured species, ecosystems, and services?

2. How will habitat protection mechanisms (such as special management designations, land acquisition, and others) for public and private land and water be integrated into an overall restoration program?

3. Is habitat protection appropriate as a direct means of restoration?

4.** How important are other actions, such as additional cleanup work, in the recovery of a resource targeted by a restoration option, and what mechanism can be used to ensure that the concurrent or sequential actions to maximize the restoration option's impact on recovery are undertaken?

5. Does the implementation of any given restoration option have the potential to result in additional injury to targeted or nontargeted resources or services? Can this potential be weighed in terms of net environmental benefit?

6. What mechanism will be used to ensure that all affected species (e.g., sea otters, bald eagles, seabirds, sea lions, Dall's porpoises, deer) are included in proposed projects?

7. How will the genetic diversity of wild salmon stocks be protected if restoration options that could threaten diversity are implemented?

8. To what extent can the spill area be addressed as an ecological unit, with consideration given to escapement requirements of salmon, food chain impacts, migration routes, an impacts to species that are not commercially important?

9. To what degree can natural processes be relied upon to ensure the recovery of injured natural resources and services?

Issues Affecting the Physical Environment

Issues in this category relate to the earth's physical resources such as air, water, soil, and other geological resources.

1.** What is the potential for using restoration funds to remove sources of contamination other than *Exxon Valdez* oil from the affected area as a means of aiding restoration?

2. How do the Food and Drug Administration and the *Exxon Valdez* Oil Spill Health Task Force findings (indicating that hydrocarbons are not harmful to wildlife living in the spill area) affect restoration options regarding the restoration of water and soil resources?

3.** More money should be spent on pollution prevention and cleanup activities and mechanisms, including sewage treatment, storm-drain improvements, harbor pollution, oil and grease separators, recycling support, contingency planning, industry oversight capabilities, and pre-staging of response equipment for future spills.

4.** How will the jurisdictional (i.e., State versus Federal) issues be handled for

restoration activities being conducted on lands that were created by earthquakes (evulsive lands)? What status will evulsive lands have for receiving restorative actions?

Issues Affecting the Socioeconomic Environment

Issues in this category relate to the socioeconomic and cultural resources of the human environment, such as jobs, communities, and historical and archeological resources.

1. Affected resources need to be better understood, and the means to help those resources recover should be openly communicated among the affected communities, their leaders, and those who will make decisions about restoration efforts.

2.** What information should be distributed to the public, and how should it be disseminated?

3. What are the effects of restoration activities on local economies and subsistence, and how do these effects differ inside and outside the spill area?

4.** What level of restoration funding is appropriate to support educational efforts that assist the general public in understanding what happened during the spill and what they can do to help with the restoration?

5. What measures can be taken to ensure that the potential effects of restoration activities do not affect human health and safety? What will be done to inform residents in the area of the restoration effort whether potential hazards to humans, or adverse impacts on humans, are associated with implementation of the restoration options?

6.** What methods will be used to ensure that the restoration option achieves the desired objective at the least cost, in terms of both economic/financial costs and social/human costs? The social and human costs of implementing a restoration option should be considered as important as the financial costs.

7. What is being done to ensure that all the interests of all affected parties are considered?

8.** How can a balance be achieved between the availability of recreational opportunities and the need for natural resource enhancement?

9.** What can be done to increase the level of involvement of the National Park

Service to ensure that an appropriate level of attention is given to restoring the affected National Parks?

10. What can be done to ensure that injury to services is adequately evaluated?

11. Would it be appropriate or feasible to use restoration funds for educational uses such as a Sea Life Center in Seward, a museum in Kodiak, or a spill display in the Valdez museum?

12. What mechanisms will be used to ensure that the subsistence concerns of Native Alaskans' villages and corporations are adequately and appropriately addressed, considering that these groups were the ones most affected by the spill?

13. What consideration will be given to the concerns over economic losses, especially to logging companies, from large land acquisition restoration programs?

14.** Is the acquisition of timber rights for a period longer than the time needed for resource recovery appropriate?

15.** Can restoration funds be spent on artwork (such as sculptures or murals on buildings) that would be a visual reminder to Alaskan residents and tourists of the spill and that would be tangible demonstrations of the use of restoration funds?

Programmatic Issues

Programmatic issues are those that concern the nature, scope, and ability to implement the Restoration Plan.

1.** Injured resources and services vary in level of injury, rate of recovery, location, and value to the ecosystem and to humans. What priority or weight should be given to these different factors in determining priorities for restoration options?

2.** What criteria should be used to determine the appropriate restoration strategies for restoring or enhancing both injured and non-injured resources and services?

3.** Should restoration activities be evaluated concurrently or hierarchically?

4.** What level of information, from either new or continuing damage assessment studies, including socioeconomic studies, is necessary to evaluate the need for and effectiveness of present and future restoration?

5. If there is a need for scientific, recreational, or other facilities, where, how, and when should they be constructed?

6.** What are the opportunities for, and what is the appropriateness of, long-term funding of programs through endowments?

7.** What administrative structure will be used to ensure that the management and allocation of funds maximizes the amount spent on effective restoration?

8.** What is a reasonable range of alternatives for restoration options, and how should priorities be established for use of settlement funds?

9.** What restoration options exist for using restoration monies to prevent future spills as well as restoring what has already been damaged?

10** How will it be determined what cleanup activities are still necessary and should be continued?

11** What method will be used to determine a restoration option's potential for successfully restoring an injured resource or service?

12.** How will it be determined whether technology and management skills are available to successfully implement a restoration option in the environment of the oil spill area?

13.** How will legal and administrative consistency be maintained between restoration options and the directives and policies with which the Trustee Agencies must comply?

14. To what degree should restoration options be geared toward benefiting multiple resources and services, including both injured target resources and services as well as secondary resources and services?

15. What effect does delaying the implementation of a restoration option have on further injury to a resource or service? Would delay mean foregoing a restoration opportunity?

16.** What methods are available to ensure that decisionmakers adequately consider all resources and services needing restoration or enhancement?

17.** The restoration decisionmaking process should be an open process to ensure that the reasoning of decisions is known by the public.

18.** The public should be allowed to review the restoration proposals that are rejected.

19.** A more proactive approach should be taken by the Trustee Council to speed up the restoration effort.

20.** Data from resource damage assessments should be made available for public review to facilitate relevant public comment. This is especially true for economic studies. No long-term research and monitoring program should be funded before this data has been released for peer review.

21.** The restoration planning process should make provisions for the use of matching funds to increase the size of grants in the spill area.

22.** Cost-benefit analyses should be prepared for all projects being considered; however, budgetary concerns should not be the major factor for rejecting a restoration project.

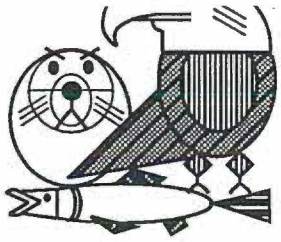
23.** Is it appropriate for money earmarked for the restoration process to be spent on construction projects having little or no connection to the spill?

24.** To what degree should existing agency funds be used for injury assessment? Should these agency funds be the only funds used for future injury assessments?

25. Should the acquisition of land or habitat, including timber, be a priority for restoration monies? What acquisition methods (e.g., fee simple, timber rights only, conservation easements, or others) are the most appropriate means of acquisition?

Exxon Valdez Oil Spill Trustee Council

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



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July 2, 1992

TO: Sheron Saari

FROM: Ken Rice

Subject: EIS Contract

Here are some marked up comments on the proposal you sent me. More important than any specific changes in the proposal, other than the need for a more detailed time line, is the need to incorporate the specific Forest Service needs for document format into either your contract with Justice or Justice's agreement with the Forest Service. I have enclosed a copy of a contract to write an EIS that outlines the specific requirements we have for the deliverables. I have tried to cross off most of the sections in the contract that would not apply to the EIS you are going to do. This contract was for a write only and did not include analysis of effects, the FS did that for the contractor. I gave a copy of this contract to Lisa before she left on Wednesday.

The Restoration Plan EIS will need to estimate effects of the alternatives, the most difficult being economic and/or social effects. We are trying to set up a meeting with Lew Queirolo, NOAA economist, and Daniel McCollum, FS economist, here in Anchorage the first week in August. I don't have a specific date yet. John Strand is working with Lew. His phone number is 206 562-6364. Daniel's phone number is 303 498-1877. If we can get them together it would be good if you could attend the meeting.

I think rather than have Walcoff conduct public hearings after the Draft EIS we will plan on the Public Participation Work Group handling all public input. This will include receiving comment from the Public Advisory Group. You should plan on summarizing the comments but I am not sure we need a Walcoff recorder at the meetings. For one thing I assume we will have to go to most of the towns in the spill area.

We have a requirement to analyze the effect our actions may have on subsistence resources under Section 810 of the Alaska National Interest Land Conservation Act. While I don't think the Restoration Plan will restrict use of subsistence resources the EIS will have to discuss it. The FS subsistence handbook is being rewritten now. I should be able to get you some info on requirements in several weeks.

I think it may be advantageous if we could communicate through E mail. Are you on an E mail system that I could access?

(Ken) N DOJ. ALASKA 3

I will be at 414 743-3237 (Wisconsin) until July 15 after which I will be at 510 934-1262 (Calif). Call if you need me for anything.

WALCOFF

Restoration Environmental Impact Statement Technical Task Statement

Introduction

In March 1989, in the Nation's largest oil spill, the *Exxon Valdez* release 11 million gallons of crude oil into Prince William Sound, Alaska. Almost immediately, State and federal scientists were in the field sampling, collecting, and monitoring the effects of that oil spill in the ecosystem. Oil Years 1, 2, and 3 preliminary NRDA results were reported each December to the Management Team in closed sessions due to pending litigation. In October 1991, the State and federal governments settled with Exxon Corporation. However, scientific studies continued and data held confidential. In April 1992, all parties agreed to release data and the results of the government's ongoing science research program. This proposed effort would be to assist the Trustee Council, with the U.S. Forest Service as the lead agency, in the preparation of an Environmental Impact Statement (EIS) and would serve as the background for impacts of the various restoration proposals.

Walcoff & Associates (Walcoff), under an existing support contract to the Department of Justice, proposes to provide technical and administrative support to the agencies on the Trustee Council. The contractor would provide assistance in planning, coordinating, organizing and writing the Draft and Final EIS, as well as assisting the Public Advisory Group with scoping and public hearings and notices for public distribution. The following tasks are proposed:

Task 1.0 Gather Data

The three senior authors on the Environmental Impact Statement (EIS) would go to Anchorage for approximately two weeks to meet with the Restoration Team (RT) staff to discuss the Restoration Plan and proposed alternative actions for restoration. The EIS team would be divided into natural resources specialist, socioeconomic specialist and environmental impact specialist. Following those special interest topics, the team would review the available data, both from the Natural Resources Damage Assessment (NRDA) process and the documents available from the Oil Spill Public Information Center (OSPIC). The environmental impact specialist would also read the restoration proposals submitted up to this point for consideration of funding from the settlement money. Any report or data which would be useful to the EIS would be copied to become a part of the EIS, by reference only. In order to avoid an

inordinately long EIS, these studies would be incorporated by reference, and only results summarized as necessary.

The EIS team would also review published Alaska environmental impact documents and restoration literature to become familiar with the potential impacts of proposed restoration actions. The EIS would not cover the impacts of the clean-up effort or the response actions which followed the spill. Experts, i.e. those peer reviewers hired by the State Department of Law and the U.S. Department of Justice, and the principal investigators for the NRDA studies would also be contacted by the EIS team. Authors who submitted the restoration proposals may also be contacted for clarification of their plans.

Task 2.0 Write EIS

The Environmental Impact Statement (EIS) general process is shown on Figure 1 as outlined by the Council on Environmental Quality (CEQ) guidelines developed under the National Environmental Policy Act (NEPA). The RT has already completed the first step, which is filing the Notice of Intent (NOI) to prepare an EIS for the Restoration Plan. The U.S. Department of Agriculture's Forest Service would be the lead agency on this document, and their regulations would be followed (Environmental Policy and Procedures 1909.15, as revised, June 24, 1985).

Socioeconomic methods recommended by George Peterson (U.S. Forest Range Experiment Station, Ft. Collins, Colorado) would be used for appropriate sections of the impact analysis. Authors would also review the potential application of the input-output model IMPLAN, which resides on computer at the University of Alaska and uses Alaskan data as a tool for impact analysis, particularly on the local economy. The use of these methods would be dependent upon the issues brought up by the public scoping process.

As shown in the EIS process, following the development of the basic outline and review of the restoration proposals, the project manager would work with the RT to identify the classes of restoration proposals, to be called the alternatives. For example, many of the proposed actions would fall under the class of monitoring which means to follow-up the research begun as part of the NRDA process and to continue to measure the natural recovery of certain ecosystems and populations. This may result in minor annual sampling plans up to more intrusive methods such as placement of radios on live animals. Another class of called manipulations of resources actions may, for example, include fishery bio-engineering techniques which may include structures, e.g. fish ladders or bypasses, or channeling to improve access,

or snag removal or shallow stone dams to improve salmon instream habitats. Another class of actions may include habitat protection and acquisition, which could have sub-elements such as conservation easements, obtaining timber rights, or outright land purchase, with landowner's cooperation. A final example of class of actions may be management of human uses, such as redirecting public use to other areas, establishing marine preserves or educating tour boat operators. Once these actions (alternatives) are described, then the public scoping process would begin.

This proposal assumes the lead in public participation would be taken by the Public Advisory Group (PAG), which is concurrently being formed by authorization from the Trustee Council. One of the PAG's first charges would be to help identify the primary issues of concern to the local public in the affected communities. Since this PAG is holding regional public hearings, these hearings could assume the role of the Public Scoping Meeting as shown on the Figure 1.

In addition, the contractor would draft the required letters to the agencies, those on the Trustee Council, as well as the Environmental Protection Agency, Coast Guard and other agencies who may wish to suggest issues the team shall include in the EIS.

Once the alternatives are defined, others added from the public and the agencies, and the major issues are identified, then the EIS outline would be revised to reflect those changes. This method eliminates the need to analyze the impacts, for example of air pollution, when it is not an issue of concern in the region. Then the project leader would assign the various sections of the EIS to experts in those areas, with target dates for drafts listed. While the time-line shown on Figure 2 "Proposed Schedule" gives review due dates, it is possible to send selected chapters ahead of schedule to the RT for review. For example, a chapter which describes Prince William Sound before and after the Exxon spill would be written early, as well as the description of the various restoration alternatives. These would be sent in for review prior to the description of the environmental impacts.

Environmental impact sections of the EIS would describe the impacts of each alternative action with equal weighting; that is no alternative would be shown as the "preferred" alternative, but all those alternatives listed in the Restoration Plan would be analyzed with the same level of detail. Since there are a great number of alternative actions, the level of detail would be kept general, with mostly qualitative descriptions. Some impacts, for example noise and aesthetics, may not be projected in quantified terms but would also be mentioned, if they were identified as a potential issues to the public.

Where data are available, for example from the input-output model, or for engineered structures, these would be quantified in the EIS. It is assumed the U.S. Fish and

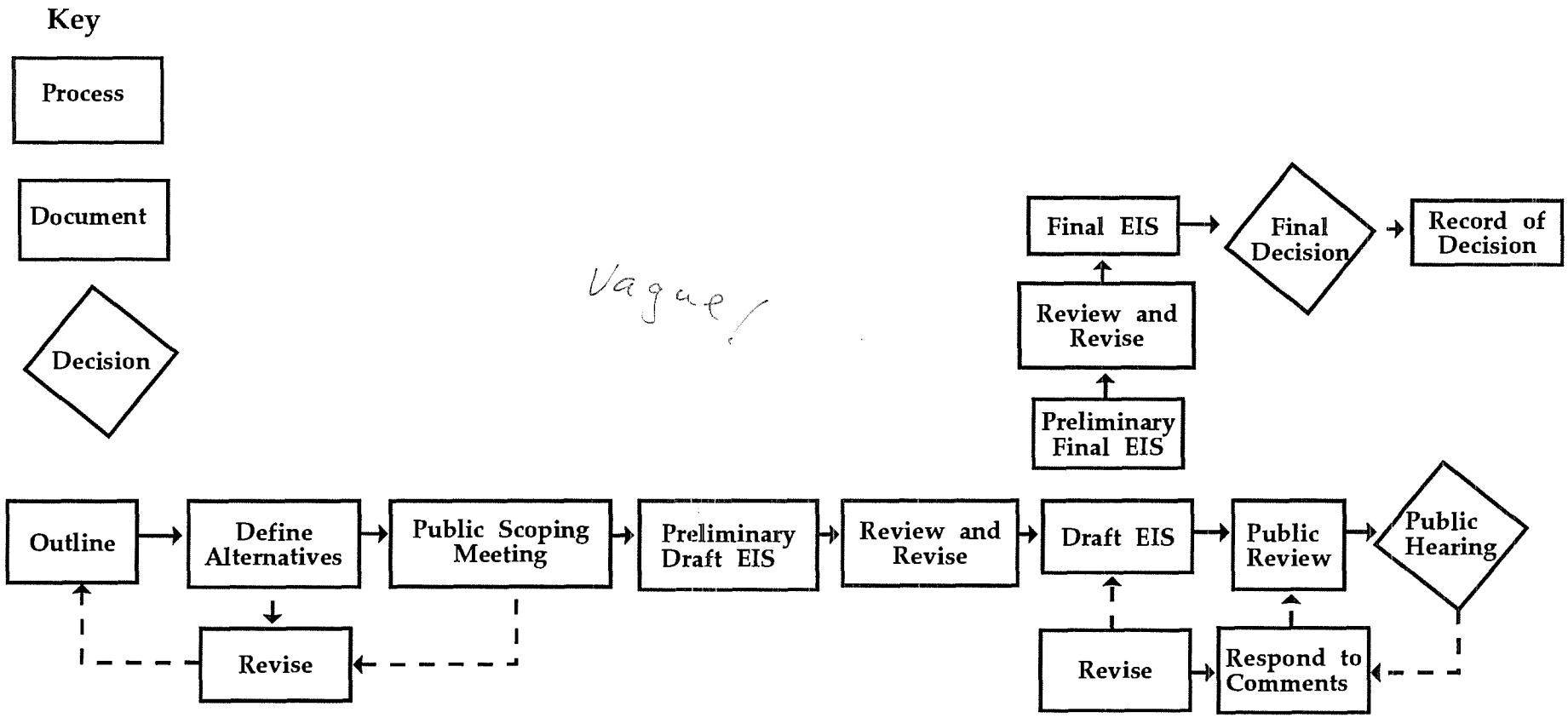

Figure 1. EIS Process

Wildlife Service would write their own biological opinions where any endangered or threatened species may be affected. In the case of marine mammals or marine sanctuaries, NOAA would be asked to issue that biological opinion.

All impact sections would address the potential impacts on the natural resources (e.g. forests, birds, fish etc.) as well as the socioeconomic or human resources (e.g. local economy, recreation, commercial harvesting etc.). The EIS would also attempt to state whether those predicted impacts would be short term or have long term impacts on Prince William Sound. The input to these predictions would have to come from the best available opinions of the scientists working on these research projects. Where models have predicted how long it would take a population to recover, those probabilities would be given. Uncertainties would also be stated.

ANILCA Section 810 evaluation needs to be part of EIS

Task 3.0 DEIS Public Review and Revision

As shown on the schedule (Figure 2), the RT and the Trustee Council would be provided with several advance review copies of the Draft and Final EIS before it is officially released to the public for review. It is anticipated with a document of up to 300 pages, the staff of the RT would be more involved with the review than the Trustee Council, and the EIS team would work closely in the review process with the RT.

The first Draft EIS would go to the RT about mid-November, dependent upon the timeliness of the Restoration Plan. The DEIS would be revised to reflect the RT comments and resubmitted to the Trustee Council. Assuming Council approval about mid-January 1993, then a DEIS can be released mid-February for public review. The U.S. Forest Service would handle the notice of availability for that review, and the contractor would make sure copies of the EIS are made available to the local community and OSPIC libraries, as well as to the members of the PAG.

The public would have approximately 45 days to review and comment on the DEIS. ~~Public hearings are anticipated in at least two locations on two days, about March 18-20, but that decision and running those meetings would depend upon the PAG actions.~~ Agency (Restoration Team) will conduct public meetings

This EIS proposal assumes the contractor would supply three technical staff present at the hearings for answering questions, one secretary for registration of members of the public who wish to speak, and a court reporter for two days of meetings in Anchorage and Cordova. Typed transcripts of comments made would be delivered to the Council within two weeks of the hearings.

Task 4.0 Answer Comments and Prepare FEIS

Following the public hearings, the EIS team would go through the comments received, both from the hearings and in written formats. Comments would be coded and sorted along three lines: (1) Technical questions and corrections in the EIS would be handled by the EIS team. (2) Restoration Plan support, negative comment, and restoration policy questions would be sent on to the ~~PAG~~ to answer. (3) General government policy, more controversial issues, and comments about the agencies would be sent on to the Administrator for consideration by the Trustee Council itself. Some comments are to be expected which are not related in any way to the spill or to restoration, and these would be filed. Following resolution of these relevant comments, the Final EIS would be written and comments in summary format would be appended to the document.

The contractor would revise the DEIS in accordance with the RT's direction. The RT would be responsible for preparing the revised Restoration Plan and for advising the EIS team on parallel changes to the EIS. Assuming there are no major changes, no policy changes, no legal challenges on adequacy for the DEIS, then the EIS would be revised in April 1993, and a draft FEIS sent on to the RT for review by April 30. The Final EIS and Record of Decision made by the Trustee Council should be anticipated about the end of May 1993. The U.S. Forest Service would be responsible for the Notice about the FEIS availability and publish the Record of Decision. ~~The contractor would copy and distribute the FEIS, up to the limit of law or a maximum of 25,000 impressions.~~ Agency will print from camera ready

Alternative Approaches to EIS Preparation

A. The above approach to preparing an EIS is assumed for an outside contractor which is hired to actually write the DEIS and FEIS, with input from the RT. Using this approach, Walcoff & Associates has submitted a separate cost proposal to perform this technical writing. Under the existing support contract with the Department of Justice, DOJ has approved the rates for staff, overhead and fee structure for all tasks under this contract. The costs could be covered by returning 1991 monies set aside for economic studies to the agencies, by de-obligating those funds, and then returning the money to DOJ under an interagency agreement for the 1992-93 task of preparing the EIS. Alternatively, the RT could request the whole amount for the Trustee Council from the court under the settlement. Preparing the EIS is required by federal law, and it is related directly to restoration.

NOAA. ALASKA 3 (Ken)

B. The RT, on the other hand, could write the first draft of the DEIS, concurrently as they write the Restoration Plan, and then hand the remainder of the work over to a contractor. Or the RT could write the entire DEIS and FEIS themselves, and have it reviewed by an outside contractor or peer reviewers. The RT could handle the whole review and revision process themselves. However, it could look like a possible conflict of interest, if the RT appeared to favor one or more alternatives.

C. The RT could hire an individual with Alaska experience, who has written a number of EISs, and is considered an expert in the NEPA process. This consultant could work closely with the RT and serve as an advisor to them. Walcoff could provide this expert. The same problem exists, however, with a potential appearance of conflict of interest for the RT.

D. Since the U.S. Forest Service is the lead agency on the EIS and has extensive experience with preparation of these reports, the USFS could write the entire EIS and submit it to the RT for review. If the USFS has on hand uncommitted personnel for six months, this would be the least costly option and would maintain the appearance of preparation "outside" the restoration planning effort.

Qualifications of Consultant

Walcoff is a small woman-owned 8(a) firm with ten years of governmental consulting experience. Specific project experience was recently supplied to the Trustee Council as part of the Symposium Proposal.

Three key personnel are proposed on this project, Sharon Saari, Brian Sharp, and Kathleen Schildback. Resumes are attached which show the decades of EIS experience these senior authors bring to the project. Ms. Saari is proposed as the Project Manager; she is the author of the *Environmental Impact Data Book* and 15 EISs and environmental assessments, several for Alaska projects. She is also the project manager for the DOJ Exxon *Valdez* oil spill assessment contract. Brian Sharp is currently one of the ecological experts used by DOJ on the Natural Resources Damage Assessment and has many years of EIS experience as well for the U. S. Fish and Wildlife Service. Kathleen Schildback has more than 15 years of experience with NEPA-related assessments and impacts. Her socioeconomic background and working with impacts to Native peoples are particularly relevant to this project. Other resumes follow.

Exxon Valdez Oil Spill Trustee Council

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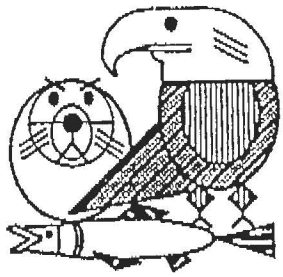


November 25, 1992

Sharon Saari
Walcoff and Associates
635 Slaters Lane, Suite 400
Alexandria, Virginia 22314
(Via Fax 703 364-2040)

Dear Sharon:

This letter is a follow up or our telephone conversation of this morning (or afternoon depending on where you live). I do not think the schedule you have presented in your November 19, 1992 letter, which is based on receiving the fleshed out alternatives in mid February, will be acceptable to the Trustee Council. We must work toward having a final EIS and Restoration Plan by mid summer. Toward that end I will be working with the Restoration Team and Restoration Planning Work Group to speed up products so that you can complete your work.

You and I agreed that in order to do a socio-economic analysis you did not need detailed cost breakdowns for each option. A chart showing how the restoration money would be spent by alternative in broad categories would be sufficient for a programmatic EIS. If we can provide you with cost breakdowns in categories such as management of human uses, manipulation of resources, monitoring, and habitat protection and acquisition, by alternative it would provide you the detail needed to start on an estimate of effects. If we find more detailed information is necessary it would have to wait until it was provided by RPWG.

I have talked with Bob Loeffler and he thinks he would be able to provide that information by mid December. As we gather more information the estimates of how much money would be spent in a broad category by alternative could change which could affect the estimate of effects.

I am enclosing a comparison of alternatives chart that RPWG has generated based on the alternative themes as currently written. The chart shows which options would be conducted under each alternative. The options that would be carried out in each alternative may change once a final definition of injury is arrived at. Some alternatives only emphasize population level injury and further analysis of the information may change which species would be emphasized within these alternatives.

If you have any questions about the chart you should contact Bob Loeffler for further explanations.

Ken Rice
USDA Forest Service
Restoration Team Meber

MEMORANDUM State of Alaska

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
EXXON VALDEZ OIL SPILL RESTORATION OFFICE

TO: Ken Rice, USFS
Restoration Team

DATE: November 23, 1992

TELE: 278-8012
FAX: 276-7178

FROM: Bob Loeffler
RPWG

SUBJECT: Alternatives for the EIS Contractor

Before John Strand left on vacation, he asked me to give you for use by the EIS contractor our current understanding of which options will accompany which of the sketch alternatives. He also asked me to convey when and how the options and alternatives may change.

The enclosed matrix shows which options are a part of each alternative. The matrix is not current, and it will change. Some of the reasons for changes are as follows:

- We have not received from the Chief Scientist a definitive injury summary, or a description of injury. As alternatives are based, in part, on our understanding of injury, it will change as our understanding changes.
- As you know, the peer review panel suggested many changes, especially with respect to services. We are changing a number of options, especially those concerning services.
- We are updating our information base including our assessment of the effectiveness of the options. As that assessment changes the options within each alternative will change.
- We are adding data concerning cost and location to our information base.
- Further review will undoubtedly prompt changes.

Most of the information needed to revise the options and alternatives will become available before Christmas. The next complete revision, however, may not be available until early next year.

The enclosure shows option names and numbers on the left, and alternatives 2 through 6 across the top. An "x" in the cell indicates that the option is included under that alternative. The option itself is described in "short-form" descriptions previously sent to Ms. Saari. I believe she also has copies of the long-form descriptions. No more-recent versions are available.

Alternative #1 is not shown on the matrix. Alternative #1 is the "No-action alternative." It includes no options, though it does include normal agency management and monitoring.

I am sorry that final option and alternative decisions have not been made. I hope that Walcoff and Associates can operate under this level of uncertainty.

Finally, the Restoration Team asked us not to send draft decisions to Walcoff and Associates without consulting the RT. I believe that this information will help Walcoff and Associates with their work (as long as they understand that the information will change), but you may want to check with the RT before sending it.

If you have any questions, please let John or myself know.

COMPARISON OF ALTERNATIVES - RPWG 10/15/92

OPTION		RESOURCE/SERVICE		ALT 2 Protec-tion	ALT 3 Limited Restor'n.	ALT 4 Moderate Emphasis	ALT 5 Expanded Restor'n.	ALT 6 Comprch. Restor'n.
1.0	Stewardship	Archaeology		x	x	x	x	x
2.1	Fish Plan	Cutthroat trout	Enh			x		x
2.1	Fish Plan	Dolly varden	Enh			x		x
2.1	Fish Plan	Herring	Enh					x
2.1	Fish Plan	Pink Salmon	Enh	x			x	x
2.1	Fish Plan	Sockeye salmon	Enh	x	x	x	x	x
2.2	Fish Plan	Rockfish	Enh					
4.0	Reduce disturbance	Common murre				x		x
4.0	Reduce disturbance	Harbor seal		x	x	x	x	x
4.0	Reduce disturbance	Killer whale						x
4.0	Reduce disturbance	Sea otter						
8.1	Closure	Brown bear	Enh					
8.1	Closure	Harbor seal	Enh	x	x	x	x	x
8.1	Closure	Harlequin duck	Enh			x		x
8.1	Closure	River otter	Enh					
8.1	Closure	Sea otter	Enh					
8.2	Vol. restriction - Educn.	Harbor seal	Enh	x	x	x	x	x
8.2	Vol. restriction - Educn.	Harlequin duck	Enh					
8.2	Vol. restriction - Educn.	Sea otter	Enh					
9.0	Min. Incidental take	Marbled murrelet	Enh					
10.0	Preserve arch. sites	Archaeology				x		x
11.0	Improve habitat	Cutthroat trout	Enh			x		x
11.0	Improve habitat	Dolly varden	Enh			x		x
11.0	Improve habitat	Pink salmon	Enh	x			x	x
11.0	Improve habitat	Sockeye salmon	Enh	x	x	x	x	x
12.1	New backcountry fac.	Recreation	Enh					x
12.2	New commercial fac.	Recreation	Enh				x	x
13.0	Eliminate oil - mussel	Black oystercatcher				x		x
13.0	Eliminate oil - mussel	Brown bear						
13.0	Eliminate oil - mussel	Coastal habitat				x		x
13.0	Eliminate oil - mussel	Harlequin duck		x	x	x	x	x
13.0	Eliminate oil - mussel	River otter		x			x	x
13.0	Eliminate oil - mussel	Sea otter		x	x	x	x	x
14.0	Accel. recovery UIT	Black oystercatcher				x		x
14.0	Accel. recovery UIT	Coastal habitat				x		x
14.0	Accel. recovery UIT	Cutthroat trout			x	x	x	x
14.0	Accel. recovery UIT	Dolly varden			x	x	x	x
14.0	Accel. recovery UIT	River otter						
15.1	Supplement intertidal	Herring	Enh					x
15.2	Clean intertidal	Coastal habitat						
15.2	Clean intertidal	Pink salmon						
16.1	Enhance social stimuli	Common murre				x		x
16.2	Improve nest sites	Common murre				x		x
17.1	Eliminate foxes	Common murre			x	x	x	x
17.1	Eliminate foxes	Marbled murrelet				x	x	x
17.1	Eliminate foxes	Pigeon guillemot				x	x	x
17.2	Red. predator access	Common murre	Enh					
17.2	Red. predator access	Pigeon guillemot	Enh			x		x
18.1	New hatchery runs	Pink salmon	Enh				x	x
18.1	New hatchery runs	Sockeye salmon	Enh		x	x		x
18.2	Transplant hatchery fish	Pink salmon	Enh				x	x
18.2	Transplant hatchery fish	Sockeye salmon	Enh		x	x	x	x
18.3	Wild egg take	Pink salmon	Enh				x	x
18.3	Wild egg take	Sockeye salmon	Enh			x		x
19.0	Anad Fish Stream Cat.	Cutthroat trout		x		x		x
19.0	Anad Fish Stream Cat.	Dolly varden		x		x		x
19.0	Anad Fish Stream Cat.	Pink salmon		x				x

COMPARISON OF ALTERNATIVES - RPWG 10/15/92

OPTION		RESOURCE/SERVICE		ALT 2 Protec-tion	ALT 3 Limited Restor'n.	ALT 4 Moderate Emphasis	ALT 5 Expanded Restor'n.	ALT 6 Compreh. Restor'n.
19.0	Anad Fish Stream Cat.	Sockeye salmon		x				x
28.0	Acquire access	Recreation	Enh	x	x	x	x	x
30.0	Test subsistence food	Subsistence			x	x	x	x
33.2	Education	Recreation						
34.0	Marine env. institute	Recreation						
35.0	Acquire arch. artifacts	Archaeology						
37.0	Purchase private land	Bald eagle		x			x	x
37.0	Purchase private land	Black oystercatcher		x		x		x
37.0	Purchase private land	Brown bear		x				
37.0	Purchase private land	Common murre		x		x		x
37.0	Purchase private land	Cutthroat trout		x		x		x
37.0	Purchase private land	Dolly varden		x		x		x
37.0	Purchase private land	Harlequin duck		x	x	x		x
37.0	Purchase private land	Marbled murrelet		x		x		x
37.0	Purchase private land	Pigeon guillemot		x		x		x
37.0	Purchase private land	Pink salmon		x				x
37.0	Purchase private land	Recreation: dev.	Enh	x	x	x	x	x
37.0	Purchase private land	Recreation:undev.	Enh	x	x	x	x	x
37.0	Purchase private land	River otter		x				x
37.0	Purchase private land	Sockeye salmon		x		x		x
37.0	Purchase private land	Wilderness		x	x	x	x	x
40.0	Special designations	Bald eagle		x		x		x
40.0	Special designations	Black oystercatcher		x		x		x
40.0	Special designations	Brown bear						
40.0	Special designations	Coastal habitat						
40.0	Special designations	Common murre	Enh	x		x		x
40.0	Special designations	Cutthroat trout		x		x		x
40.0	Special designations	Dolly varden		x		x		x
40.0	Special designations	Harbor seal		x	x	x	x	x
40.0	Special designations	Harlequin duck		x		x		x
40.0	Special designations	Herring		x				
40.0	Special designations	Killer whale		x				x
40.0	Special designations	Marbled murrelet		x		x		x
40.0	Special designations	Pigeon guillemot		x		x		x
40.0	Special designations	Pink salmon						
40.0	Special designations	Recreation: dev.	Enh	x	x	x	x	x
40.0	Special designations	Recreation:undev.	Enh	x	x	x	x	x
40.0	Special designations	River otter						
40.0	Special designations	Sea otter						
40.0	Special designations	Sockeye salmon						
40.0	Special designations	Wilderness		x	x	x	x	x

W136 (8)

AUGUST 13, 1992

TO: EVOS Trustee Council Members

SUBJECT: EIS for EVOS Restoration Plan

At the June 29, 1992 Trustee Council meeting in Anchorage, the Trustee Council approved a motion to proceed with the EIS process for the Restoration Plan and also approved a motion to proceed with engaging Walcoff thru the Department of Justice's existing contract to prepare the EIS for the Council. [redacted] *

The Forest Service was given the lead to work with DOJ and Walcoff to put together a proposal for the Council's approval and is currently doing so. However, before proceeding any further I believe the Council needs to rethink its decision on this matter given the questions that have now surfaced regarding the continuation of the Walcoff contract. Possible options for completing the EIS are 1) use agency personnel, 2) advertise as a new contract and 3) proceed with use of Walcoff.

Use of Agency Personnel: At the 6/29 meeting no one felt they had personnel available to do the work inhouse in the time frame being discussed. If hiring is necessary to accomplish the job, it will significantly delay the process. This approach carries with it the perception of "financing the bureaucracy."

Advertise as new Contract: It will take about 90 to 100 days to get a new contractor on board and ready to start work. This too would extend the timeframe for completing the Restoration Plan.

Use existing Walcoff Contract: The Trustee Council already agreed this was the best approach from a time and probably a cost stand point. DOJ litigation folks are not entirely pleased with Walcoff's work in support of litigation on this case. [redacted] **

Please advise me as to your thoughts by COB Monday, 8/17/92.

Thanks

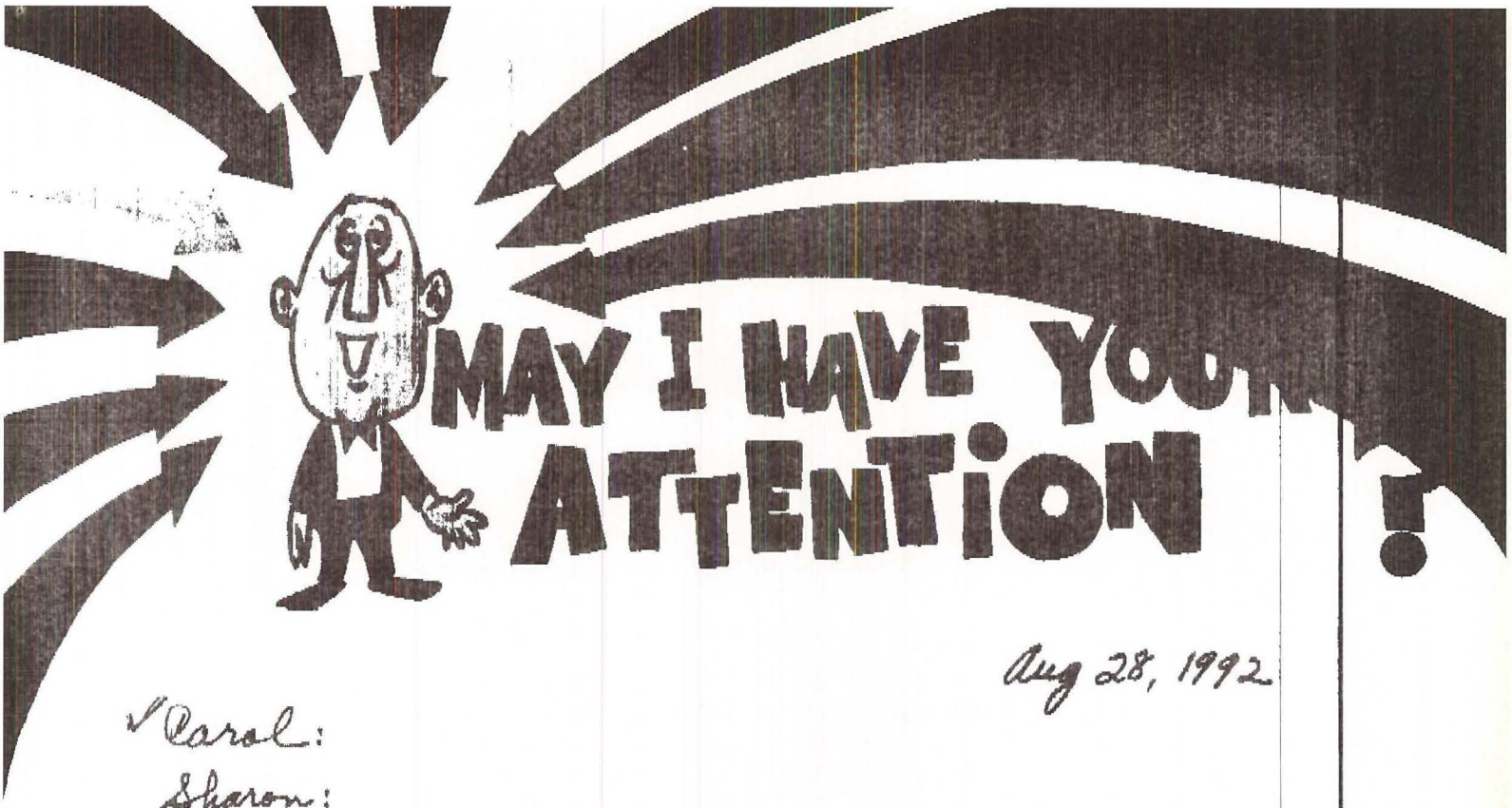
Mike

Mike Barten

* Since that time, some reservations have been expressed by DOJ relative to continuation of the Walcoff contract. The reason given was that Walcoff had performed in a less than desired fashion in support of their EXXON litigation efforts.

** However, Walcoff now has some different people to work on this EIS if we choose to use Walcoff. Of concern is the possibility of having DOJ defend us in a subsequent

lawsuit after using contractor about how DOJ has expressed concerns



Aug 28, 1992

Carol:
Sharon:

I spoke with Verne Wiggins, asst to the Secretary of Interior this morning and he shared the attached information with me. It appears to me that we need to find out from McVee who bad mouthed us at DOJ and get that cleared up.

Verne said that Interior has no problem with us. They just want to make certain that the procurement process is done correctly.

Sharon and I will follow up with Justice and McVee to see if we can get this resolved in our favor. Verne said he knows they're (the Trustee Council) is going to discuss it next week, but doesn't know if they're going to vote.

Skip

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Transmission Notice

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FTS: 8-208-5024

TO: Skip Bell

AGENCY/PHONE:

FAX NUMBER: 703 548-2881

FROM Vernon R. Wiggins. Assistant to the Secretary
Office of The Secretary of the Interior, Wash. D.C.

NUMBER OF PAGES: 9 following

DATE:

Note/Message:

Per our discussion, I trust this and your person's efforts in Alaska to talk personally with Mr. McVee will clear up the misrepresentations of his and the department's position on this matter. Let me know if I can do further in this regard.

Thank you.

United States Department of the Inte

OFFICE OF THE SECRETARY
1689 C Street, Suite 100
Anchorage, Alaska 99501-5151

August 26, 1992

To: Mike Barton, Regional Forester, U.S. Forest Service

From: Curt McVee, Special Assistant to the Secretary

Subject: Procurement of Contractor for Restoration Plan EIS

I am responding to your August 24, 1992 memorandum to members of the Trustee Council. We do not believe that an existing Department of Justice litigation contract should be used as the procurement vehicle to select and retain a contractor to prepare an environmental impact statement for the EVOS Restoration Plan. Preparation of the Restoration Plan simply is not a litigation related activity.

We believe that modification of a litigation contract could subject the Council to valid criticism from the public as well as unfavorable governmental audit findings on such a management decision. If a protest to such a contract was made, the resulting delays could well eliminate the purported time savings that would have been produced by the suggested contract amendment. Moreover, Interior, NOAA and EPA have received correspondence from the Department of Justice advising that Justice is terminating the contract with the science and economic experts that had been retained for the Exxon litigation. This issue was very briefly discussed in the last paragraph of my August 14 memo commenting on the outline of the Restoration Plan.

I agree with the earlier decision of the Trustee Council that procurement matters are to be handled under the rules and regulations of the State and Federal Trustee department or agency assigned responsibility for implementation of the relevant activities. With respect to the EIS, that responsibility has been assigned to the Forest Service. If the Forest Service Contracting Officer agrees with the use of a sole source procurement, and the Service also determines that Walcoff Associates is the best firm to prepare an EIS, we would not object to that decision. Our concern remains that the Council be in a position to make informed decisions on the matters presented to it and that it is able to respond on a reasoned basis to criticism about management decisions.

August 24, 1992

DRAFT

TO: EVOS Trustee Council Members

SUBJECT: EIS for EVOS Restoration Planning

I have now heard from all of you in response to my earlier message regarding the use of Walcoff through their contract with DOJ to do the EIS for the restoration plan. Based on your responses, we do not have unanimous agreement to use Walcoff. The Department of Interior is concerned about the reservations expressed by the DOJ Litigation folks relative to Walcoff's performance under the contract for them. Consequently, they would prefer to see a new contract processed to accomplish the EIS.

Lacking unanimous agree to proceed with Walcoff, I suggest we proceed with a new contract to accomplish the preparation of the EIS for the Restoration Plan. However given the motion which was approved at the last Trustee Council meeting, I believe it is necessary for us to discuss at the next Trustee council meeting and make a final decision on how best to proceed at that time. In the interim, I propose to tell DOJ folks that we are not going to use Walcoff to do the EIS report. Concurrently, we will start putting together the material for a new contract.

Please let me know if you have any suggestions for a different approach.

Thanks

Mike Barton

Not relevant except last # p 11

August 14, 1992

Memorandum:

To: Acting Executive Director, EVOS Restoration Team

From: DOI EVOS Trustee Council Representative

Subject: Proposed Restoration Plan Outline

Interior has reviewed the subject outline that was distributed on 8/11/92. We have several concerns about which we believe the Trustee Council must receive written assurances from the Restoration Team and the RPWG. Two underlying principals have guided our review:

1. Does the outline suggest that a comprehensive, high quality restoration plan will be produced?

2. Will the draft restoration plan be produced within the time-frame previously approved by the Trustee Council? If not, when would a draft plan be available for release to the public?

Completion of the restoration plan is critical and must precede the expenditure of funds for restoration in every instance other than in emergency situations, which have to be clearly demonstrated to be necessary to preserve and or protect endangered resources.

The regulatory policy underlying this position is clear:

> (i) Except in a situation requiring action to avoid an irreversible loss of natural resources or to prevent or reduce any continuing danger to natural resources or similar need for emergency action, funds may not be used under this chapter for the restoration, rehabilitation, or replacement or acquisition of the equivalent of any natural resources until a plan for the use of such funds for such purposes has been developed and adopted by affected Federal agencies and the Governor or Governors of any State having sustained damage to natural resources within its boarders, belonging to, managed by or appertaining to such State ... after adequate public notice and opportunity for hearing and consideration of all public comment. 42 U.S.C. 9611(i).

Similarly, the Natural Resource Damage Assessment Regulations provide:

> (a) Upon determination of the amount of the award of a natural resource damage claim as authorized by section 107(a)(4)(C) of CERCLA, or section 311(f)(4) and (5) of the CWA, the authorized official shall prepare a Restoration Plan as provided in section 111(i) of CERCLA. 43 CFR 11.93(a).

Timely completion and release for public comment of a draft restoration plan and draft environmental impact statement are, therefore, essential.

A major question arises in light of the absence of completed NRDA scientific studies. The NRDA studies will presumably identify and quantify the nature and extent of the injuries to resources as result of the oil spill. Since these are not done, one has to ask the question..."On what basis is a plan for restoration premised? What are the injuries to which resources that the plan is directed to remediate?"

While the scientific studies in the Damage Assessment are well along, they are not all complete and not all of them have been published. Additionally, how the '92 and '93 studies are going to be factored into the Restoration Plan needs to be considered. Given that the NRDA studies form the basis for the restoration efforts, i.e., the historical baseline, the sequential and interdependent relationship between the NRDA studies, the Restoration Plan and the EIS has to be addressed. This is certainly not obvious in the proposed outline.

Based on Interior's review of the draft outline, there is little likelihood that a comprehensive or timely product will be developed. This draft is unacceptable and Interior objects to its being finalized until the deficiencies are addressed. Specific concerns and comments are identified below.

A. Our understanding of the process we are going through is this:

1. The draft restoration Plan must first be prepared and approved by the T.C. It must include a proposed plan (which becomes the preferred alternative in the EIS) which will set the general strategy, goals and objectives for the restoration program for the next ten years.

2. Alternatives to the preferred plan will be included in the draft Restoration Plan and evaluated in the draft and final EIS, but will not be included in the Final Restoration Plan approved by the Trustee Council.

3. The draft Restoration Plan and the draft EIS will go through a simultaneous public review process, after which the Plan and EIS will be modified, as necessary, based on this public review process and direction for the T.C.

4. A final programmatic EIS will be issued on the proposed final Restoration Plan.

5. A final Restoration Plan will be issued which will specify the selected plan and how it will be implemented.

6. The Restoration Plan will be implemented via an annual budget and project schedule which will identify specific projects designed to achieve the strategic objectives set forth in the Plan and will be tied to the Federal fiscal year (for budget purposes).

7. Tiered NEPA compliance documents will be developed by the implementing agencies for those individual plans and projects that require compliance.

8. A supplemental EIS may be required after 4-5 years of restoration work and amendments to the Restoration Plan.

B. General Comments

1. While it is redundant to include the alternatives in both the Plan and the EIS they are legally required to be in the EIS. Irrelevant or whether the two documents contain redundancies it is interior's position that they need to be distributed together as a package.

2. In order to prepare a draft EIS, there must be a specific "proposed action" for which the impacts will be analyzed, and alternatives compared.

3. The concept of the plan is fairly simple: it should state where the T.C. wants to be in 9-10 years with respect to the EVOS-affected area: it should establish a baseline, i.e. where the affected area is now relative to the desired state, and how the Trustees propose to get to this desired state. It is essential to not lose sight of these basic elements and not to overload the Plan with unimportant information that is readily available elsewhere.

4. The Plan should be as specific as possible in defining goals and objectives and types of actions, otherwise it will not be clear what the Trustees intend to do or how progress will be measured. For example:

GOALS	OBJECTIVES	TYPES OF ACTIONS
A. Enhance the run of salmon in the affected area.	1. Increase the run of Silver salmon in the Chenega area by 10% over 1989.	a. Build a Silver salmon fish hatchery.
		b. Reduce the Silver salmon take in 1994.

5. The Restoration Plan must tie the planned actions to the injured resources and services in the EVOS-affected area. It must be clear to the public what is planned to be done to restore, enhance, replace, or acquire equivalents of these resources and services.

C. Specific Comments

1. I.A Add the following at the end of the second sentence, "...and types of actions to implement them." Delete the third sentence. The alternatives establish the goals.

2. I.B Include a summary of activity since the settlement. Explain the role of the Court in the EVOS restoration program.

3. II The public commentary on the Restoration Framework should be summarized in the background and any additional, relevant detailed information placed in the appendix. This would eliminate #II as it stands.

4. III A summary of what is injured and how it is injured and its current state of recovery should suffice. This section should describe where the Trustee Council is in terms of restoration actions and what has happened with State and Federal operational programs in the area since the spill. In essence: "Where we are now."

5. IV This section should be the proposed plan. The plan must clearly lay out the proposed action so that the public can react to it and make suggestions. It can include a discussion of how the plan was arrived at, but the alternatives considered should come in the following major section. It should include information about the process to be used to resolve resource/service conflicts.

6. V This section can exclude the preferred alternative because it should be presented previously as the proposed plan. These same alternatives must be in the EIS.

7. VI The sub-sections should be re-ordered in this manner

A	old D:	Annual Budget and Project Schedule (include a discussion of how NEPA requirements will be met and the relationship of this effort to ongoing State and Federal programs in the area)
B	none:	Operations/Administration (how the Trustee Council, staff, etc. will operate the restoration program)
C	old E:	Funding Mechanisms
D	old C:	Monitoring/Evaluation
E	old A & B	Public involvement
F	old F:	Amending the Plan

8. App. A This information should be described in the plan and alternatives sections? These are the central points of the plan and should not be relegated to an appendix.

9. App. D This should include a list of PAG members.

10. App. Add an appendix D to include the court settlement document, since this is how the public can judge if the plan meets the requirements and intent of the court agreement.

Finally, on a related matter, i.e., preparation of the Environmental Impact Statement, Interior has several concerns which we believe must be addressed prior to a final decision to select and hire an outside contractor to prepare the EIS. First, it must be clearly demonstrated that there is not sufficient expertise or capability currently available within the Trustee Departments to prepare this EIS. Similarly, it must be demonstrated that the hiring of a consultant based so far from the project site is cost effective. Moreover, a sole source procurement, as has been proposed, must be fully justified by the contracting officer of the lead federal agency for this EIS project.

Thank you.

Exxon Valdez Oil Spill Trustee Council

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

AGENDA
EXXON VALDEZ OIL SPILL SETTLEMENT
TRUSTEE COUNCIL

MARCH 10, 1993

TRUSTEE COUNCIL MEMBERS:

MICHAEL A. BARTON
Regional Forester, Alaska Region
USDA Forest Service

CHARLES E. COLE
Attorney General
State of Alaska

PAUL D. GATES
Acting Special Assistant to the Secretary
U.S. Department of the Interior

STEVEN PENNOYER
Director, Alaska Region
National Marine Fisheries Service

CARL L. ROSIER
Commissioner
Alaska Department of Fish & Game

JOHN A. SANDOR
Commissioner
Alaska Department of Environmental Conservation

MARCH 10, 1993 @8:30am

1. Public Advisory Group Operating Procedures - Dave Gibbons/Brad Phillips
2. Negotiating Team Options and Acquistion Guidelines - Marty Rutherford
3. 1992 "Carryover" Projects - Dave Gibbons
4. 1993 Work Plan - Dave Gibbons
   - Deferred Draft Work Plan Projects
   - Public Advisory Group Proposals
   - Prince William Sound Recreation Proposal
5. Review of 1994 Work Plan Assumptions and Framework - Jerome Montague
6. Restoration Organization - Trustee Council
7. Chugach Resource Management Agency Proposal - Dave Gibbons
8. 1992 Annual Financial Report - Walt Sheridan

TRUSTEE COUNCIL MEETING NOTES

February 16, 1993

By Dave R. Gibbons
Interim Administrative Director

Members Present:

Trustee Council	Restoration Team
	Dave Gibbons (IAD)
John Sandor (ADEC)	Mark Brodersen (ADEC)
Mike Barton (USFS) ◉	Ken Rice (USFS)
Charlie Cole (ADOL) ◉	Marty Rutherford (ADNR)
Carl Rosier (ADF&G)	Jerome Montague (ADF&G)
Steve Pennoyer (NMFS) ◆	Byron Morris (NOAA)
Pamela Bergmann (USDOI) ◉	

◆ Chair
◉ Alternates:
Pamela Bergmann served as an alternate for Paul Gates.
Craig Tillery served as an alternate for C. Cole, until 10:30 a.m.
Jim Wolfe served as an alternate for M. Barton from 4:00 p.m. until the end of the meeting.

1. Restoration Organization

APPROVED MOTION: Move ahead with screening Administrative Director applicants on State & Federal side to see if they all meet evaluation criteria in the job announcement. Forest Service will do this on Federal side and ADF&G will screen on the State side.

APPROVED MOTION: Defer further discussion of Restoration Organization until 3/10/93 Trustee Council meeting or soon there after.

2. Habitat Protection

ACTION: Revisit willing seller threshold criteria and specifically review the Alaska Lands Settlement Act. Discuss at 3/10/93 Trustee Council meeting the pros and cons of possible condemnation of lands.

APPROVED MOTION: Send letter asking if land owners are willing to participate in the restoration process. This letter is to be sent to all land owners, owning substantial acreage in the oil spill affected area, not only those presently identified in the 2/16/93 Habitat Protection notebook.

ACTION: Continue to address the negotiations options paper and negotiation process development for the 3/10/93 Trustee Council meeting.

ACTION: Begin comprehensive data collection and analysis for the oil spill affected area.

APPROVED MOTION: Keep working on a Restoration Plan with the five alternatives presently developed.

3. 1993 Projects

APPROVED MOTION: 93011 - Not recommended for inclusion in the 1993 Work Plan.
93016 - Deferred until 3/10/93 Trustee Council meeting.
93024 - Deferred until 3/10/93 Trustee Council meeting.
93030 - Deferred until 3/10/93 Trustee Council meeting.

4. Public Advisory Group (Projects)

APPROVED MOTION: Projects #1 and #2 deferred until 3/10/93. Also bring available information on other two Archeological Museum project ideas submitted for incorporation in the 1993 Work Plan.

NOT APPROVED FOR 1993 WORK PLAN: Project #3 (Herring) $127,000 for data analysis (boat time donated).

NOT APPROVED FOR 1993 WORK PLAN: Project #4 coded wire pink salmon project.
Project #5 coded wire chum, coho, chinook, sockeye salmon.

5. 1992 Projects

ACTION: Progress Report to Trustee Council on status of the preparation of Final Reports at the 3/10/93 meeting.

APPROVED MOTION: Defer Financial Report discussion until 3/10/93 Trustee Council meeting.

APPROVED MOTION: Defer action on the Operating Procedures of the Public Advisory Group until 3/10/93 Trustee Council meeting.

APPROVED MOTION: Defer Prince William Sound Recreation proposal until 3/10/93 Trustee Council meeting.

APPROVED MOTION: Administrative Director work with Acting Director of the Prince William Sound Oil Spill Recovery Institute to potentially develop a cooperative agreement.

ACTION: By 3/10/93 Trustee Council meeting:

1) Review CRMA proposal for PL 93-638 at 3/10/93 Trustee Council meeting (must take some action).

2) Annuity concept letter by Chugach Corporation.

EIS
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3136
(10)

Table IV-X FISHERY ENHANCEMENT TECHNIQUES

Species	Actions Management Plan	Replace-ment	Catalog Habitat	Protect Habitat	Regulate Harvest	Hatchery	Introduce Smolt\Egg	Fish Passing
Pink	N/A		Yes	X	X[1]	X[3]	X[3]	3
Sock-eye	Yes[1]		No[3]	Yes[2]	Yes[1]	Yes[2]	X[2]	
Silver*		1	Yes	Yes	Yes	*	*	No[3]
King*			Yes	Yes	Yes	X	X	3
Chum	N/A		Yes	Yes	Yes	X	X	3
Dolly V	N/A[1]	1	Yes	Yes	Yes[1]	3	3	3
Cut-throat	N/A[1]	1	Yes	Yes	Yes[1]	3	3	3
Herring				Yes	Yes	3	3	-
Rockfish	N/A[1]			Yes	Yes[1]	3	3	-

Legend

[1] Most Effective
[2] Moderate
[3] Least Effective
N/A Not Available
X Replacement

United States
Department of
Agriculture

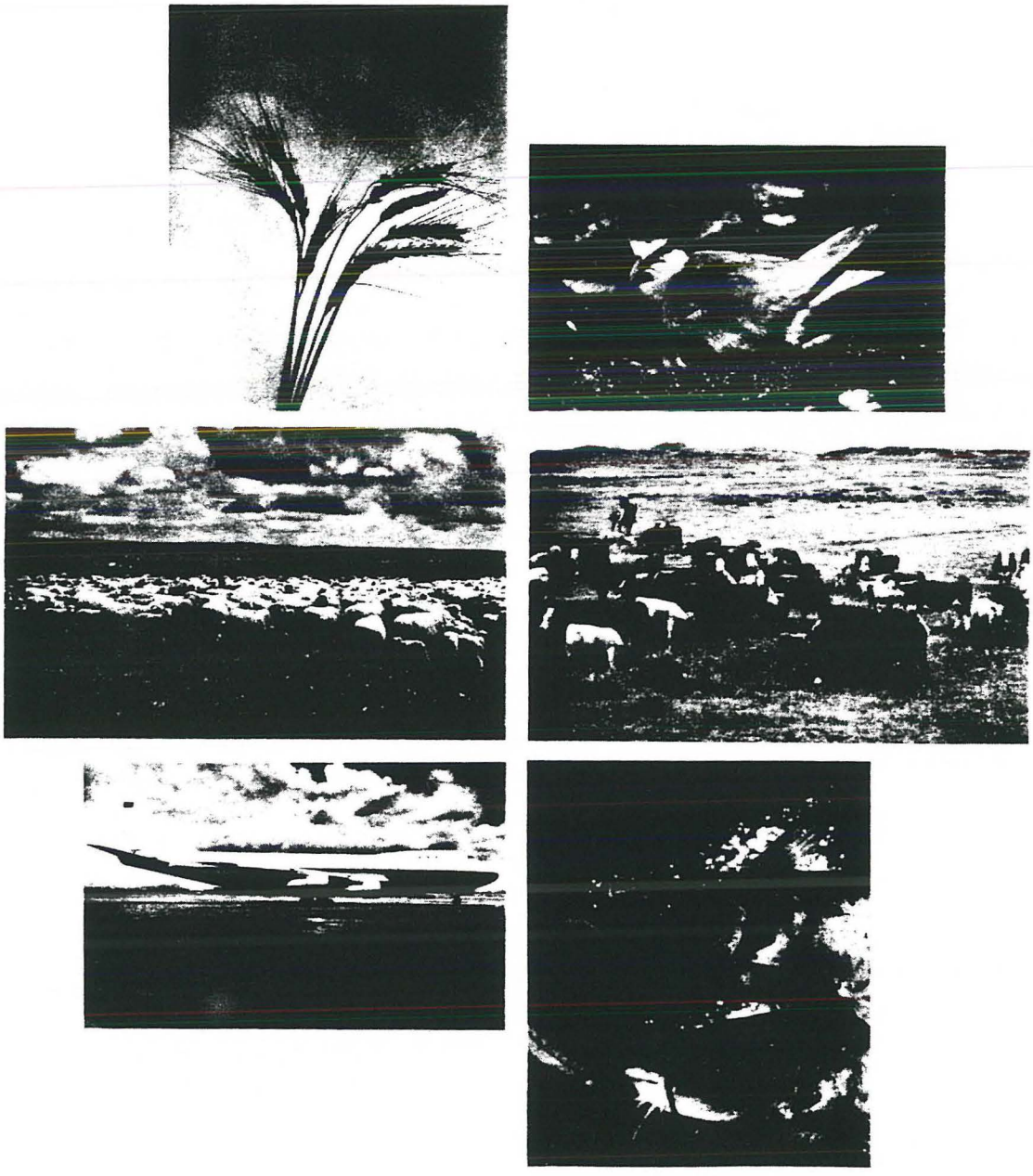
Animal and
Plant Health
Inspection
Service

Animal
Damage
Control

July 1990

Animal Damage Control Program

Draft Environmental Impact Statement



Introduction

Chapter 4 forms the scientific and analytic basis for the comparison of impacts among the alternatives. The discussion includes environmental impacts of the alternatives, local and national impacts, environmental effects that cannot be avoided, short-term and long-term impacts, and irreversible and irretrievable commitment of resources. The discussion also specifies the significance of direct, indirect, and cumulative impacts. The current Animal Damage Control (ADC) program incorporates many policies and procedures intended to minimize adverse environmental impacts of program activities. The analysis of the Current Program Alternative incorporates consideration of standard operating procedures. These are discussed in detail in Chapters 1, 2, and 5.

The environmental impacts or consequences of implementing the Current Program, No Action, and Compensation Program Alternatives are discussed in this chapter, along with an analysis of those impacts and a comparison of the alternatives. The conclusions presented in this analysis are intended to guide decisionmakers in selecting the preferred alternative for the ADC program. This chapter will guide decisionmakers in developing the Record of Decision in compliance with the National Environmental Policy Act (NEPA) after comments are received from the public on the Draft Environmental Impact Statement (DEIS) and changes are incorporated as appropriate in the Final Environmental Impact Statement (FEIS).

The Current Program is the Animal and Plant Health Inspection Service's (APHIS) preferred alternative and is analyzed as the existing situation to which the other alternatives are compared. This is in contrast to an Environmental Impact Statement (EIS) in which the No Action Alternative is the existing situation to which the other alternatives are compared.

The current ADC program implements wildlife damage control through either direct control, technical assistance, or a combination of the two methods. Direct control is conducted by ADC personnel in the field. Through technical assistance, ADC personnel provide advice, recommendations, information, or materials to resource owners, who then conduct their own control work. The effects associated with either direct control or technical assistance may result in positive or negative, direct or indirect, or cumulative impacts.

ADC program data on species killed are reported by state and not at the local level. Therefore, impact discussions can be more quantitative at the state level or aggregated to the national level.

Wildlife damage control methods used under the ADC program are described in detail in Appendix I, and the impacts of their collective use in an Integrated Pest Management (IPM) approach on the biological, sociocultural, economic, and physical (including human health) environments are described in the following sections of this chapter.

Impact Evaluation Methods

The methods used in this EIS for evaluating environmental impacts include the identification of impacts that are direct, indirect, short term, long term, or cumulative. They also include a process for determining the relative importance of the impacts and their significance under NEPA. Although the methods described here apply generally, some impacts must be evaluated on a different basis. Impacts on humans are considered important if they affect the health and safety of one or more individuals. However, impacts on plants or animals are generally considered in terms of the effects on populations, species as a whole, communities, or ecosystems. Impacts on the physical environment are most important when they affect humans or resources important to humans. Economics is a means of measuring monetary impacts on resources, and various impacts have different economic implications. Social impacts also result from impacts on other resources. All of these factors are considered in the identification and evaluation of impacts in this EIS.

4 Environmental Consequences

The impacts addressed in this EIS are those that can be reasonably attributed to the current ADC program or that could be expected from either the No Action Alternative or the Compensation Program Alternative. The impacts of the alternatives are evaluated on their own merits and in relation to impacts of other activities. As a matter of perspective, it should be recognized that the impacts of the current ADC program are a small part of the wildlife management impacts throughout the country. Wildlife managers may seek to increase or reduce populations of animals for various purposes, one of which is the reduction or control of damage caused by wildlife.

Four factors were considered in the evaluation of biological impacts. The **magnitude** of an impact reflects relative size or amount of an impact. The **geographic extent** of an impact considers how widespread the program impact might be. The **duration and frequency** of an impact (whether the impact is a one-time event, intermittent, or chronic) also helps define its limits. The **likelihood** of an impact (whether the impact is likely to occur) is the final evaluation factor. By considering each of these factors, the evaluation of impacts is kept uniform and systematic. Where a quantitative evaluation is possible, specific criteria for the magnitude, geographic extent, duration and frequency, and likelihood of impacts are used.

This evaluation process also is used to determine the significance of the impacts pursuant to Council on Environmental Quality (CEQ) guidelines. To determine the significance of an impact, all four of the evaluation factors must be considered together. No impact is significant unless the magnitude is high. Even if the magnitude is high, the impact is not significant if the likelihood of occurrence is low or if it only occurred briefly in a small part of the range of a widespread species. Table 4-1 presents the criteria for determining NEPA-significant, adverse biological impacts and the possible combinations of impact levels.

The threatened and endangered species impact assessment is guided by the provisions of the Endangered Species Act (ESA) of 1973, as amended. The ESA prohibits the taking (broadly defined) of endangered species within the United States. Any unlawful taking of a threatened or endangered species is considered significant. However, the Act allows taking that otherwise would be prohibited if such taking is incidental to, and not the purpose of, a lawful activity. For example, the intentional taking of threatened species (e.g., gray wolves in Minnesota) is carried out within ESA guidelines.

Biological Impact Assessment

The biological impacts discussed in this section reflect the potential results of the three program alternatives. For the Current Program Alternative, the impacts are evaluated under each category of protected resources. For the No Action Alternative, the impacts are evaluated for various situations that are representative of the range of potential actions and their effects. For the Compensation Program Alternative, the impacts are evaluated by protected resource.

Current Program Alternative

The current ADC program uses an IPM approach in which a series of methods may be used or recommended to control a given wildlife damage problem. The first control method of choice may be to change cultural practices to prevent damage. If that option is not available or successful, other methods, such as habitat or behavior modification, may be tried. However, control of wildlife damage often requires that the offending animal(s) be killed or that local populations of the offending species be reduced. Potential impacts resulting from the application of various control methods are evaluated in this section.

Table 4-1

Criteria for Determining Significant Adverse Biological Impacts

	Level of Impact			
Impact Rating[a,b]	Magnitude	Geographic Extent	Duration and Frequency	Likelihood
Significant[c] (as defined by NEPA)	High	High or Medium	Any level	High
	High	High or Medium	High	Medium
Moderate	High	Any level	Medium or Low	Medium
	High	Low	Any level	High
	Medium	Any level	Any level	Medium
	Medium	Any level	Any level	High
	High	Any level	Any level	Low
	Low	High	High	High
Low	Low	Medium or Low	Any level	High
	Low	Any level	Any level	Medium
	Medium or Low	Any level	Any level	Low

[a] The impact rating is an analysis of the magnitude, geographic extent, duration and frequency, and likelihood of an impact occurring, and is based on a significance level for each of the preceding categories ranging from low to high.

[b] Threatened and endangered species are not evaluated by these criteria, but by standards established under the Endangered Species Act of 1973 and subsequent amendments.

[c] As described in NEPA (1508.27), significance varies with setting of the proposed action and requires consideration of both context and intensity. Context refers to the analysis of an action as it affects society as a whole, the affected region, the affected interests, and the locality. Intensity refers to the severity of the impact.

Wildlife damage control methods and their impacts may be categorized as (1) methods that separate or move the animals from the protected resource or make the habitat less attractive, and (2) methods that remove (kill) animals or reduce populations. Methods in the first category include exclusion devices (e.g., fences), hazing or scaring tactics, habitat modification, and relocation. These methods exclude animals from areas or cause them to move elsewhere and, therefore, often redistribute wildlife damage. These methods do not directly kill the animals responsible for damage; however, these methods do have impacts. For example, moving more animals into one habitat by excluding them from another can increase competition. If the competition is for food, excess animals may starve. Some habitat degradation also may occur under the increased competition, and the overall carrying capacity of the habitat may be reduced, resulting in the survival of fewer animals. If the competition is for cover, some animals may be forced into less cover and become more vulnerable to other mortality factors, such as predation, stress, or disease. If the competition is for reproductive sites, some animals may not reproduce or may do so at reduced rates. The result of this increased competition may be a reduction in the animal population.

Physical relocation of wildlife to control damage generally causes the same adverse impacts from increased competition as occur with exclusion. Relocated animals tend not to remain at release sites and suffer high mortality rates (Rosatte and MacInnes 1989). Additionally, the transfer of infectious diseases is possible (Nettles *et al.* 1979; Jenkins and Winkler 1987; Nielson 1988). From a biological standpoint, lethal removal is usually

preferable; however, in addressing damage that involves threatened and endangered species or other species of special concern, relocation is often desirable as a means of preserving the abundance of the species.

Lethal control methods may be selective either for individual offending animals or for the target species. Where only the animals responsible for damage are killed, populations generally would not be affected unless the population is small and the animals removed represent a percentage larger than what their reproductive capacity is able to replace. Where local offending populations are reduced to control damage, there is seldom any noticeable effect on the species as a whole. Significant impacts on species would occur only if the animals removed represent a large portion of the total population. Less selective methods are more likely to impact nontarget animals. However, nontarget animals are almost always taken in lower numbers and lower proportions of their populations than are the target species.

Impacts Evaluated

The fundamental biological impacts evaluated in this EIS are on abundance and diversity. For purposes of this EIS, abundance is defined as the number of individuals in the population of a species. Abundance may be affected by changing the ability of the population to maintain itself, either by removing more individuals than will be replaced through reproduction and immigration, or by modifying the availability of the basic life requisites (i.e., food, shelter, etc.). Diversity is defined as the number of species in a specific area and can be affected only if the number of one or more species in an area is changed. Abundance and diversity are appropriate measures of the biological impacts of ADC program (or alternative) activities, based on the following assumptions:

- Abundance is a measure of a species' success in inhabiting a given area; generally, the greater the number of individuals of a species, the more likely it is that the species will maintain a viable population in the area.
- There is a general correlation between abundance of a species responsible for damage in a given area and the extent of damage (i.e., the potential for damage or conflict increases with the abundance of a species that causes damage). For substantiation of such a relationship between coyotes and sheep, see Wagner (1988).
- Diversity can be used as a biological indicator of "habitat quality." Greater diversity in a given area is an indication of higher habitat quality, even if most species are not very abundant (Odum 1971).
- The decision to use abundance and diversity as measures of biological impacts relates to public concerns (expressed during EIS scoping) that the ADC program may seriously damage existing "healthy populations" of target animals and hasten the extirpation of nontarget animals, particularly threatened and endangered species.
- It is assumed that wildlife management agencies attempt to maintain viable populations of harvested species by holding annual harvests at or below the species' allowable harvest levels, even if those levels are determined based only on professional judgment.
- Species diversity can be affected by local eradication of isolated populations.

Evaluation Approach

Two approaches are used in this EIS to evaluate ADC program impacts on species abundance. The first is an assessment of impacts on the 17 target species or species groups that are taken in substantial numbers by the program (see following list). This assessment is as quantitative as possible for each species, considering the magnitude, geographic extent, duration and frequency, and likelihood of occurrence of the killing action, as mentioned previously. The methods for the evaluation, the criteria for each evaluation factor, and the application of each factor in the evaluation of short-term and long-term impacts are described in following sections.

The second impact assessment addresses the killing of nontarget species, indirect impacts on any species, cumulative impacts of various program activities on each other and on unrelated activities, and other biological impacts that could be identified. This assessment is primarily qualitative and uses the systematic approach described previously to make sure that all aspects of an impact are considered in determining its significance. Because this part of the impact evaluation is qualitative, no specific criteria for applying the evaluation factors were established. Instead, the factors are used as reminders and guidelines for professional judgment.

The 17 species (or species groups) analyzed in detail are:

- Mammals
  - Badger
  - Beaver
  - Black bear
  - Bobcat
  - Coyote
  - Gray fox
  - Red fox
  - Mountain lion
  - Nutria
  - Opossum
  - Porcupine
  - Prairie dog
  - Raccoon
  - Striped skunk
- Birds
  - Blackbird group
  - Cattle egret
  - European starling

The 17 target species or species groups selected for analysis are regularly killed by the ADC program, often in high numbers; therefore, these species are most likely to suffer significant impacts. These species represent two taxonomic classes of animals (mammals and birds) that cause damage. The types of damage caused by these species represent the major damage problems addressed by the ADC program. Many other species of mammals and birds cause damage to resources protected by the ADC program. For purposes of this EIS, the impacts described for the 17 target species are considered representative of the impacts on other species.

A full range of lethal and nonlethal control methods are used to control damage caused by these 17 species, and they occur over a wide geographic area of the United States. Damage caused by these species is expected to continue for the foreseeable future, so control actions also are likely to continue. Impacts and potential impacts of taking these 17 species are considered representative of damage control activities throughout the ADC program.

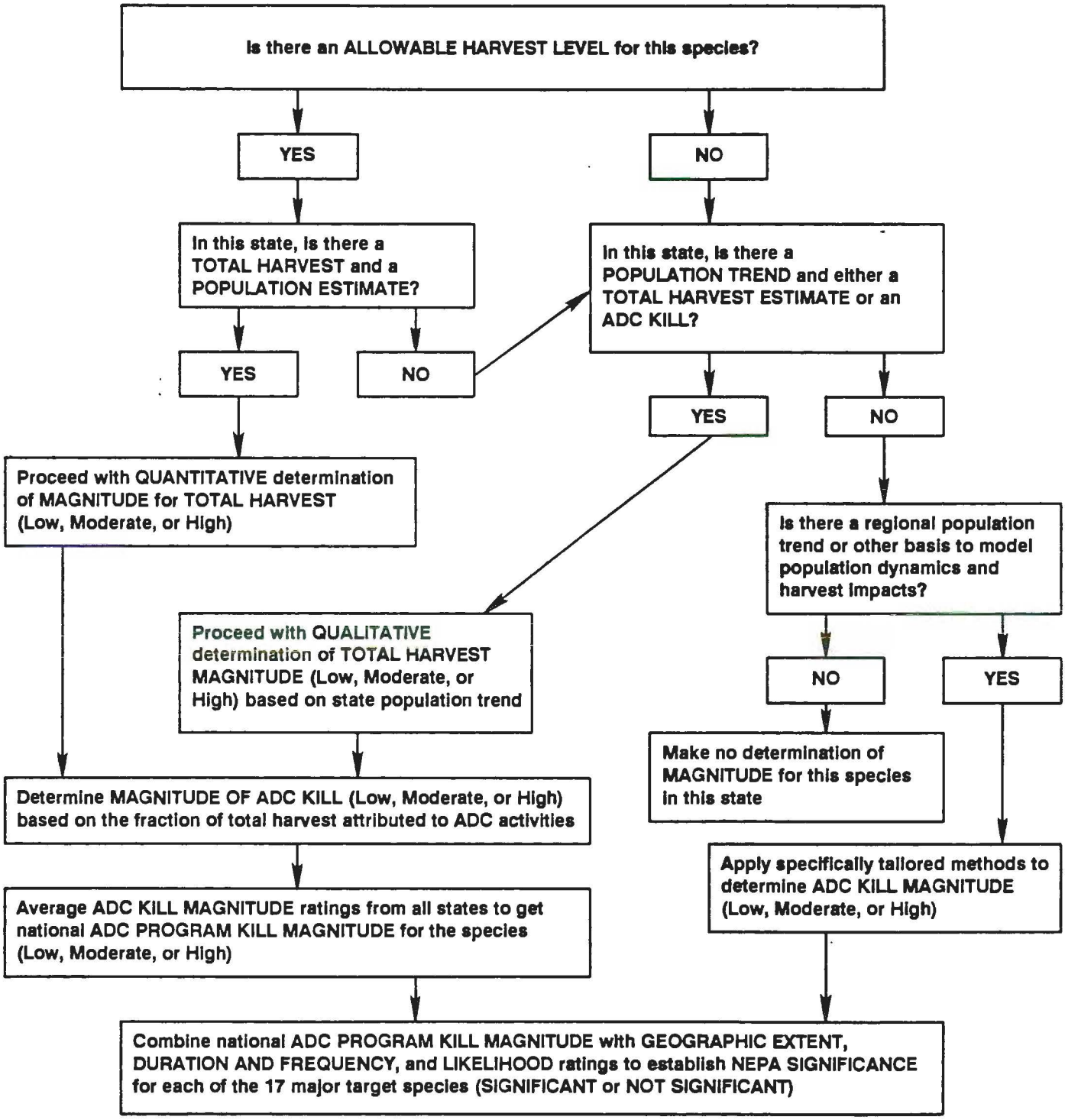
Evaluation Factors

Magnitude

Magnitude is defined as a measure of the number of animals killed in relation to their abundance. In this analysis, magnitude is evaluated first in terms of total harvest, then in terms of the ADC program kill. Magnitude evaluations for each of the 17 major target species are limited to states in which these animals were killed by the ADC program. The procedures for determining magnitude are detailed in Figure 4-1.

In this EIS, magnitude is determined either quantitatively or qualitatively for each major target species in each state or region. The quantitative method is used wherever possible because it is more rigorous; it is based on an allowable harvest level, state population estimates, and harvest data. Qualitative methods are based on state population trends and harvest data or regional population trends and population modeling.

Figure 4-1 **Procedures for Evaluating ADC Program Impacts on Abundance of Major Target Species**



Magnitude evaluations are calculated for both total harvest and ADC kill. The ADC kill ratings are then aggregated into an overall assessment of magnitude for each species. Magnitude is considered along with ratings for geographic extent, duration and frequency, and likelihood to determine NEPA significance of the ADC program kill on each of the 17 target species analyzed in detail in this EIS (Tables 4-1, 4-26). The development and application of criteria to make quantitative or qualitative determinations for magnitude are described in the following paragraphs.

Criteria for Quantitative Determinations. This impact evaluation is based on ADC program records of animals killed during fiscal year (FY) 1988. For purposes of this EIS, FY 1988 is considered representative of a typical year for ADC program activities. Available harvest data for 1987-88 (denoted FY 1988) from state wildlife management agencies are also used in the analysis. If FY 1988 harvest data are unavailable, the most recent harvest information is used as surrogate data.

Quantitative determinations for magnitude of total harvest and ADC kill for a species are based on the allowable harvest level, total harvest, ADC kill, and population estimate for each state. Allowable harvest levels are available for eight of the 17 target species analyzed in detail in this EIS (Table 4-2). The use of allowable harvest levels in managing wildlife populations provides for long-term maintenance of animal populations and therefore is appropriate in establishing criteria for determining magnitude.

To quantitatively determine total harvest magnitude for a species, the total harvest is calculated as a percentage of the most current population estimate for that state. If a range of population estimates is reported for a species in a state, the midpoint is used in the analysis. The total harvest percentages for each state are then compared to the allowable harvest level for the species to determine total harvest magnitude. Magnitude ratings are based on the following criteria:

- If the total harvest is less than 75 percent of the allowable harvest level, the magnitude is considered low.
- If the total harvest is 75-100 percent of the allowable harvest level, the magnitude is considered moderate.
- If the total harvest is greater than 100 percent of the allowable harvest level, the magnitude is considered high.

The harvest percentages corresponding to low, moderate, or high magnitude for each of the eight species used in this analysis are shown in Table 4-2.

In using these magnitude criteria, it is recognized that allowable harvest levels for any species can vary in different situations. Variations in habitat quality, climate, and other environmental features cause density, reproductive success, and mortality to differ among populations. Because of these differences, some populations may support higher harvests than others. Any given harvest level may produce stability for some populations of any species but increases or decreases in other populations.

EXXON VALDEZ SETTLEMENT SUMMARY

CRIMINAL RESTITUTION SPENDING GUIDELINES

I. THE STATE AND FEDERAL GOVERNMENTS WILL INDIVIDUALLY CONTROL THE $50 MILLION PAYMENT EACH WILL RECEIVE.

II. SUCH MONIES ARE TO BE USED EXCLUSIVELY FOR RESTORATION PROJECTS, WITHIN THE STATE OF ALASKA, RELATING TO THE "EXXON VALDEZ" OIL SPILL.

III. RESTORATION INCLUDES: 1) RESTORATION, REPLACEMENT AND ENHANCEMENT OF AFFECTED RESOURCES, 2) ACQUISITION OF EQUIVALENT RESOURCES AND SERVICES, AND 3) LONG-TERM ENVIRONMENTAL MONITORING AND RESEARCH PROGRAMS DIRECTED TO THE PREVENTION, CONTAINMENT, CLEANUP AND AMELIORATION OF OIL SPILLS.

CIVIL RECOVERIES SPENDING GUIDELINES

I. ALLOWABLE EXPENSES ASSOCIATED WITH THE "EXXON VALDEZ" OIL SPILL WILL BE REIMBURSED TO THE GOVERNMENTS.

II. THE BALANCE OF THE $900 MILLION WILL BE DISBURSED AS AGREED UPON IN THE AUG 28, 1991 MEMORANDUM OF AGREEMENT BETWEEN THE STATE AND FEDERAL GOVERNMENTS.

MEMORANDUM OF AGREEMENT GUIDELINES

I. ALL DECISIONS SHALL BE MADE BY THE UNANIMOUS AGREEMENT OF THE TRUSTEES.

II. A JOINT TRUST FUND WILL BE ESTABLISHED.

III. THE TRUSTEES SHALL AGREE TO AN ORGANIZATIONAL STRUCTURE FOR DECISION MAKING WITHIN 90 DAYS OF RECEIPT OF FUNDS.

IV. PROCEDURES FOR MEANINGFUL PUBLIC PARTICIPATION INCLUDING A PUBLIC ADVISORY GROUP SHALL BE ESTABLISHED WITHIN 90 DAYS OF RECEIPT OF FUNDS.

V. THE GOVERNMENTS HAVE NOT ELECTED TO BE BOUND BY THE NATURAL RESOURCE DAMAGE ASSESSMENT REGULATIONS.

VI. THE GOVERNMENTS SHALL JOINTLY USE ALL NATURAL RESOURCE DAMAGE RECOVERIES FOR PURPOSES OF RESTORING, REPLACING, ENHANCING, REHABILITATING OR ACQUIRING THE EQUIVALENT OF NATURAL RESOURCES[1] INJURED AS A RESULT OF THE OIL SPILL AND THE REDUCED OR LOST SERVICES PROVIDED BY SUCH RESOURCES EXCEPT FOR ALLOWABLE REIMBURSEMENTS TO THE GOVERNMENTS.

VII. ALL NATURAL RESOURCE DAMAGE RECOVERIES WILL BE EXPENDED ON RESTORATION OF NATURAL RESOURCES IN ALASKA UNLESS THE TRUSTEES UNANIMOUSLY AGREE THAT SPENDING FUNDS OUTSIDE OF THE STATE IS NECESSARY.

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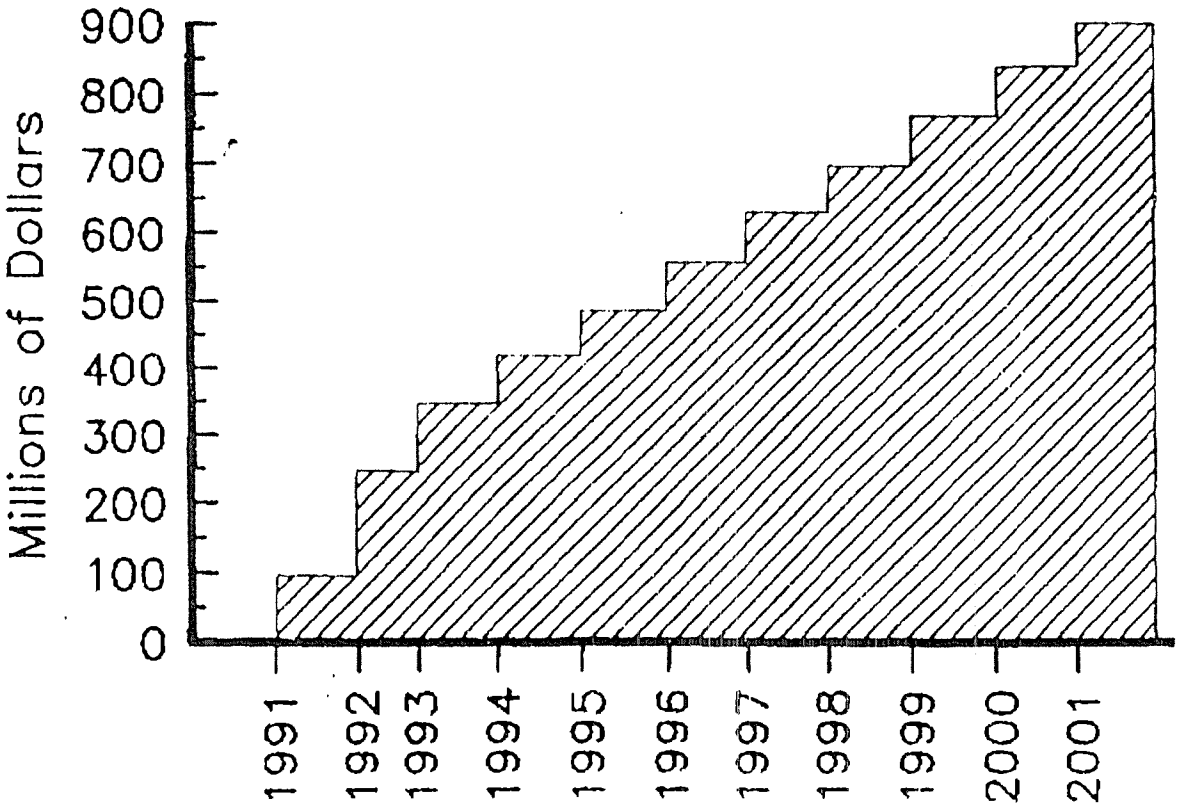
[1] "NATURAL RESOURCES" MEANS LAND, FISH, WILDLIFE, BIOTA, AIR, WATER, GROUND WATER, DRINKING WATER SUPPLIES, AND OTHER SUCH RESOURCES OF THE STATE OR THE UNITED STATES

CIVIL RECOVERIES

Alaska & Federal Government

$90 million	$150 million	$100 million	$70 million
paid	paid	paid	paid yearly
Dec 9, 1991	Dec 1, 1992	Sept 1, 1993	Sept 1, 1994–2001



E15
D
W136
(13)

WALCOFF & ASSOCIATES

M E M O R A N D U M

TO: Carol Paquette ✓
Sharon Saari
Kathy Schildbach
Anne Pretti

FROM: Sue Brown

DATE: February 11, 1993

SUBJECT: Writeup of yesterday's meeting
DoJ *Exxon Valdez* Oil Spill Restoration Plan EIS, 4700-138

BACKGROUND:

Attached are updated handouts from yesterday's meeting as well as a table that summarizes our afternoon discussion on first-level impacts.

DISCUSSION:

The new table is organized by resource and impact, and I have tried to capture most of the details we discussed in the "Notes" below the table. We still need to figure out what to do with timber options and the "golden geese."

ACTION:

Please review the attached. Give me a call if you have additions, deletions, or changes. I am at extension 228.

Carol, should I forward this stuff to Matt at Dynamac?

THE EIS TEAM'S MISSION:

(1) To communicate to the public (both the man on the street and decision makers) the projected effects of the restoration alternatives.

(2) To assist decision makers in deciding how to use settlement funds.

CRITERIA FOR RATING BENEFIT OF PARCEL TO INJURED SPECIES / SERVICE

INJURED SPECIES / SERVICE	HIGH	MODERATE	LOW
Anadromous Fish	High density of anadromous streams per parcel; multiple injured species; and/or system known to have exceptional productivity.	Average density of anadromous streams for area; two or more injured species present.	Few or no streams on parcel; one or less injured species.
Bald Eagle	High density of nests on parcel; and/or known critical feeding area.	Average density of nests on or immediately adjacent to parcel (at least one); important feeding area.	Few or no nests on parcel; may be used for perching and/or feeding.
Black Oystercatcher	Area known to support nesting or concentration area for feeding.	Possible nesting; known feeding area.	Probable feeding.
Common Murre	Known nesting on or immediately adjacent to parcel.	Nesting in vicinity of parcel; known feeding concentration adjacent to parcel.	Possible feeding in area adjacent to parcel.
Harbor Seal	Known haul out on or immediately adjacent to parcel.	Probable haul outs in vicinity of parcel; probable feeding in nearshore waters adjacent to parcel.	Probable feeding in nearshore waters.
Harlequin Duck	Known nesting or molting on parcel; feeding concentration area.	Probable nesting on or adjacent to parcel; probable feeding in stream, estuary, or intertidal adjacent to parcel.	Probable feeding and loafing in area adjacent to parcel.

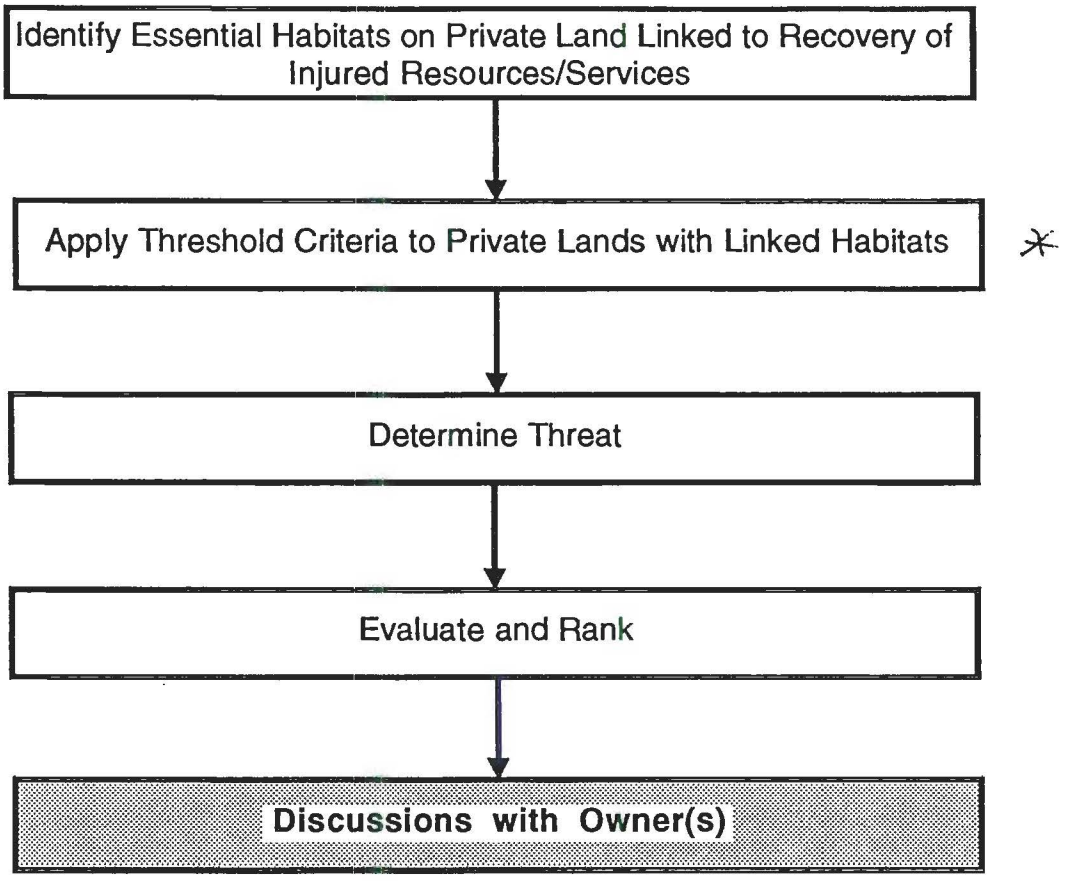
CRITERIA FOR RATING BENEFIT OF PARCEL TO INJURED SPECIES / SERVICE

INJURED SPECIES / SERVICE	HIGH	MODERATE	LOW
Intertidal/subtidal Biota	Known high productivity/species richness. Oiled or adjacent to oiled area where recruitment may be important.	High productivity/species richness; not oiled or near oiled area.	Average productivity/species richness; no documented shoreline oiling.
Marbled Murrelet	Known nesting or high confidence that nesting occurs; concentrated feeding in nearshore waters.	Good nesting habitat characteristics; known feeding in nearshore waters adjacent to parcel.	Low likelihood of nesting; possible feeding in nearshore waters.
Pigeon Guillemot	Known nesting on or immediately adjacent to parcel; feeding concentrations in nearshore waters.	Good nesting habitat characteristic; known feeding in nearshore waters adjacent to parcel.	Low likelihood of nesting; possible feeding in nearshore waters.
River Otter	Known high use of parcel for denning/latrine sites.	Known or probable latrine and/or denning sites; known feeding in adjacent intertidal/streams/nearshore area.	Probable feeding in adjacent intertidal/streams.
Sea Otter	Known haulout or pupping concentrations.	Concentration area for feeding and/or shelter; potential pupping.	Feeding in adjacent waters.

CRITERIA FOR RATING BENEFIT OF PARCEL TO INJURED SPECIES / SERVICE

INJURED SPECIES / SERVICE	HIGH	MODERATE	LOW
Recreation/Tourism	Receives high public use; highly visible to a large number of recreationists/tourists; area nominated for special recreational designation.	Accessible by road, boat, or plane; adjacent area used for recreational boating; adjacent area receives high public use.	Occasional recreational use; access may be difficult.
Wilderness	Area remote; little or no evidence of human development.	Area remote; evidence of human development.	Area accessible; high/moderate evidence of human development (roads, clearcuts, cabins).
Cultural Resources	Documented concentration or significant cultural resources/sites on parcel.	Evidence of cultural resources/sites on or adjacent to parcel.	Possible cultural resources/sites on parcel.
Subsistence	Known resource harvest area; multiple resource use.	Known harvest area for at least one resource.	Possible harvest area.

SUMMARY OF INTERIM PROTECTION PROCESS



Abstracted from Figures 1 & 2 of the Framework Supplement.

* need to contact landowner for willingness

Interim Evaluation/Ranking Criteria

1. The parcel contains essential habitat(s) / sites for injured species or services. Essential habitats include feeding, reproductive, molting, roosting, and migration concentrations: essential sites include known or presumed high public use areas. Key factors for determining essential habitat/sites are:
   a. population or number of animals or number of public users.
   b. number of essential habitats/sites on parcel, and
   c. quality of essential habitats/sites.

2. The parcel can function as an intact ecological unit or essential habitats on the parcel are linked to other elements/habitats in the greater ecosystem.

3. Adjacent land uses will not significantly degrade the ecological function of the essential habitat(s) intended for protection.

4. Protection of the habitats on parcel would benefit more than one injured species/service (unless protection of a single species/service would provide a high recovery benefit).

5. The parcel contains critical habitat for a depleted, rare, threatened, or endangered species.

6. Essential habitat/sites on parcel are vulnerable or potentially threatened by human activity.

7. Management of adjacent lands is, or could easily be made compatible with protection of essential habitats on parcel.

8. The parcel is located within the oil spill affected area.

Matt - status of overall issues list

~~Sharon~~ - public comments status

~~DMG~~

Ken Rice - distribution of DGS ?
Separate binding of 810 piece ?
" " of tree summary ?

Kavanaugh - run base case w/90 data

EIS pieces

impact analysis of pie chart data - Ken Rice concern

baseline background description

injured species tables & numbers

get this in Alaska

→ HPWG habitat protection report

best case - $ goes to locals & get spent locally

worst case -

measures of significance

we don't have data on newly added areas

Q: ~~are we expected to cover impacts~~

· Construction Eng Research Lab / Corps database
Champaign - Urbana

by Wednesday

Malea Penn
works for Chris Carter

Chapter 1 - done

Chapter 2 -

compose tables for alternatives being considered

other alternatives
table is done

Chapter 3 - ~~done~~ on hold

Chapter 4 - A - Kathy structure & tables
B - Sharon " "
rest of chap - on hold

Sue - put together crosswalk table
~~notes~~ list of all things to be considered

Thursday morning 10a.m.
1st floor conference room

NRDF v. Massey
D.C. Circuit

1 C room on right
OSPIC on left

414 El
RPWG
Ray Thompson
Ken Rice - USFS bldg

Ken - any other model ~~we can~~ you want us to use?
new EMPLAN model is defective, don't know how soon will be fixed
fall back is to use ~~old version~~ 1985 of previous model

§ 810 ANILCA reference

transportation data source
any plans?

no action alternative

executive summary

Anchorage must be included in affected area for use of EMPLAN
addtl communities

Sangeeta
Saraf - arch/planner/environmental planner
trans, rec, tourism

Doug - fish person?

forester
ecologist

experts reviewers
Ken Rice can name one, if he likes

Q from Matt
RPWG numbered
suboptions - source & description?

Cp notes 2/23

PRINCE WILLIAM SOUND RESTORATION PLAN
ENVIRONMENTAL IMPACT STATEMENT : OUTLINE
DRAFT ANNOTATED (2-18-93)

Table of Contents (editor) will list the major and minor sections of the DEIS. Chapters and Sections will be listed, with page numbers where these sections can be found. Table will also provide a list of Exhibits (tables and figures to be found in the body of the DEIS with page numbers.) Appendices will also be listed in Table of Contents. **April 19**

The Executive Summary (writer) will be more extensive (up to 50 pages) than is normally found in an EIS. Summary will contain a comparison of the proposed alternatives and the expected impacts of those alternatives for both short term and the long term. This summary will also contain a large number of comparative tables and figures to make it easy reading for the public. Examples are included. **April 19**

I. Purpose and need for action will describe the reasons for the preparation of both the Restoration Plan for Prince William Sound and the DEIS for that Plan. (NEPA process) **Feb 22**

A. Introduction will present an overview of the Exxon Valdez Oil Spill of March 24, 1989, the laws which apply to such spills, the legal case and subsequent settlement between the government and Exxon. The role of the Trustee Council (TC) and the Natural Resource Damage Assessment (NRDA) process will be explained.

The National Environmental Policy Act (NEPA) process will be briefly outlined and the "lead agency" role described. The EIS tiering concept will also be described, as will the general chapters which are to follow in the DEIS.

B. Purpose of Restoration Plan and EIS will be described as they are required by court order and other legal requirements. Restoration actions will basically fall into the three categories of direct restoration, replacement, or acquisition of equivalent resources. A very brief description of the Restoration Plan will be included, but the reader will be referred to the Plan for more detail.

C. Restoration definition and need will be quoted from the court orders and settlement agreements and the Department of the Interior NRDA regulations. This will give the reader some understanding of why the proposed restoration actions are directed toward the injured resources and services, and why other types of actions cannot be funded from this settlement.

D. Major issues (NEPA process) identified by public will provide a summary list of the major issues. One such list will be from Alaska's Attorney General as issues concerning the overall

planning policy. The second list will be a short list of issues identified by the public and which will be addressed within the body of this DEIS. Other issues will be answered in the Restoration Plan.
All issues will be listed in an appendix of the DEIS.

II. Alternatives considered (NEPA process) will describe the planning process to identify and define the alternatives and development of the options considered under each of these alternatives. Criteria to judge proposed actions called options will be described. The section will re-introduce the definition of restoration. The planning process has evolved from an EPA-led committee to a permanent inter-agency appointed task force. The roles of Restoration Planning Work Group (RPWG) and the Restoration Team (RT) will be described. The determination of injury will be described. The process to develop annual work plans and to select funded projects from the hundreds submitted will be described. **Feb ~~22~~** 26

In this chapter each of the alternatives will be described, with no analysis at this point. There will be a number of comparative tables which show lists of injured resources and services, the kinds of options under each of the alternatives, and points where the alternatives differ. Many charts, graphs and tables can be expected. Examples of those comparative tables are included.

A. Preferred action, while required by federal agency guidelines, the Restoration Plan has not yet declared a preferred action. It is assumed the Trustees will do that when they read the first reports of potential impacts and costs of each of the alternatives listed below.

B. Alternative 1 is the No Action or the "null" alternative, which is required by NEPA guidelines, and will be described to continue normal agency management, and to do nothing but monitor natural recovery of the ecosystem and the injured resources. Other than covering the cost of the monitoring program and supporting administration, the rest of the settlement fund would be set aside as an endowment fund. A few sentences will be devoted to such an endowment and how much could be spent annually. The legal basis for the no action alternative will also be given.

The ten-year monitoring plan will be described as a general planning process which has already begun. Specific monitoring projects will be listed here, as examples, to give the reader some idea of what kinds of monitoring projects will be carried out in the field. A pie chart would show the expected distribution of the funds **(is this overlapping the Restoration Plan too much?)**.

C. Alternative 2 will be described as the protection and habitat acquisition alternative. Although the other alternatives

(3-5) will also contain funds for the protection of habitat, Alternative 2 devotes the largest portion (x%) to purchase of land or special designations to protect the natural resources.

All injured resources and services will be addressed, including all stages of recovery, and actions would continue even after recovery had occurred. All effective habitat protection methods will be considered, including refuges, buffer strips, conservation easements, and less than fee simple acquisition. These land saving techniques will be explained. The habitat planning process for "imminent threat" determination will also be described here. This alternative will increase existing recreation and subsistence uses by making more public land available to such uses. A pie chart will show proposed expenditure breakdown.

D. Alternative 3 will present the limited restoration approach, which is the most conservative. This would apply only the highly effective actions for restoration of only those resources with declining populations. All injured services will also be addressed. This alternative will maintain the existing character and uses within Prince William Sound (PWS) and the spill-affected area. It will be applied only to resources not yet recovered. A large proportion (x%) of this alternative will be devoted to habitat protection, because this is viewed as highly effective for restoration. No enhancement will be included. Examples of options which fall under this alternative will be briefly described here to give the reader an understanding of the types of projects which would be funded. A pie chart will show proposed expenditure breakdown.

E. Alternative 4 will be described as moderate restoration which will address restoration of all injured resources and services in the spill area. The alternative will utilize only the highly effective actions to protect all injured natural resources, and will apply only to those resources not yet recovered. The alternative will begin to address the injury to services within the area and could protect or even increase (very limited) the existing human uses in the area. It would include some enhancement options, such as fisheries and subsistence use, and could increase those uses, if it would not change the character of the region. Specific options will be described here to help the reader to understand how the restoration funds would be used. Concepts such as "limited" enhancement are not easy to grasp. A pie chart would show proposed expenditure breakdown.

F. Alternative 5 will be described as the comprehensive restoration plan, in that it will fund practically all reasonable proposals submitted. It too will utilize the most effective techniques to restore or protect, but will also consider enhancement opportunities for the region's growth. All injured resources and services will be included, even those resources considered to be fully recovered or in any stage of recovery.

The comprehensive approach will include injured human services and will include several enhancement options. It will encourage some new commercial uses in the region - applied to recreation, fisheries and to subsistence. Options will be described and can include such developments as roads, cabins, new fishing access, and commercial facilities. A pie chart will show proposed expenditure breakdown.

Cross check Sharon's table against reversed alts

G. Other alternatives considered and rejected and reasons why. This short section will describe the criteria used by the RT and reasons why many of the ideas proposed by the public are rejected for funding. The TC has decided, for example, not to "take" land from unwilling sellers by public condemnation. Many other projects have just been put "on hold" until the Restoration Plan is developed. Basic resource management would continue to be funded out of existing agency funds. Other proposals will be listed in a table with reasons given for their rejection.

H. General analysis of the alternatives will be the first short summary to give the reader the overview of difference between the alternatives, in case they do not go on to read chapter IV. **Feb 26**

1. Natural resources (biologist) which were injured will be listed in a table, by species, with a list of which alternatives and options would address these injuries and try to restore their populations. Another table would list the possible methods of natural resource management and compare these to the proposed five alternatives. A general analysis of the major differences will be outlined, for example, Alternative 1 has all the negative impacts of a major forestry operation over the next decade; alternative 2 provides the most wildlife and fisheries protection, benefits both injured populations and other species whose damage was not documented by the NRDA process. Alternative 5 invites the most growth and development to the region which would be indirectly detrimental to most species now found in the PWS area.

2. Social/cultural, include injured services (socio-cultural)

3. Economic (economist)

III. Affected environment chapter will present a brief overview of the study area, mainly for those in the lower 48 who have never been to Alaska. It will describe the natural and human resources found within PWS and the Gulf of Alaska. It will be organized by physical resources, socioeconomic conditions, and the biological environment. It will describe the area prior to the spill , and briefly describe the injuries following the oil spill and the cleanup. The study area will run from Cordova, southwesterly to include Kodiak and Kenai regions, down to the Gulf and Alaska Peninsula, following the extent of the spill. For socio-economic descriptions, the region may be enlarged to encompass the Anchorage area, as so many of the impacts will be to that economic area.

The description sections will only set the stage for the analysis of impacts chapter to follow later. ~~Feb 26~~ 3/12

A. Physical descriptions (ecologist or geologist) will include an overview of the geographical features of the study area. It will include a short statement on the climate in the region, as well as local currents and oceanography. Habitat types will be described and a profile of these zones will be shown in an illustration. A few pages will be devoted to the changes in water quality the first few months after the spill. Geological descriptions will be included, because the glaciers, volcanoes, and earthquakes are so important in forming the regional setting. A very brief statement will be made about the mineral and energy potential in the area.

B. General description of socioeconomics in affected area (socio-cultural and economist)

C. Biological resource description (biologist) will include a brief overview of the common and injured wildlife, fish and shellfish, timber and forest resources, wetlands and floodplains found in the region. Again, while not comprehensive, it will give an idea of the natural ecosystems which are present in PWS and the injury to those natural resources following the spill. It will present a summary of the NRDA studies from 1989 to 1992. This section will be organized by aquatic habitats and species, followed by intertidal habitats and species, and the terrestrial habitats and species. While the latter were not directly injured by the spill, many of the restoration options deal with protecting upland habitats. The reason these descriptions are included is that one needs to understand the baseline condition, the injury, and the proposed action to restore the resources to the baseline condition as we know it.

IV. Environmental consequences of Restoration Plan will be the most important chapter of the DEIS, in that it will compare the effects of the proposed alternatives on the existing environment, predicting whether those resultant changes will be positive or negative. It will provide the basis for the decision-making between one or another alternative. It will also suggest what if anything can be done to mitigate or offset those predicted negative effects. Generally, in an EIS, this chapter contains many quantitative comparisons between the proposed alternatives. In this document, however, for a first tier programmatic EIS, the impacts will be more qualitative. However, some of the economics, job opportunities, and timber impacts will be quantified wherever possible. **April 5**

A. Socioeconomic (socio-cultural)
   1. Local economy and jobs (IMPLAN results) (economist)
   2. Native subsistence (Sect. 810 ANILCA)

a. uses and needs in the affected environment
b. evaluation criteria and matrix
c. reduced populations or increased competition
d. restriction of access
e. availability of other lands
f. proposed alternative will/will not restrict uses

3. Transportation
4. Recreation/tourism
5. Commercial fishing (fishery biologist)
6. Commercial timber (forester) — draft Sleeson Alt 1
7. Cultural and anthropological
8. Local land use and growth
9. Community facilities
10. Consumers, civil rights, minorities, women

B. Natural Resources (terrestrial and fishery biologists)

This section will address the impacts of the alternatives on the region's wildlife, fish and shellfish, timber and forest land, wetlands and floodplains, water quality, threatened and endangered species, prime agricultural land, rangeland, energy and minerals, as well as wilderness areas. For the wildlife sections, the injured species will be the most important, but other species will also be secondarily affected by some projects, or indirectly as a result of the forest practices or development due to some of the alternatives. Topics such as threatened and endangered species, prime farmland, rangeland, wetlands, floodplains, and wilderness will be considered for legal reasons. The topic of wilderness, for example, will address effects on lands either designated as wilderness by State or federal laws, lands under study for wilderness, or lands which have been identified and are still qualified for wilderness status under the Wilderness Act.

Fisheries will be very important because of the role they play in the development and the economy of the region. While it is still debatable whether or not salmon populations were injured by the spill, many of the restoration options will be directed toward management of the salmonid species. There will be a number of subsistence projects too which will deal with introductions of new shellfish hatcheries into the region.

Timber resources will be addressed and quantified where possible to distinguish between the no action alternative and the others which include habitat protection and acquisition options. The no action alternative will be described as a decade of heavy old growth timber harvest in the region and loss of the wildlife which is dependent upon that type of habitat. Ecosystem effects will also be described, including the impact of continued oil in the intertidal zone food chain.

C. Other indirect and secondary impacts (whole team) on environment is often a section which, though required by NEPA regulations, is just too hypothetical to be applied to the real

world. In this DEIS, however, there are real considerations which will need to be addressed. For example, if no action is taken, then the Native corporations will sell off the remaining old growth timber to Japan. The indirect effects of this decision will be important to PWS ecosystems and species already injured by oil spill stress. If the alternative to encourage recreation growth is considered, there are significant secondary impacts to both the natural resources and the local economy. **April 12**

This section will also discuss the importance of biological research to understanding the oil spill impacts, measuring the recovery of the ecosystem, and providing more employment through the State and federal government funding programs.

needs to be completed

D. Future actions (NEPA process) which would require an EIS/EA will be presented as a list of the options known to date which would require a site specific environmental analysis in the future. The guidelines for EIS versus EA and the typical actions under the federal categorical exclusions will also be summarized. The State does not have these requirements as of this time, but the federal requirement for actions "significantly affecting the quality of the environment," will be covered by the NEPA process. **April 12**

E. Short-term (ten year) versus long-term (whole team) impacts will address the relationship between the short term uses of the environment, and a ten-year spending program, related to the maintenance and enhancement of the long-term productivity of the region. This will include a discussion of the ecosystem productivity, and will also include a discussion of long-term productivity in jobs and the economy. A decade is short term when compared to the predicted recovery periods for some of the injured species, or when one defines old-growth forest as more than 160 years old. Several of the options proposed under the alternatives could also permanently affect the region, particularly those which introduce new species, new salmon runs, new development and roads. Habitat protection would also be discussed as a long-term decision which would remove productive timber from future exploitation. **April 12**

F. Summary of probable unavoidable adverse impacts (biologist and socio-cultural) will present a short summary of the negative impacts which would occur from each of the alternatives, if they were selected. These impacts would be in addition to the damage already done by the oil spill and the cleanup. Many of these findings will be presented in table format comparing the alternatives to generic resource categories, such as birds, forests, minerals and subsistence life style. **April 15**

G. Irreversible and irretrievable commitment of resources (whole team) will summarize the potential for closing out resource management options in the future. For example, wilderness

designation would not close any options, because an act of Congress could change decisions made in 1993 or 94. However, a decision to mine mineral resources now or to harvest old-growth forests would irreversibly commit those resources to present day use; they would not be available to future generations. This discussion will also include the species of PWS which are exhibiting population declines and which are already listed as threatened or endangered in other parts of their ranges. **April 15**

H. Economic Impact of Settlement (economist) **April 1**

I. Impacts on publicly-owned park land, refuges, recreation will be discussed in chapter IV, but will be summarized here in table format (NEPA process or forester). For alternatives which essentially do not change the character and uses in PWS, there will be no major effects on these public resources. Alternative 2, on the other hand, would expand the amount of lands available for parks and refuges. Alternative 5, by increasing the recreational uses in the region, would secondarily impact these existing parks by increasing the demand for facilities with increasing numbers of visitor. Wilderness quality of life issues would also be affected by more visitors.**April 5**

J. Cumulative impacts (whole team) of Restoration Plan will discuss the Plan as it relates to additive effects as the result of numerous changes, environmental effects from past, present and future land use changes in the region. Within this section, the environmental effects of continuing sublethal oil spill damage, the high probability of other oil spills, the increased pressure for resource exploitation, more roads and development in the region, and proposed new marina development at Whittier are just examples. While a billion dollars added to the rural economy of the region may me significant, the impact will be only one of many changes within a growing economic zone. **April 12**

1. Social/ Cultural (sociocultural)
2. Economic (economist)
3. Physical (ecologist or geologist)

4. Biological cumulative effects (biologist or ecologist) will address the food chain impacts and timber harvest impacts as both direct effects, and the indirect effects of development, including commercial and recreational, on the natural resources in the region. For example, food chain effects before the spill indicated some populations dependent upon forage fish were declining. After the spill the contaminated food sources caused another source of stress. Will increasing salmon populations cause more declines in small food fish? The impacts of selling timber versus habitat protection will also be considered in light of US Forest Service policy and Native Corporations goals to maximize timber harvests over the next decade.

Matrix comparison of alternatives and impacts will be presented as a summary series of tables which show one alternative at a time, list all impacts on each resource - both social and natural. Then a second series of tables will compare all of the alternatives against one particular impact area. **March 15**

K. Unresolved issues (NEPA process) will list all of the issues identified in Chapter I, or even some which are discovered in the impact analysis, which remain unresolved at the time of publication. It may be as simple an issue as what will be the future prices paid for timber harvested out of the region. It may be political, such as which agency will manage the land purchased under the protect habitat alternatives. It may be an issue being debated among the Trustees, such as will they condemn private lands if necessary? This section alerts the decision-maker to all the points left to be resolved. The DEIS will not settle them all. **April 19**

V. List of preparers (editor) will present a short one paragraph name, title, highest degree earned, what section(s) he/she wrote and what experience or qualifications the author has to write the DEIS. This not only gives credit to writers but assures the public that qualified people wrote the impact analysis. **March 15**

Example: Sharon Saari, Master of Forest Resources and Certified Wildlife Biologist, wrote Chapters I and II and the biological-physical sections of III. She has 23 years of environmental consulting experience, has authored the Environmental Impact Data Book and 15 EIS/ES's for federal projects. She worked on the Exxon Valdez Natural Resource Damage Assessment process and restoration planning from 1990 to 1993.

VI. Distribution and review (NEPA process) of Draft Environmental Impact Statement will be a discussion for all the people who received the DEIS for review. This will include the local, federal and State agencies who routinely get EISs, the Public Advisory Group, the Trustee Council, Restoration Team, individuals who wrote in and requested copies, local libraries for review, Native Corporations. (Note - check with OSPIC and USFS for mailing lists. Sue Brown now has the scoping invitation list.) **March 21**

A. Scoping (NEPA process) will summarize the scoping process used for this DEIS. It will include a series of ten meetings held throughout the PWS region by the RT. It will include the mailing done this fall inviting people to the scoping "open house" held in Anchorage. It will include the results of those meeting to identify issues to be addressed by the EIS. **March 21**

B. Trustee Council (writer) will present the role of the Trustees stated from the settlement and list of the current members (the decision-makers). Refer to Appendix BB. **March 7**

VII. Public comments and coordination (NEPA process) will present a brief summary of the steps taken, starting with the Notice of Intent, scoping, the appointment of the Public Advisory Council (PAG), review of the DEIS and public comments, all steps to involve and inform the public of the decision-making process. This is one of the major goals of NEPA - to involve the public - and this section says how we did that. **March 7**

A. Public Advisory Group role (writer) will be briefly summarized.
B. Public Meetings will be listed with dates and attendance numbers to define issues.
C. Advertisement and Public Announcements will be copies of those documents.
D. Notice of Intent Published by USFS will be copied from Federal Register.
E. Cultural Resources Review **?????? May remove or put the archaeological stuff her ???** KS

VIII. References (editor) will be alphabetized by author, list all publications, or unpublished data or interviews, which were cited in the DEIS. It will be a shorter list that the current bibliography. **April 26**

IX. Index will be prepared using the Wordperfect feature according to the USFS guidelines. **(Jackie Glover-Brown?) April 26**

X. APPENDICES (**All completed by April 26**)

AA. Issues (NEPA process) identified by the public will present a list of all the issues identified, even if they were not all addressed in this DEIS.
BB. List of Agencies (editor) and Persons to Whom DEIS Was Sent, and Letters Received from Agencies will be the lists used
- Other State and Federal Agencies will be a list of names of those involved in the Restoration Plan.
- Natives, Villages, Corporations will be a list of those who reviewed the DEIS.
- Local Communities and Boroughs will be a list of mayors who reviewed the DEIS.

CC. Comments and Public Responses (NEPA process) to DEIS will be presented. For the Final EIS, this section will also present the remarks and comments from the public on the DEIS and public opinions on the alternatives under consideration. Some EIS's copy the whole letter, and address or answer it on the facing page. Others group comments into similar categories and then answer it once. This DEIS will wait to see how many and what types of responses are received, and await the input from the Public

Advisory Group. The proposal scope of work did not include the public participation. The EIS should only answer technical questions, and refer the political ones back to the TC or RT. **(Section not until the Final EIS, probably in August)**

DD. Lists (editor) of Trustee Council, Restoration Team, Public Advisory Group will include mailing addresses. (may want to move to BB)

EE. Section 810 Evaluation on Subsistence (socio-cultural)

1. Evaluation process
    a. evaluate effect on subsistence uses and needs
    b. notice given
    c. hearing in vicinity
    d. determining significant restrictions
    e. steps to minimize adverse impact
2. Proposed action on federal lands
3. Affected environment relative to subsistence uses
4. Uses and needs evaluation
    a. list of criteria used
    b. potential to reduce populations
    c. restriction of access
    d. increase in competition
    e. availability of other lands / waters
5. Alternatives considered
6. Findings

FF. Glossary (editor) of terms and acronyms will be defined.

GG. Lists of species (editor) will include the common name, the Latin Genus and species, the general habitat where found.

HH. Maps (oversized maps will be folded into a Pocket) optional, but need to decide on map format **by mid March!**

III. AFFECTED ENVIRONMENT

B. General Description of Affect Communities
An descriptive overview of the 18 affected communities will be developed. Each community will be identified and briefly described.

C. Prince William Sound and Affected Area

1. Socioeconomic and Subsistence
The socioeconomic and subsistence characteristics of the affected communities will be identified and discussed, pre-oilspill, during cleanup, and post-spill. Specific topics to be addressed include:

a. Demographics
A profile of each community will be developed based on 1990 Census data

b. Land Use
Largely, local land use planning or regulation is not available in PWS. Land use will be described and discussed relative to State and Borough information. Local community information will be addressed where it is available.

c. Transportation

d. Recreation/Tourism

e. Commercial Fishing

f. Commerical Timber

2. Cultural and Archaeological Resources
The cultural and archeolgocical resources of the study area will be identified and discussed from historical and current perspectives in terms of pre-spill, cleanup and post-spill impacts.

3. Biological Impacts

4. Physical Impacts

IV. ENVIRONMENTAL CONSEQUENCES OF RESTORATION PLAN

A. Socioeconomic
The impacts of the Restoration Plan alternatives on the social, cultural, economic systems of the affected communities will be identified and discussed.

Mike K

1. Local economy and jobs
The local economy and labor markets for the affected communities will be described based on 1990 Census data and IMPLAN tables, relative to the Restoration Plan Alternatives.

2. Native subsistence (Sec 810 ANILCA)
Native subsistence resource use patterns will be identified and decribed relative to the Restoration Plan Alternatives.

   a. Uses and needs in the affected environment
   The uses of subsistence resources and the needs of subsistence harvestors will be described and evaluated in light of the Restoration Plan Alternatives.

   b. Evaluation criteria and matrix

   c. Reduced populations or increase competition
   Restoration Plan Alternatives relative to their impact on reducing subsistence resource populations and/or increasing competition for subsistence resources will be discussed.

   d. Restriction of Access
   The Restoration Plan Alternatives will be discussed regarding their impacts on restricting the subsistence resource access of Alaska Natives.

   e. Availability of other lands
   The Restoration Plan Alternatives will be decribed with regard to the availability of other lands for subsistence harvesting.

   f. Proposed alternative will/will not restrict uses
   The Restoration Plan Alternatives will be evaluated with regard to their potential for restricting Alaska Native use of subsistence resources.

3. Tourism
4. Recreation
5. Commercial Fishing
6. Commercial Timber

7. Cultural and archaeological resources
The Restoration Plan Alternatives will be reviewed with regard to their impact on cultural and archaeological resources over the short and long term.

8. Local land use and growth
Most of the area affected by the Restoration Plan Alternatives is rural and remote. Information will be collected and evaluated regarding the potential short and long term impacts on local land use and growth relative to the Restoration Plan Alternatives.

9. Community facilities
The majority of the affected communities exhibit little in the way of community facilities or infrastructure. The Restoration Plan Alternatives may require communities to invest in the development of facilities and infrastructure. This potential and its impact on the communities will be discussed.

10. Consumers, civil rights, minorities & women
The general impacts of the Restoration Plan Alternatives on specific segments of the study area will be addressed.

J. Cumulative Impacts of the Restoration Plan

1. Social/Cultural
The cumulative impacts of the Restoration Plan Alternatives will be identified and discussed with regard to the social and cultural characteristics of the affected communities and study area.

VI. DISTRIBUTION AND REVIEW OF ENVIRONMENTAL IMPACT STATEMENT

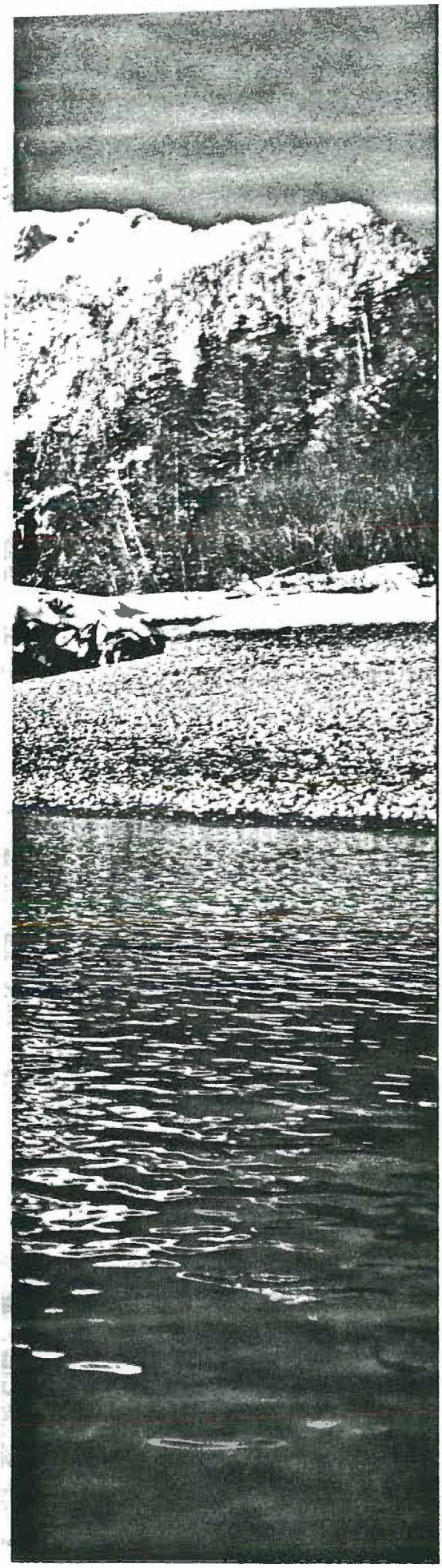
C. Native & Village Corporations
The EIS will be distributed to the Native & Village Corporations for review and comment. A mailing list will be developed which identifies the appropriate individuals and mailing addresses for Native & Village Corporation review.

D. Local Communities and Boroughs
The EIS will be distributed to all affected local community and borough officials for review and comment. A mailing list will be developed which identifies the appropriate individuals and mailing address for local community and borough review.

VII. PUBLIC COMMENTS AND COORDINATION

E. Cultural Resources Review
Responses relative to the cultural and archaeological resources impacted by the Restoration Plan Alternatives will be recorded and reviewed.

X. SECTION 810 EVALUATION ON SUBSISTENCE



RANDY BRANDON/ALASKA STOCK IMAGES

HIDDEN DAMAGE

THE COAST GUARD HAS DECLARED THE CLEANUP OVER. THE SPILL WORKERS AND MEDIA TROOPS ARE GONE. AND PRINCE WILLIAM SOUND LOOKS AS STUNNING AS EVER. BUT A NAGGING QUESTION REMAINS: HOW MUCH HARM DID THE EXXON VALDEZ SPILL REALLY DO?

Almost four years have passed since the snow falling in Herring Bay landed on the shiny, black crude, each flake holding its white crystalline form, before melting into the filthy sea.

Four years ago, ducks and cormorants that landed in this corner of Prince William Sound died and became dark lumps, floating unnoticed in the oil until they bumped up against the hulls of passing boats. On a beach, a sea otter tried furiously to rub the stinging oil off its face in a snowbank. Men worked wild-eyed, around the clock, to skim oil off the water, their faces, hands and orange jumpsuits coated black. They made little progress against the 11 million gallons of North Slope crude spilled March 24, 1989, by the tanker *Exxon Valdez*.

Today, Herring Bay is beautiful again. The water is so clear that boats floating on it seem to hang in the air. The mountains of Knight Island rise from a bright mirror of water as if they were earth's huge, muscled shoul-

BY CHARLES WOHLFORTH

LEFT: *Today Herring Bay is beautiful again but appearances can be deceiving.*

ders. Among the mountains, eagles soar. But the damage is here, just invisible. Herring Bay is not as it was before the oil came.

The Sound's web of life has only just begun mending itself, according to a $100 million state-federal science project still in the process of being revealed. Plants and animals from popweed to killer whales still lack their former abundance, and some have only just begun to reappear.

"We have some species that aren't recovering," says Dave Gibbons, director of the governments' study and restoration project. "We have some areas that are recovering quite nicely. Like the killer whales. There was a pup born this year."

Exxon officials dispute that any whales died because of the spill, and say that all species are recovering. They say the ecosystem as a whole is OK because no species is in danger of disappearing entirely. And they point out that wildlife is abundant—at least compared to other areas of the world.

But a lot is missing. The scientists say it one way, with statistics on behavioral changes, mortality and declining abundance of wildlife. Others, like Cordova bookstore owner Kelly Weaverling, say it another way. He thinks the Sound is full of ghosts.

If there were a study on how the spill changed human habitat and behavior, Weaverling would be a prime specimen.

Weaverling used to kayak in Prince William Sound four months each year, learning each fold of the interlocking fiords. Each summer he collected litter from the beach to take back to civilization in his kayak. He lived in Anchorage, but Prince William Sound was paradise, and he wanted a life that revolved around it. So Weaverling and his wife moved to Cordova and bought a bookstore. Not much later, the *Exxon Valdez* hit Bligh Reef.

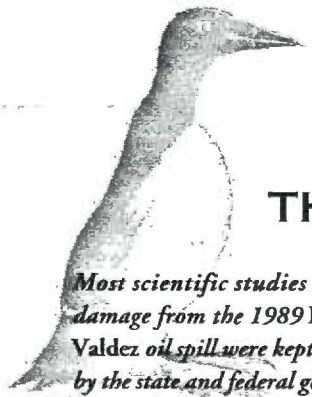
I was with him almost four years ago when Weaverling first saw the oil. Night was falling when we arrived in Herring Bay aboard a big tour boat chartered by Exxon to support Weaverling's hastily organized, quixotic bird rescue operation. In the failing light, it was hard to see that the water's undulating surface was a black

NATALIE FOBES

LEFT: *Cordova Mayor Kelly Weaverling: "You can run but you can't hide."*

RIGHT: *Dan Talbert and an army of workers blasted off beaches with scalding water.*

ROY CORRAL



THE SPILL'S TOLL—AND WHAT MIGHT BE DONE

Most scientific studies of the damage from the 1989 Exxon Valdez ***oil spill were kept secret by the state and federal government until last year. Here's a summary of findings on a few key species by the*** Exxon Valdez ***Oil Spill Trustees, a state-federal group charged with restoring Alaska's damaged natural resources with money won from Exxon Corp. The trustees are considering each of the restor-ation options listed.***

ALISSA CRANDALL/ALASKA STOCK IMAGES

SEA OTTERS

FOUND DEAD: 1,011; Estimated dead: 3,500-5,500.
DAMAGE: Oil killed otters by destroying the insulating quality of their fur, and by damaging them internally when they ate it. Otter numbers have decreased by 34.6 percent in oiled areas. The deaths of prime-age animals and weaned pups have increased compared to areas not oiled. Researchers believe the continuing harm is due to persistent oil contamination of otters' favorite foods, mussels and clams.
RESTORATION: 193 otters were "rehabilitated," after being oiled, for about $80,000 each. Later research showed most died soon after release, and the rescue may have done more harm than good. Current plans to aid otters center on removing oil from mussel beds where they feed.

KILLER WHALES

DEAD: Unknown
DAMAGE: A number of well-studied killer whales in Prince William Sound disappeared after the spill. Their death rate tripled. Females with calves were among the whales that disappeared, changing the whales' social structure as other pod mem-

slick of oil. In the next day's morning light, there was no avoiding it.

Weaverling concentrated on his work, planning the animal rescue that was plainly futile amid the devastation around us. He showed no emotion until I asked him about his reaction. Then tears rolled down his sun-creased cheeks. "It's like you come home and everything you own is totally defiled," he said, and his voice stumbled into inarticulate profanity.

Last summer I met him again, sipping coffee at a table in the cafe section of his bookstore in Cordova. He still wore his wiry hair, now slightly graying, in a ponytail. He smoked hard, breaking the filters off his Camel cigarettes. A lot had happened to change him since. He had traveled the nation and shared the lecture stage with the likes of actor-environmentalist Ted Danson. He became mayor of Cordova. And he stopped visiting places like Herring Bay in his kayak.

"It's not easy to have fun in a place that's so full of spooks and haints," he says. "I used to wonder why my uncles could never forget World War II, and why my friends could never stop thinking about Vietnam after they'd been through that. Well now I understand, because it's the same way for me in the Sound. You can't have fun going back to a battlefield."

Before the spill, he says, "We thought we could move here and be totally free of the oil industry and totally safe. We'd retire to a quiet life of book-selling and art. Then the spill happened, and I realized, you can run but you can't hide."

The spill made Weaverling a minor celebrity and small-town politician. Now his words are better chosen, almost practiced. He's still authentic, but now it's as if he knows it, and knows how to use it.

When I keep asking him if he's changed, he keeps denying it.

"Nothing's changed," he finally says, his tone almost regal. "I have widened my sphere of responsibility."


ROY CORRAL

L. J. Evans, trustee spokeswoman, defends the pace of restoration efforts.

On a summer morning, Bay of Isles on the east side of Knight Island is so silent I can almost hear the tidal lagoon mud drying under the sun. I can't decide why the silence is so heavy until I realize I hear no birds.

The beating of a helicopter's blades fades in from

bers cared for the young. A direct relationship to the spill could not be shown, however.

MURRES

FOUND DEAD: 22,000; Estimated dead: 300,000.
DAMAGE: Slow-breeding common and thick-billed murres protect their young by nesting in large colonies all at the same time. After the spill so many adult birds were killed—up to 70 percent in some colonies—that the colony lost its synchronized breeding, leading to complete reproductive failure in following years. Researchers estimate the colonies could take decades to recover.
RESTORATION: Human presence could be eliminated near murre colonies during nesting to increase the breeding success. Decoys and recorded calls could be used to enhance murre social behavior, and ledges could be added to colonies to improve nesting.

HARBOR SEALS

FOUND DEAD: 19; Estimated dead: 200
DAMAGE: Seals were killed by direct contact with oil, and developed brain lesions and


NATALIE FOBES

lethargic behavior, possibly from eating oil. Harbor seal numbers in Prince William Sound, already declining by about 10 percent a year in the mid-1980s, fell another 35 percent in the year after the spill in areas hit by oil. The population in unoiled areas dropped 13 percent.
RESTORATION: Keep people away from seal haul-out areas to reduce harassment that costs seals energy.

HARLEQUINS

FOUND DEAD: 200; total sea ducks found dead of all varieties, 2,000.
DAMAGE: Harlequin, goldeneye and scoter ducks feed along the shore. Researchers believe they are still picking up oil from contaminated food, and harlequins have lost body fat and failed to reproduce. Researchers could not find nests

the distance. Suddenly the aircraft roars in, low over the trees. The pilot circles and hovers down into the beach grass. Three scientists emerge with coolers and knapsacks, like jet-set picnickers.

Biologists with the National Marine Fisheries Service's Auke Bay Lab, they are looking for metal survey stakes left earlier when taking samples of mussels and mud. So many scientists drove so many stakes into the Sound's beaches, explains their leader, Pat Rounds, that they have become a hazard to small-boat navigation, and officials and small boaters have been removing them. Now Rounds can't find one of her stakes.

The scientists study their detailed map of Death Marsh, named by spill workers after what they saw here in '89. Several spill-inspired names have stuck in the Sound and Gulf of Alaska. Grungy Cove was a slimy beach in the Gulf. At Quayle Beach, Vice President Dan Quayle inspected the oil from a boardwalk specially built for his visit.

Oil settled on Death Marsh like a smothering blanket four years ago. Despite careful work to clean it up without trampling the delicate marsh and driving the oil in deeper, oil remains in the mud, its petroleum odor mixed with the smell of rotting seaweed.

Rounds and her colleagues place metal grids in their measured spots, then count and collect the mussels. In the search for environmental contamination,

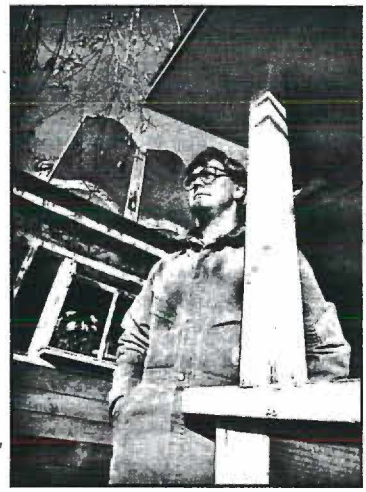
in oiled areas, and found no new broods of harlequins until two years after the spill, when they found only one.

RESTORATION: Cleaning oiled mussel beds could help the ducks. Buying threatened habitat could protect ducks from further damage. Reducing or changing duck hunting seasons could allow resident populations to recover.

FUCUS (popweed)

DAMAGE: Fucus, the seaweed known locally as popweed, supports much of the life of coastal Alaska. Hot-water cleanup

Did The Cleanup Go Too Far?



ROY CORRAL

Piper: "Society is not honest with itself . . ."

ERNIE PIPER IS PAINSTAKINGLY transforming his suburban Anchorage tract house into a 19th century New England colonial. Friends are impressed by his patience but, he tells them, picking out a tablesaw blade is never as difficult as his old job of deciding which habitat would die and which live, as a special assistant to former Gov. Steve Cowper in the 1989 oil spill.

Those decisions began from the opening hours of the spill: Whether to use chemicals to disperse the oil; whether to bulldoze beaches where oil was buried in the gravel; whether to leave hardening oil or blast it off with hot water. Piper still defends the state's decisions, but the latest scientific studies suggest that the beach cleanup may have done more harm than good.

A 1991 follow-up study by the National Oceanic and Atmospheric Administration's Hazardous Materials Response Branch, perhaps the world's most sophisticated oil spill agency, found that beaches not cleaned recovered faster. The oil did damage, NOAA said, but the hot-water cleanup did more. Did Piper and his colleagues make the wrong call in 1989?

Piper says NOAA's study didn't consider all the issues surrounding the cleanup like the economic impact on the fishing industry. The spill, he explains, was "a public administration problem. It was not an oil pollution problem."

When oil hits a shoreline, it does not kill everything. Many of the hardy organisms in the "intertidal zone," which is constantly buffeted by waves, ice and sun, can cope with oil. But once the oil dries, removing it requires hot-water blasting, which kills everything on the beach. Afterward, hot-water proponents say, the shore will be relatively cleaner for animals to recolonize.

Exxon officials like Frank Iarossi and cleanup manager Otto Harrison insisted their cleanup would remove the oil from Alaska's shores and leave the Sound clean. When they finally quit last summer, they said, that's exactly what they had done. In fact, the greatest good to come from Exxon's $2 billion cleanup may be in the lessons it taught on what not to do the next time a thousand miles of coast is painted with spilled oil.

While Piper defends the cleanup, he says it went too far and hit too many shores. But he blames the public and Exxon for their need to believe the environment could be protected from the spill's damage.

"Society is not honest with itself about what industrial development means," he says. "The public expects there is, somewhere, somehow, a way of doing it safely, with no real negative impact. Society is unrealistic as regards its expectations. And it goes back to technology. The idea is that there's a solution to every problem, and somebody just needs to do the math."

mussels collected around the Sound are a scientist's best friend. Like the old miners' caged canary, they offer an early warning of hidden dangers. Back in the laboratory, tests on their flesh and the mud will gauge the severity of the pollution still in Death Marsh.

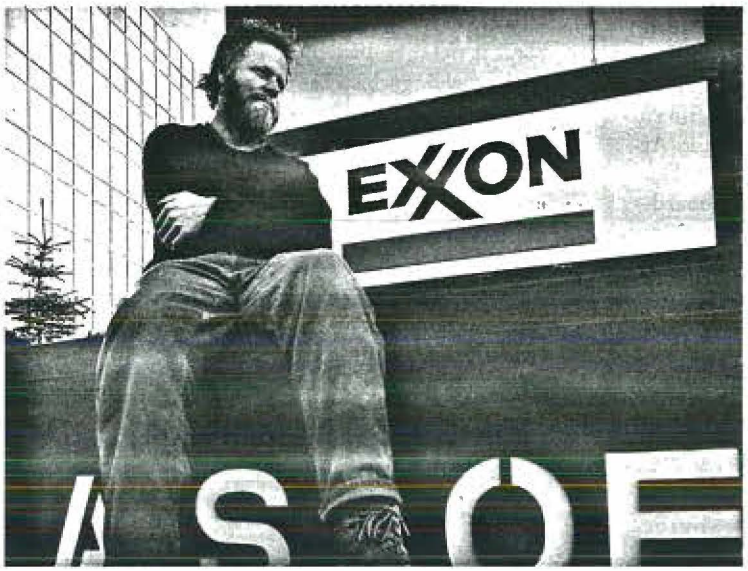
In 1991 researchers in the Sound discovered fresh, black oil under the mussel beds. The explanation was simple: Cleanup workers were told to avoid mussel beds rather than wipe them out by digging them up to remove the underlying oil. It turns out mussels beds were perhaps the one place that should have been cleaned. Mussels form a vital link in the food chain. Their ongoing oil contamination, according to the state-federal study, appears to be poisoning the otters that eat them. Clown-colored harlequin ducks, black oystercatchers and river otters also feed on mussels from the dirty beds, and show similar effects.

Otters are still growing sick from *Exxon Valdez* oil, according to the state and federal governments' research. Researchers were still finding dead 2- to 8-year-old otters two years after the spill. Usually, very few otters that age die. The number of otters has dropped by 34.6 percent in oiled areas. Meanwhile, an abnormally small number of otter pups is surviving its first year, probably because the young feed more heavily than adults on mussels, which tend to be contaminated. When scientists draw blood from otters, they find it mixed with oil byproducts.

Rounds' work is part of an $874,000-a-year study to determine the link between the oiled mussel beds and the animal illnesses, and to find out if digging narrow trenches through the mussel beds will allow the tide to clean out the oil. The study won't be complete until 1994, but workers may begin trenching the mussel beds this coming summer.

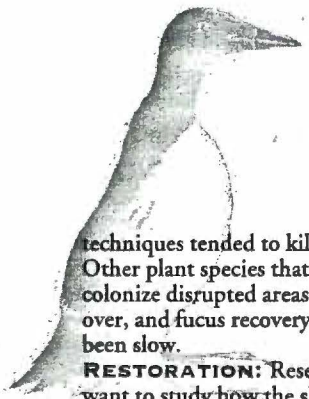
The study, like dozens of others on the spill, is funded from the environmental restoration money the state and federal governments won from Exxon in an October 1991 settlement. So far, more than $100 million has been spent on study, according to the project's director, Dave Gibbons of the U.S. Forest Service. But none has been spent on actual restoration work.

Critics of the program say spending so much money to study restoration options that could cost rela-



ROY CORRAL

Marine advisory agent Rick Steiner: "I've become more cynical."



techniques tended to kill it out. Other plant species that tend to colonize disrupted areas took over, and fucus recovery has been slow.

RESTORATION: Researchers want to study how the slow-to-recover fucus could be aided.

BALD EAGLES

FOUND DEAD: 151; Estimated dead: up to 580.

DAMAGE: Eagles died from eating oil-tainted carrion after the spill. Near oiled beaches, many failed to reproduce the year of the spill, and to some extent the next year. However,


TOM WALKER

about 4,000 eagles live around the Sound alone, and their behavior appears to have returned to normal.

RESTORATION: Curtailing logging would protect eagle habitat.

MUSSELS

DAMAGE: Mussel beds were one of the few places left untouched by the cleanup, but they may have been the most important place to clean. In 1991, researchers found fresh oil still trapped under the thick mat of mussel beds' anchoring strands. Harlequin ducks, black oystercatchers, river otters and juvenile sea otters probably are receiving doses of fresh oil from eating these mussels.

RESTORATION: A study on mussel bed damage won't be done until 1994, but officials hope to begin cleaning the beds this summer. They

plan to dig trenches in the beds to help the tide flush out the oil.

RED SALMON

DAMAGE: Because of fears that oil contamination would

tively little to actually implement doesn't make much sense.

The mussel study is one of the easiest to justify because of the complexity of the problem and the need to make sure the cleanup work does more good than harm. But Alaska Attorney General Charles Cole, one of the six government trustees allocating the money, has challenged other projects that seem intended to simply bankroll government bureaucracy.

For example, when the U.S. Fish and Wildlife Service asked for money for a study to determine if people should be kept away from Gulf of Alaska murre colonies to aid the birds' recovery, Cole suggested simply keeping the people away and saving the money. A $316,700 "restoration" project was approved for 1992 anyway, comprised of photographing and counting birds in the colonies.

For the scientists in Bay of Isles, the sheer fascination of the work seems enough, whether or not it helps the area in the short run.

"It's the first time some of these areas have even been looked at," Rounds says.

The tide comes in and, after collecting their samples, the scientists reboard the helicopter and take off. The lagoon again falls silent. Except for the footprints and stakes they leave behind, and the few mussels and jars of mud they take with them, the scientists have done nothing to harm Death Marsh, or to help it heal.

Consider two more specimens of how the spill changed human behavior and habitat: Rick Steiner and L.J. Evans.

Steiner was in Cordova when the oil spilled, running the fisherman's version of the agricultural extension service in Cordova as the agent for the University of Alaska's Marine Advisory Program. He and a few friends soon realized that Exxon had done nothing to protect the Sound's fisherman-built pink salmon hatcheries.

"When I hear the public saying we're not doing enough, it just isn't fair," says the government's L.J. Evans. "You need to know what's damaged before you know what needs to be restored."

They told Frank Iarossi, president of Exxon Shipping, about the problem, and he put them in charge of saving the hatcheries. Steiner put together a navy of fishing boats and called all over the world to get floating booms to rig in front of the hatcheries. By the time the leading edge of the oil arrived, the hatcheries were safe. It was the cleanup's only notable success.

In 1989, Evans was teaching photography at Prince William Sound Community College in Valdez. Active in that town's small art scene, she had become involved in environmental causes after her husband started the Prince William Sound Conservation Alliance.

When the oil first hit, Evans went to work for the bird rehabilitation center in Valdez. Then she got a job as a clerk-typist at the Department of Environmental Conservation, the state agency in charge of the spill response. Within two weeks she had been promoted to public information officer, explaining the spill to the national press.

Steiner moved on to the next phase of the spill, realizing that Exxon would likely be forced to pay huge damages. He wanted that money spent to head off what he considers an environmental threat equal to the spill: clear-cut logging of Prince William Sound's old-growth forests.

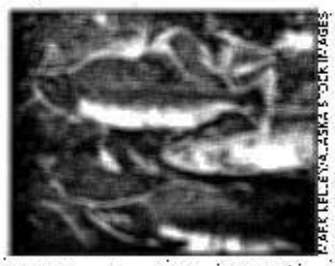
Forests above shores hit by the spill were already scheduled for cutting by Native corporations that own land throughout the Sound. Steiner began lobbying for funding to buy the timber and stop the [CONTINUED ON PAGE 86]

ruin fish markets, the Alaska Department of Fish and Game closed commercial red salmon fishing in Cook Inlet and Kodiak in 1989. The closure meant too many fish made it up-river to spawning lakes. With too many spawning fish, few smolt survived, and Fish and Game predicts that this year and next total closure of the Kenai and Red lakes systems may be needed to rebuild the run.

RESTORATION: New streams could be stocked with hatchery smolts to boost fishing while traditional runs recover. Reducing logging could also help protect rivers and lakes.

PINK SALMON

DAMAGE: Although salmon from hatcheries in Prince William Sound returned in great numbers the first two years after the spill, pink salmon runs from wild streams were badly damaged by oiling. Wild runs had already been in decline in the Sound. More eggs died, and fewer returned because of the spill. Larvae from heavily oiled streams showed such abnormalities as club fins and curved back bones.



PARK RELEVA, ALASKA STOCK IMAGES

RESTORATION: Because hatchery and wild stock pinks return at the same time, wild runs damaged by the spill may be overfished by fishermen working hatchery runs. New hatchery runs could be created earlier in the year so that fishing could continue without affecting oil-damaged runs. Streams also could be protected from damaging erosion by reducing logging.

ROCKFISH, HALIBUT AND OTHER FISH

DAMAGE: Liver lesions were found in increased numbers in rockfish from oiled areas.

Oil by-products were also found in the bile of halibut, rock sole, yellowfin sole, flathead sole, Pacific cod, Dover sole and sablefish.

In pollock, petroleum by-products showed up in fish taken 500 miles from the site of the spill.

RESTORATION: Begin managing rockfish to establish a sustainable harvest level.

HIDDEN DAMAGE

Continued from page 51

logging. He argued that the area, already hammered by the oil spill, couldn't stand the second blow of being stripped of its trees. Saving the trees, he said, would help preserve habitat for birds harmed by the spill and prevent erosion that would further hurt salmon and trout runs.

Steiner again called on Exxon's Iarossi to negotiate a legal settlement that would bring quick money to his project. That effort fell apart in 1990, and trees began to fall.

Evans spent much of the summer of the spill escorting reporters and dignitaries in the Sound. In October 1989, on a visit to Death Marsh, she found the year's last dead, oiled otter. She remembers crying over the otter with the group she was guiding that day.

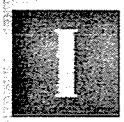
By the following winter, the state moved its spill offices to Anchorage, and Evans went along, becoming the spill response center's public relations director. The dead animals, including, possibly, the otter she found, were stored in freezer vans in Anchorage—evidence for the state and federal suits against Exxon.

But in 1991, the state and federal governments settled their suits against Exxon, and the firm began to pay $1 billion in restitution and fines under a 10-year plan. Environmentalists complained that the long payout made the money only worth about half its face value. And, they said, state studies on the spill's economic impact—kept secret to this day—allegedly showed that Exxon should have paid many times more.

Steiner favored the deal, however, because, as government lawyers argued, it would provide money quickly to protect spill-damaged coastal areas already falling to the chain saw. His reaction changed, however, when the government trustees handling the settlement fund failed to use the money for buying areas set for logging. Instead, the trustees took $57 million of Exxon's $90 million first-year installment to repay their own agencies for studying the spill and litigating the case. Most of the rest went for more studies and administration of the new restoration bureaucracy.

Last spring at the urging of environmental, fishing and timber interests, the Alaska Legislature passed a bill to move ahead on buying key timber habitat with $50 million in Exxon fines. But Gov. Walter J. Hickel vetoed the measure.

Hickel, who pushed for a quick settlement with Exxon, now favors putting the money in an interest-bearing endowment instead of spending it directly. Why did the government lawyers seek a fast settlement with Exxon if they didn't plan to spend the money? The trustees' restoration director, Gibbons, says he doesn't know why the attorneys said there was a rush to settle.



have become more cynical, more bitter, and more angry over the years," Steiner says of his experience. "And it's not just that the oil spill happened, but that nothing constructive is going to come out of it. I've just been amazed at how bad our federal government can be. And, you know, I don't want to be spending my life writing letters to federal judges, or standing up yelling in trustee council meetings."

Evans, who now works as the trustees' public relations person, says she still believes in the process. She and the rest of the oil spill trustees' staff work for six different state and federal agencies, each of which has veto power over what the full group does. So far, critics charge, the group has done almost nothing but study and discuss the problem and fund scientific efforts to be carried out by the trustees' own agencies.

"When I hear the public saying we're not doing enough, it just isn't fair," says Evans. "You need to know what's damaged before you know what needs to be restored. They have produced several documents that represent lots and lots of work."

Besides, she says, "You can't go out and willy-nilly buy land."

For her part, Evans has a job on a project that will likely last decades. Yet, like many others whose lives were transformed by the spill, she isn't entirely happy with the outcome.

"It was supposed to be a couple of months, and then it was going to be over the winter," she says. "And now here it is three and a half years later, and I'm still working on this thing, this disaster. I am really kind of ready to do something else." ★

Anchorage free-lance writer Charles Wohlforth covered the 1989 Exxon Valdez *spill for the* Anchorage Daily News.

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Anchorage Daily news 2/1/93

Scientists bring ideas to oil-spill symposium

By NATALIE PHILLIPS
Daily News reporter

Deep below the surface, in the genes of fish, in the brains of birds and the livers and kidneys of sea otters, the Exxon Valdez oil spill played havoc. And finally, scientists can talk about it.

- Herrings were born mutants with twisted spines and deformed jaws.
- Harlequin ducks quit reproducing.
- Murres began nesting a month late, meaning their immature offspring are being swept off their cliffside nests and washed away by the early winter storms.
- Perfectly preserved, toxic crude oil remains trapped under mussel beds, in some places more than a half-foot deep.
- And still unexplained is: Did the spill have anything to do with the disappearance of 13 of the 36 killer whales in Prince William Sound's well-studied AB pod? And why have the dorsal fins of two males collapsed?

Scientists have been prohibited from discussing these and other findings for the past four years because of the federal and state governments' lawsuits against Exxon and Alyeska Pipeline Service Co. But with these suits recently settled, they are now free to talk.

In a special edition of "Alaska Wildlife," published by the state Department of Fish and Game this month, many of the findings are spelled out. And Tuesday, nearly 500 scientists and lawyers from across the country will gather at the first public forum on the spill.

The first day of the four-day symposium at the Egan Civic and Convention Center is free and designed to give the public an overview of the spill's impact. It costs $110 to attend the next three days of seminars, which are more technical and geared for scientists. More than 100 papers will be presented during the conference.

"This is it," said state biologist Sam Patten. "Everybody is going to put their cards on the table. Everything is going to come out."

Though invited, Exxon scientists won't be there. An Exxon spokesman said last fall that company scientists will present their work at a conference this spring in Atlanta.

The governments' chief spill scientist, Robert Spies, said Exxon might not agree with some of the governments' findings.

"You are always going to get different stories," said Spies. "The resource people are going to paint

Please see Back Page, OIL SPILL

OIL SPILL: Symposium an outlet for information regarding Sound disaster

Continued from Page A-1

a black picture; Exxon will paint a white picture."

It appears most of the harm was short term; not a single species was lost because of the spill. Most scientists said they expect all the species to recover and genetic damage to be mitigated within a few generations, leaving the spill just a blip in the Sound's evolution.

Fishermen and environmentalists still have lawsuits pending against Exxon for the damage caused when the Exxon Valdez ran aground, dumping 11 million gallons of oil into the Sound. And some of the study findings may end up as evidence in court.

That's where the state and federal governments were headed when they settled out of court in 1991 for $1.2 billion. The settlement specifies that the bulk of the money go to restoring damaged resources. Spill trustees meet monthly and are looking to the same scientists and studies to figure out how to do that.

LACK OF STUDIES

Scientists began the journey of assessing damage empty-handed. With the exception of a few isolated studies, the only complete census and study of wildlife in the Sound was nearly 13 years old. And that study was done by two underfunded biologists who had to borrow a friend's boat to do their work, according to Karen Laing, a U.S. Fish and Wildlife biologist.

"There are weaknesses in our knowledge about almost every injury," said chief scientist Spies. "A lot of that is due to the fact we did not have the baseline data before the spill. We weren't prepared for cleanup and we weren't prepared for damage assessment."

In some cases, biologists had to find untainted areas of the Sound to calculate what would be normal breeding and feeding patterns for some species.

In late spring 1991, scientists were coming up with several different, unrelated observations, said Malin Babcock, a National Marine Fisheries Service biologist. "That's when they started looking

While storms and wave action washed most visible oil off the beaches, nothing touched the crude oil trapped below mussel beds, which may explain lingering injury to harlequin ducks and juvenile sea otters, which feed on mussel beds.

FISH AND SHELLFISH

For months following the spill, biologists and Exxon officials said repeatedly that fish and shellfish were not in harm's way because oil floats and the fish could easily swim away from it.

That was not always the case.

Spawning fish and oil met in the intertidal areas, producing mutant herring larvae and club-tailed wild pink salmon. Nearly all the wild pinks in the southwest part of the Sound were oiled, some twice, according to Samuel Sharr, a state biologist.

About 50 percent of the streams in the southwest Sound may have gotten oil, Sharr said. So eggs and fry produced in those streams got oiled there, then again migrating out.

Oil did not appear to diminish their food supply, but the extra metabolic energy it took for the juveniles to detoxify the water-soluble fractions of oil may have stunted their growth and limited the number that survived to be adults, according to state Department of Fish and Game biologists.

The wild pink salmon's clubbed tails and the twisted spines seen in herring had disappeared by this fall, Spies said. But pink salmon mortality rates are still high.

The wild pink salmon "are in jeopardy all right," he added. But there is much debate over whether the oil spill or the growing commercial hatcheries are to blame.

Oil experts were surprised as evidence began to accumulate about the depth at which the oil sediments were being washed down underwater slopes, eventually reaching 60 to 700 feet below sea level and into crab, shrimp and rockfish habitat. But biologists also point out that long before the oil got there, commercial fishing had been taking an undocumented toll on these species.

plus years old and dwell near reefs at depths of 30 to 1,800 feet, were the only adult fish that turned up dead following the spill. Concentrations of hydrocarbon metabolites were found in their bile. State Department of Fish and Game biologists found that "without question, rockfish were exposed to oil, some at lethal levels."

Kenai River red salmon also are suffering nearly four years after the spill.

BIRDS

There are 100 species of birds in the Sound, according biologist Laing. And most of them escaped spill injury. Or, like bald eagles and marbled murrelets, felt the effects of the spill only the first year.

Other species that were relatively rare before the spill, like the harlequin ducks, seem still haunted by the onslaught of oil and cleanup workers.

"There is a large difference between sea birds," said biologist Spies. Some sea birds, like mallards, can ingest oil without so much as a burp. Others, like the harlequin, react to just a couple of drops on their feathers.

In all, roughly 36,000 bird carcasses were found and scientists estimate that 300,000 to 645,000 birds were killed during the first months after the spill, with Alaska Gulf common murres suffering the highest mortality.

Early 1970s data showed 6,000 to 10,000 harlequins living in the Sound. Biologist Patten calculates 2,000 of them were living in the path of the oil. About 400 were reported killed and those remaining are simply not reproducing.

What's amazing about harlequins is that before the 1989 spill, no harlequin nests had ever been found anywhere in world except Iceland. And that was in 1966.

"They are hard to study, kind of flighty and very secretive," Patten said.

Since the spill, Alaska biologists have found six nests in low, dense vegetation upstream in the western part of the Sound.

The colony of common murres that nest in the Barren Islands also are still suffering nearly four years

biologist fears the bad habits they developed during the spill could lead their colony to extinction.

Their problem doesn't seem to be with food, but confusion that started in early April 1989, when the wave of oil wiped out a raft of tens of thousands of common murres. Data suggest that the oil killed up to 80 percent of the local population, or about 10 percent to 20 percent of entire northern Gulf of Alaska population.

"The timing of the oil surrounding the Barren Island could not have been more devastating to the murres," wrote biologist Michael Fry of the University of California Davis.

Murres, which live to be 15 to 20 years old, produce only one egg annually. Some scientists theorized that the wave of oil mostly killed the experienced breeders, leaving young, inexperience murres to carry on the mating and nesting rituals. Each spring since the spill, the survivors have been nesting a month later than they should.

Their tardiness has resulted in increased predation of eggs and chicks by gulls and ravens. And the winter storms have swept more than 100,000 chicks off the cliffs to their deaths every fall since the spill.

"Murres appear to be in real danger of becoming permanently entrained to late breeding," Davis writes. "If this is permanent, the prospects for these colonies is poor because a breeding failure will lead to the eventual decline and extinction of these colonies."

MARINE MAMMALS

Though the Exxon spill was the first really big spill in the coastal, chilly waters, according to biologist Spies, the lack of baseline data limited how much was learned.

Previous, sporadic studies showed that 20 percent to 30 percent of the sea otters — or about 4,000 — in the Sound were killed by oil, Spies said. Workers recovered 781 carcasses.

The oil destroyed the insulating quality of sea otter's fur. As they attempted to clean their fur, they ingested large amounts of oil. Necpulmonary emphysema, gastric erosion, hemorrhaging and liver and kidney damage. The oil seemed to take a toll mostly on middle-aged otters and pups.

"We don't know exactly why they are suffering," said Brenda Ballachey, a U.S. Fish and Wildlife biologist. Mussels are a source of food for pups, which seem to have a high mortality, so scientists are looking at that.

The debate continues over whether sea otters are coming back and whether the rehabilitation centers set up to rescue otters after the spill did any good, Spies said.

Before the spill, harbor seal numbers were on the decline, according to biologists with the state Department of Fish and Game.

Oil-spill workers didn't find many harbor seal carcasses after the spill, though scientists estimated 50 percent to 100 percent of the seals living in the spill area were oiled. An estimated 200 died, but only 19 carcasses were found because harbor seals sink.

Harbor seals, known to be skittish around people, allowed spill workers to approach them. They were lethargic and sickly. Biologists later found debilitating lesions on their brains and that exposure to aromatic hydrocarbons had caused swelling and degeneration of their nervous system.

Scientists had data for killer whales. Craig Matkin, a Homer biologist, had been studying them since the early 1980s. So biologists knew one particular pod quite intimately.

The AB pod had 36 members the year of the spill. Within the next three years, 13 disappeared and two of the remaining males' dorsal fins had collapsed.

"That doesn't happen very often in the wild," said Marilyn Dahlheim, a National Oceanographic and Atmospheric Administration biologist. "Nobody knows why it happens. It might be a nutritional problem, it might be injury to the fin."

Dahlheim said biologists have not been able to find a "real clear cause and effect" between the spill and the missing whales or fin damage.

"There is a legal term, 'preponderance of evidence.'" Dahlheim

WALCOFF & ASSOCIATES

M E M O R A N D U M

TO: C. Paquette
S. Saari
K. Schildbach
M. McMillen
A. Pretti

FROM: S. Brown

DATE: January 27, 1993

SUBJECT: Meeting minutes

BACKGROUND:

Updated version with Carol Paquette's changes for your files.

DISCUSSION:

Here's what we talked about and what we agreed to.

ACTION:

Please review the minutes and make sure your responsibilities and comments are accurately reflected.

EIS Team Meeting

Tuesday, January 26, 1993
10:00 a.m.

Present were Carol Paquette (Department Manager), Sharon Saari (Project Manager), Matt McMillen (Dynamac Senior Scientist), and Sue Brown (Technical Writer). Anne Pretti (Administrative Assistant) was present for part of the meeting. Kathy Schildbach (Socioeconomic Technical Expert) was absent.

Sharon expressed her hope that Carol will be able to assist in the management of the team and in the review and compilation of the socioeconomic data.

According to Sharon's conversation with Ken Rice, USFS Anchorage, the Restoration Planning Work Group (RPWG) should have the alternatives completed by this Friday, January 29. Sharon will arrive in Anchorage the next day for the Oil Spill Symposium. At that time, she will review the alternatives and meet with RPWG to discuss them. She will fax the alternatives to Walcoff from Alaska if possible. Sue suggested that Sharon check into borrowing one of the company laptops.

Ken told Sharon that RPWG is currently looking at four alternatives rather than the six they had originally considered. These include two "extremes" and two "moderate" alternatives.

Regarding issues identified by the public: The group discussed placing the comprehensive list of issues in an appendix and cross-referencing each issue to the place(s) in the document where it is addressed. Sharon recommended that Matt assign the issues among the team members, and that each person would be responsible for a page (or a paragraph, depending) on each of their issues.

The group reviewed Ken Rice's fax of issues and decided which it felt it could address. A summary of the discussion follows:

	Issue	Comments
1.	Effect of restoration projects on local economies and communities, as measured in change in number and kinds of jobs and change in community infrastructure.	Employment can be discussed in terms of IMPLAN results. Infrastructure can be discussed in broad, qualitative terms but cannot be quantified at the programmatic level. More baseline data on schools, sewage and water systems, transportation, etc. required. Carol and Kathy will handle.
2.	Restoration activities' contribution to restoring injured resources and services in terms of— • Change in rate and degree of recovery	Ken has told Sharon that RPWG has some of this data. Sharon said that Walcoff will use RPWG data if available; otherwise, this can only be described in broad terms. Walcoff can supply basic assumptions,

• Percent population change • Number of animals produced • Amount of habitat restored/enhanced • Change in time (years) to full recovery • Change in population demographics • Change in recreation user days	such as "one boat ramp will bring in x dollars and will increase tourism and recreation by x percent." Anne, who is writing the recreation description, did not know whether user days data are available. Sharon said that user days are FORPLAN output. Sue said that USFS has approved IMPLAN in its place, and that if IMPLAN does not produce this data, Walcoff should not be required to provide it. Sharon will handle this.
3. Effects of restoration on land use in terms of— • Acres removed from private ownership • Acres of public land receiving more protective management • Volume of timber not available for harvest • Volume of mineral resources not available for development	Sharon said that she could provide data for the timber items, plus information on jobs lost. She said that the mineral resources question could only be addressed qualitatively because no data is currently available. Sharon will handle.
4. Impacts to non-target biological resources from restoration activities directed at injured resources in terms of— • Change in population of non-target species • Change in population structure of non-target species • Acreage change in habitat of non-target species	Again, if these data are available from RPWG, Walcoff will use them. Otherwise, this will not be addressed. Non-target species cannot be addressed quantitatively without reference to specific projects. Competition would be the major effect, and this must also be taken into consideration with regard to subsistence users. Sharon will handle.
5. Effects of restoration on genetic diversity of wild salmon stocks.	Matt said that he had seen material on this. This can be addressed generally. Matt will handle.
6. Changes to the ecological structure of the spill area, as measured in terms of species diversity and acres of habitat structurally changed.	Changes in diversity cannot be addressed quantitatively, according to Sharon. Matt thought they could be addressed in broad quantitative terms (net increase or decrease). Some confusion about how to define diversity. Habitat acreage question can be addressed in section about short-

		and long-term impacts. Sharon will handle.
7.	Changes to subsistence uses in terms of amounts and kinds of resources harvested and changes in accessibility and availability.	Sue said she thought Kathy had enough information to address these questions. Carol and Kathy will handle on a qualitative basis.
8.	Effects of restoration on human health and safety, as measured by change in hydrocarbon levels in harvested resources.	Carol suggested that OSHA-type criteria for health and safety be used here, e.g., accident rates, access to medical services, health care, etc. Sue said that hydrocarbon levels alone do not reflect health and safety; information on what people eat, when, and in what quantities would be needed. Sharon said this section should address both OSHA-type issues and the hydrocarbon measurements. Sharon and Matt will provide data. Kathy and Carol will provide discussion based on this input.

Carol asked Sharon for a more detailed timeline for the DEIS. Sharon said that she had told USFS that the team would require a minimum of 6 weeks from the date of receipt of the alternatives to complete the analysis. The DEIS is due to the Restoration Team (RT) by April 1. Some non-substantive "holes," such as an incomplete index or missing bibliographical entries, would be acceptable at this stage. The RT will return comments to Walcoff, where they will be incorporated, and the document will be forwarded to the Trustee Council (TC) by May 5 for review. Sharon said that Walcoff has agreed to send USFS "advance chapters" as they are finished.

Matt said that he would check into Dynamac's mapping capability. Dynamac typically digitizes maps. Scanning them is a less preferred option. Sharon asked him to check on what they would cost and whether Dynamac would agree to do the maps without a contract modification, since much of the work Dynamac was originally contracted for has fallen to Walcoff because Dean Mericus and Pete Saunders have left the team.

Having reviewed the draft of Chapter III, Affected Environment, Carol raised the following concerns:

- The socioeconomic section does not address non-Native Alaskans. (This will be Kathy's to correct.)
- There is no description of transportation in the area. (Sue is working on this.)

- A description of government forms (tribal vs. city, State oversight, etc.) is needed. (Kathy should do this.)

- A description of infrastructure and delivery for social, economic, and medical services is missing.

- The entire document needs more tables and diagrams.

Sharon said these points would be addressed.

~~least effective~~ ~~moderately~~ high medium low rankings of alternatives

Fish

1st level

commercial
recreational
subsistence
food chain
sociocultural
economics
intrinsic value?

2nd level

health

Birds

tourism
subsistence
recreational hunting
sociocultural
intrinsic value?
wilderness/habitat
~~food chain~~

marine & terrestrial mammals

tourism
subsistence (river otters *)
sociocultural
intrinsic

intertidal

recreational
subsis
socio
food chain

subtidal

~~commercial~~
wilderness/habitat?

~~non-biological~~

archeological sites

tourism
socio
intrinsic

beach zone

tourism
socio
intrinsic
aesthetics
recreational

~~water~~ recreational

Susanne

Q: what scope for 2ndary impacts
PWS / State of Alaska / U.S.

What's EXPLAN do?
ES will get memo

CONCEPTUAL FRAMEWORK FOR ANALYSIS

EIS OUTLINE
EXECUTIVE SUMMARY — 50-60 pages
mostly maps & charts

BASELINE DEFINITION (pre spill conditions)
? CURRENT SITUATION (Spring 1993)
ANALYSIS/DISCUSSION OF EACH ALTERNATIVE

APPENDIX
PEIS PROCESS

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(19)

January 27, 1993

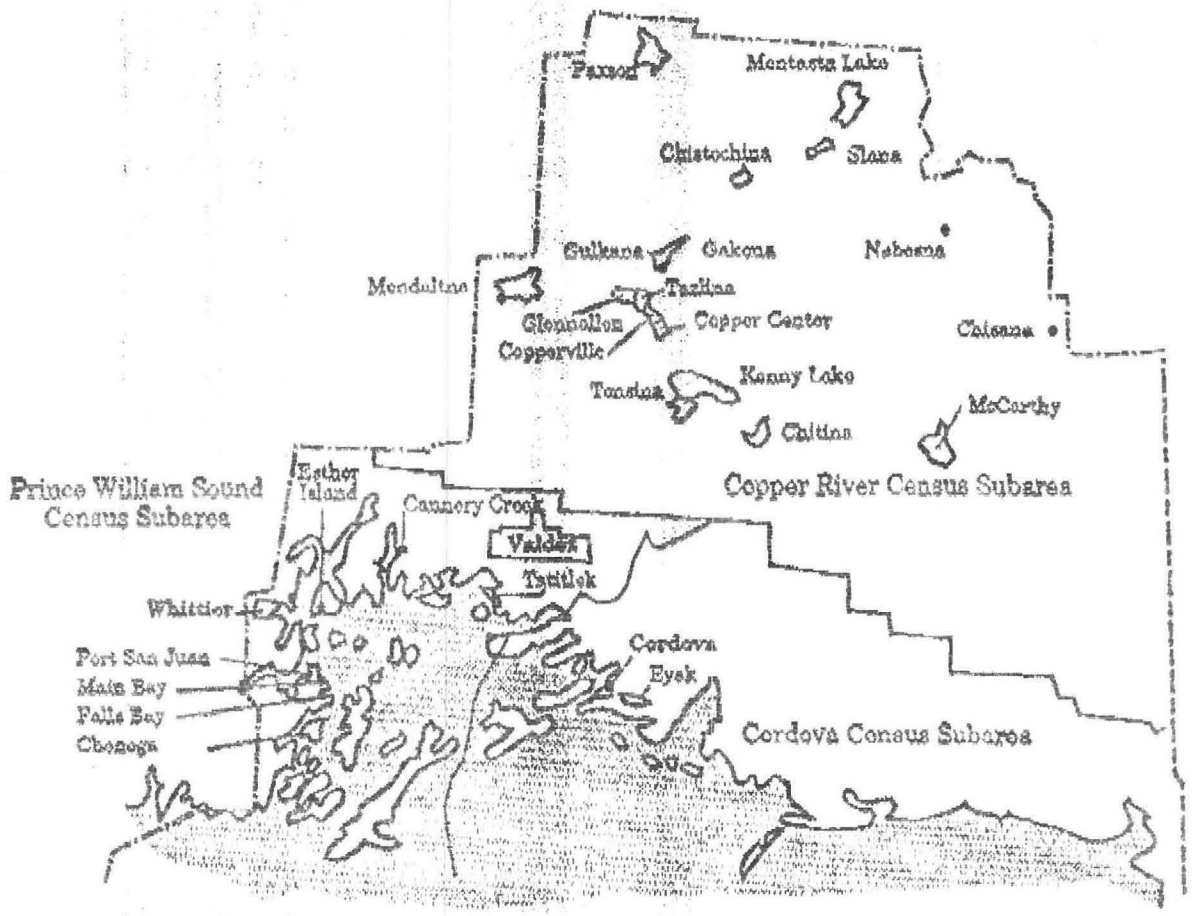
MEMORANDUM

TO: Carol Paquette
TEL: 684-5588
FAX: 548-2881

FROM: Kathy Schildbach

RE: Census Information for Valdez-Cordova
FYI

Information for the individual communities has been requested.



Valdez-Cordova Census Area

ALASKA DEPARTMENT OF LABOR RESEARCH & ANALYSIS

CPH-L-81. Selected Labor Force and Commuting Characteristics: 1990
le 2. Valdez-Cordova Census Area, Alaska

ne user should note that these data are based on a sample, subject to sampling variability, and that there are limitations to many of these data. Please refer to the technical documentation for Summary Tape File 3 for a further explanation of sampling variability and limitations of the data.

LABOR FORCE STATUS	
Persons 16 years and over	7,294
In labor force	5,399
Percent in labor force	74.0
Civilian labor force	5,276
Employed	4,730
Unemployed	546
Percent unemployed	10.3
Armed Forces	123
Not in labor force	1,895
Males 16 years and over	4,061
In labor force	3,296
Percent in labor force	81.2
Civilian labor force	3,173
Employed	2,797
Unemployed	376
Percent unemployed	11.8
Armed Forces	123
Not in labor force	765
Females 16 years and over	3,233
In labor force	2,103
Percent in labor force	65.0
Civilian labor force	2,103
Employed	1,933
Unemployed	170
Percent unemployed	8.1
Armed Forces	-
Not in labor force	1,130
Females 16 years and over	3,233
With own children under 6 years	686
Percent in labor force	58.3
With own children 6 to 17 years only	646
Percent in labor force	78.3
Own children under 6 years in families and subfamilies	982
All parents present in household in labor force	510
Own children 6 to 17 years in families and subfamilies	1,730
All parents present in household in labor force	1,253
Persons 16 to 19 years	508
Not enrolled in school and not high school graduate	67
Employed or in Armed Forces	32
Unemployed	14
Not in labor force	21
COMMUTING TO WORK	
Workers 16 years and over	4,708
Percent drove alone	54.4
Percent in carpools	19.5
Percent using public transportation	0.7
Percent using other means	4.4
Percent walked or worked at home	25.0
Mean travel time to work (minutes)	12.1

OCCUPATION	
Employed persons 16 years and over	4,730
Executive, administrative, and managerial occupations	484
Professional specialty occupations	629
Technicians and related support occupations	196
Sales occupations	263
Administrative support occupations, including clerical	655
Private household occupations	6
Protective service occupations	67
Service occupations, except protective and household	683
Farming, forestry, and fishing occupations	410
Precision production, craft, and repair occupations	620
Machine operators, assemblers, and inspectors	83
Transportation and material moving occupations	403
Handlers, equipment cleaners, helpers, and laborers	231
INDUSTRY	
Employed persons 16 years and over	4,730
Agriculture, forestry, and fisheries	574
Mining	115
Construction	421
Manufacturing, nondurable goods	146
Manufacturing, durable goods	110
Transportation	618
Communications and other public utilities	149
Wholesale trade	84
Retail trade	612
Finance, insurance, and real estate	102
Business and repair services	87
Personal services	154
Entertainment and recreation services	60
Health services	316
Educational services	523
Other professional and related services	212
Public administration	447
CLASS OF WORKER	
Employed persons 16 years and over	4,730
Private wage and salary workers	2,633
Government workers	1,524
Local government workers	578
State government workers	636
Federal government workers	310
Self-employed workers	543
Unpaid family workers	30

1990 CPH-L-81. Selected Social Characteristics: 1990 (Corrected)
Table 1. Valdez-Cordova Census Area, Alaska

The user should note that these data are based on a sample, subject to sampling variability, and that there are limitations to many of these data. Please refer to the technical documentation for Summary Tape File 3 for a further explanation of sampling variability and limitations of the data.

URBAN AND RURAL RESIDENCE	
Total population	9,952
Urban population	3,360
Percent of total population	33.8
Rural population	6,592
Percent of total population	66.2
Farm population	77
SCHOOL ENROLLMENT	
Persons 3 years and over enrolled in school	2,516
Preprimary school	223
Elementary or high school	1,829
Percent in private school	2.8
College	464
EDUCATIONAL ATTAINMENT	
Persons 25 years and over	6,282
Less than 9th grade	348
9th to 12th grade, no diploma	665
High school graduate	2,006
Some college, no degree	1,632
Associate degree	467
Bachelor's degree	833
Graduate or professional degree	331
Percent high school graduate or higher	83.9
Percent bachelor's degree or higher	18.5
RESIDENCE IN 1985	
Persons 5 years and over	9,076
Lived in same house	4,016
Lived in different house in U.S.	4,940
Same State	3,211
Same county	2,070
Different county	1,141
Different State	1,729
Lived abroad	120
DISABILITY OF CIVILIAN NONINSTITUTIONALIZED PERSONS	
Persons 16 to 64 years	6,638
With a mobility or self-care limitation	95
With a mobility limitation	71
With a self-care limitation	52
With a work disability	376
In labor force	179
Prevented from working	131
Persons 65 years and over	447
With a mobility or self-care limitation	86
With a mobility limitation	57
With a self-care limitation	56
CHILDREN EVER BORN PER 1,000 WOMEN	
Women 15 to 24 years	295
Women 25 to 34 years	1,307
Women 35 to 44 years	2,066

VETERAN STATUS	
Civilian veterans 16 years and over	1,42
65 years and over	16
NATIVITY AND PLACE OF BIRTH	
Native population	9,60
Percent born in State of residence	35.4
Foreign-born population	343
Entered the U.S. 1980 to 1990	128
LANGUAGE SPOKEN AT HOME	
Persons 5 years and over	9,074
Speak a language other than English	761
Do not speak English "very well"	199
Speak Spanish	214
Do not speak English "very well"	53
Speak Asian or Pacific Island language	161
Do not speak English "very well"	38
ANCESTRY	
Total ancestries reported	11,743
Arab	24
Austrian	32
Belgian	21
Canadian	33
Czech	62
Danish	120
Dutch	346
English	1,297
Finnish	103
French (except Basque)	420
French Canadian	123
German	2,225
Greek	22
Hungarian	55
Irish	1,359
Italian	214
Lithuanian	5
Norwegian	368
Polish	181
Portuguese	35
Romanian	-
Russian	52
Scotch-Irish	215
Scottish	293
Slovak	10
Subsaharan African	10
Swedish	361
Swiss	39
Ukrainian	14
United States or American	835
Welsh	139
West Indian (excluding Hispanic origin groups)	-
Yugoslavian	33
Other ancestries	2,696

Table 1. Selected Population and Housing Characteristics: 1990
Valdez-Cordova Census Area, Alaska

The population counts set forth herein are subject to possible correction for undercount or overcount. The United States Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991.

Total population	9,952
SEX	
Male	5,471
Female	4,481
AGE	
Under 5 years	881
5 to 17 years	2,023
18 to 20 years	365
21 to 24 years	440
25 to 44 years	4,047
45 to 54 years	1,101
55 to 59 years	350
60 to 64 years	282
65 to 74 years	320
75 to 84 years	119
85 years and over	24
Median age	32.0
Under 18 years	2,904
Percent of total population	29.2
65 years and over	463
Percent of total population	4.7
HOUSEHOLDS BY TYPE	
Total households	3,425
Family households (families)	2,312
Married-couple families	1,896
Percent of total households	55.4
Other family, male householder	158
Other family, female householder	258
Nonfamily households	1,113
Percent of total households	32.5
Householder living alone	828
Householder 65 years and over	143
Persons living in households	9,364
Persons per household	2.73
GROUP QUARTERS	
Persons living in group quarters	588
Institutionalized persons	93
Other persons in group quarters	495
RACE AND HISPANIC ORIGIN	
White	8,247
Black	57
Percent of total population	0.6
American Indian, Eskimo, or Aleut	1,245
Percent of total population	12.5
Asian or Pacific Islander	324
Percent of total population	3.3
Other race	79
Hispanic origin (of any race)	270
Percent of total population	2.7

Total housing units	5,196
OCCUPANCY AND TENURE	
Occupied housing units	3,425
Owner occupied	2,210
Percent owner occupied	64.5
Renter occupied	1,215
Vacant housing units	1,771
For seasonal, recreational, or occasional use	966
Homeowner vacancy rate (percent)	4.0
Rental vacancy rate (percent)	10.7
Persons per owner-occupied unit	2.87
Persons per renter-occupied unit	2.48
Units with over 1 person per room	325
UNITS IN STRUCTURE	
1-unit, detached	2,816
1-unit, attached	66
2 to 4 units	366
5 to 9 units	152
10 or more units	452
Mobile home, trailer, other	1,344
VALUE	
Specified owner-occupied units	1,162
Less than $50,000	251
$50,000 to $99,999	359
$100,000 to $149,999	387
$150,000 to $199,999	117
$200,000 to $299,999	40
$300,000 or more	8
Median (dollars)	97,100
CONTRACT RENT	
Specified renter-occupied units paying cash rent	946
Less than $250	147
$250 to $499	392
$500 to $749	320
$750 to $999	56
$1,000 or more	31
Median (dollars)	457
RACE AND HISPANIC ORIGIN OF HOUSEHOLDER	
Occupied housing units	3,425
White	2,956
Black	14
Percent of occupied units	0.4
American Indian, Eskimo, or Aleut	367
Percent of occupied units	10.7
Asian or Pacific Islander	69
Percent of occupied units	2.0
Other race	19
Hispanic origin (of any race)	63
Percent of occupied units	1.8

The user should note that there are limitations to many of these data. Please refer to the technical documentation provided with Summary Tape File 1A for a further explanation on the limitations of the data.

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Table x-x

Existing Recreational Use in PWS Region

Name of Area	Acres	Visitors per Year	Wilderness	Built Facilities
Chugach National Forest				
Kodiak National Wildlife Refuge				
Katmai National Park				
Katchemac State Park				

Table x-x

Alternative 1: No Action

Option Categories	Monitoring	Manage Human Use	Education	Manage Resources	Habitat Protection
Natural Recovery	$2–3M/year				
Annual Report			✓		
Meetings & Workshops			✓		
Community Outreach			✓		
Normal Agency Management		✓	✓	✓	✓

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Table x-x

Alternative 1: Addresses Injured Resources

Options	Fish and Fishing	Birds	Mammals	Intertidal and Subtidal	Archaeology	Recreation	Subsistence
Natural recovery	rapid	slow	slow	rapid	none	rapid	slow
Education programs		✓	✓		✓	✓	✓
Normal agency management	✓	✓	✓			✓	✓
Monitoring	✓	✓	✓	✓	✓		✓

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Table x-x

Alternative 2: ~~Restoration Actions~~ Habitat Protection

Options	Monitoring	Manage Human Use	Education	Manage Resources	Habitat Protection
Monitor recovery and effectiveness	$2-3M/year				✓
Habitat protection and acquisition		✓	✓		✓
Special designation		✓	✓		✓
Reduce disturbance		✓	✓		✓
Catalog anadromous fish				✓	✓
Protection of archaeological resources	✓	✓	✓		
Oil spill contingency plan		✓	✓		✓

Table x-x

Alternative 2: Addresses Injured Resources

Options	Fish	Birds	Mammals	Intertidal and subtidal	Archaeology	Recreation	Subsistence
Monitoring recovery	✓	✓	✓	✓	✓		✓
Habitat protection and acquisition	anadromous streams	✓	✓	✓			✓
Special designation	buffer	refuges, wilderness	refuges, wilderness	marine sanctuary		parks	
Reduce disturbance		✓	✓		✓		
Catalog anadromous fish	✓						✓
Protection of archaeological resources					✓		
Oil spill contingency plan	prevent future additional injury	prevent future additional injury	prevent future additional injury	prevent future additional injury	prevent future additional injury	prevent future additional injury	prevent future additional injury

Table x-x

Alternative 1: Actions Included

Restoration Actions	Birds	Mammals	Fish	Intertidal and Subtidal	Archaeology	Services
Monitoring	natural recovery	natural recovery	natural recovery	natural recovery of mussel beds and sediments	yes	all
Habitat protection and acquisition	not	not	not	not	not	not
Manage human use, provide education	education yes	education yes	education yes	education yes	education yes	subsistence recreation
Resource management by State and Federal agencies	by USFWS and ADF&G	by USFWS, ADF&G, and NOAA	by NMFS and ADF&G	research by NOAA/NMFS	by SHPO	by ADNR, ADF&G, USDOI/NPS, and USDA/USFS
Acquisition of equivalent resources (replacement)	not	not	not	not	not	not
Enhancement	not	not	not	not	not	not
Normal agency managment and administration	yes	yes	yes	no	yes	yes

Table x-x

Alternative 2: Actions Included

Restoration Actions	Birds	Mammals	Fish	Intertidal and Subtidal	Archaeology	Services
Monitoring	all injured and protected areas	all injured and protected areas	all injured and protected areas	all injured and protected areas	in protected uplands and tidelands	recreation, wilderness, subsistence
Habitat protection and acquisition • special designation • purchase • easement	harlequin duck, murrelet, bald eagle, black oystercatcher, pigeon guillemot	sea otter, river otter	anadramous streams	marine sanctuary	to deter further degredation, preserve sites and artifacts	refuges, wilderness, special management areas
Manage human use, provide education • reduce disturbance • subsistence cooperation • increase rangers	murre colonies	seal haulouts, sea otter	close fishery management plans	not	site patrol, stewardship	educate subsistence and recreation users, protect/enforce
Resource management by State and Federal agencies • create buffer zones • anadromous catalog	harlequin duck, bald eagle	river otter	sockeye salmon, pink salmon, Dolly Varden, cutthroat trout	coastal zone management	restore damage	not
Acquisition of equivalent resources (replacement)	not	not	not	not	not	not
Enhancement	not	not	not	not	not	not

Restoration Actions	Birds	Mammals	Fish	Intertidal and Subtidal	Archaeology	Services
Oil spill prevention and contingency planning	not	not	reduce other outside threats	not	not	not

Table x-x

Alternative 3: Actions Included

Restoration Actions	Birds	Mammals	Fish	Intertidal and Subtidal	Archaeology	Services
Monitoring • outside PWS as well as inside	all injured until recovered	all injured until recovered	all injured until recovered	all injured until recovered	all injured until recovered	all injured until restored
Habitat protection and acquisition • special designation • purchase • easement	harlequin duck, murrelet	sea otter, river otter	anadramous fish	eliminate oil from mussels	preserve sites and artifacts	recreation, wilderness
Manage human use, provide education • reduce disturbance • subsistence cooperation	harlequin duck, murrelet	killer whale, seal, sea otter	fishermen cooperation	test foods	site patrol, stewardship	provide access to traditional foods, test subsistence foods
Resource management by State and Federal agencies • social stimuli • predator control • intensify management	murre, marine birds, pigeon guillemot	not	sockeye salmon	accelerate upper intertidal zone recovery	not	not
Acquisition of equivalent resources (replacement)	not	not	yes, for commercial hatchery runs; create new sport runs	not	not	new back country recreation, fishing, subsistence

Restoration Actions	Birds	Mammals	Fish	Intertidal and Subtidal	Archaeology	Services
Enhancement	not	not	not	not	not	not
Oil spill prevention and contingency planning	not	not	not	not	not	not

Table x-x

Alternative 5: Actions Included

Restoration Actions	Birds	Mammals	Fish	Intertidal and Subtidal	Archaeology	Services
Monitoring	**all**	**all**	**all**	**all**	**all**	**all**
Habitat protection and acquisition • special designation • purchase • easement • buffer	black oystercatcher, harlequin duck, murrelet, bald eagle, pigeon guillemot	sea otter, river otter	anadramous fish	eliminate oil from mussels	preserve sites and artifacts	wilderness
Manage human use, provide education • reduce disturbance • cooperative programs • minimize take	murre, murrelet	killer whale, seal haulouts, sea otter	fishermen	marine institute	site patrol, stewardship	new education facilities, fishing, subsistence, increase access
Resource management by State and Federal agencies • social stimuli • predator control • intensify management • fish passes • anadromous catalog	murre, pigeon guillemot	not	all salmon, Pacific herring, Dolly Varden, cutthroat trout	accelerate upper intertidal zone recovery	not	intensify fishery management all users, new salmon runs
Acquisition of equivalent resources (replacement)	not	not	replace salmon runs	not	acquire replacement artifacts	new back country recreation, new salmon runs

Restoration Actions	Birds	Mammals	Fish	Intertidal and Subtidal	Archaeology	Services
Enhancement	not	not	not	provide new sources of shellfish	not	not
Oil spill prevention and contingency planning	not	not	not	not	not	not

Table x-x

Important Forest Successional Stages as Wildlife Habitat

Species	New Growth (0–25 years)	Middle Stage of Succession (26–200 years)	Old Growth (> 200 years)
Red squirrel	low	low – high	moderate – high
Black bear	moderate	low	moderate – high
Brown bear	low	low	moderate – high
Marten	low	low	moderate – high
River otter	low	low – moderate	moderate – high
Blacktail deer	low – moderate	low – moderate	low – high
Wolf			
Bald eagle	low	low	high
Red-breasted sapsucker			
Hairy woodpecker	low	low	moderate – high
Brown creeper	low	low	low – high
Murrelet	low	low	high
Harlequin duck	low	low – moderate	moderate – high

Table x-x

Floodplains, Wetlands, Agriculture, and Rangeland Impacts

Alternative	Floodplains	Wetlands	Agriculture	Rangelands
Alternative 1: No Action (monitor recovery)	not applicable	not applicable	not applicable	not applicable
Alternative 2: Habitat Protection and Acquisition • **habitat protection** • **buffer zones**	protect maximum protect	protect secondary protection	not applicable not applicable	not applicable not applicable
Alternative 3: Limited Restoration (habitat protection)	protect	protect	not applicable	not applicable
Alternative 4: Moderate Restoration	protect	protect	not applicable	not applicable
Alternative 5: Comprehensive Restoration (habitat protection)	protect maximum	protect	not applicable	not applicable

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Table x-x

Fish and Shellfish Impacts

Options per Alternative	Population Increase or Decrease	Harvestable Surplus	Increase Survival	Impact on Wild Stock	Aid in Services
Alternative 1: No Action • natural recovery • monitoring	increase in 20 years	decreased for sockeye; cutthroat trout fishery closed	no	permanent damage?	reduced fishing in Kodiak and Kenai; subsistence only
Alternative 2: Habitat Protection • anadromous stream catalog • buffer zones • special designation	increase	increase	increase	could help	fishing
Alternative 3: Linited Restoration • intensify management • improve survival rate • replacement • test subsistence	increase none	increase to determine	increase increase no	could harm could harm none	increase fishing fishing, subsistence
Alternative 4: Moderate Resotration • intensify management • improve services • replacement • relocate hatchery • fertilization		increase	increase		increase use

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Alternative 5: Comprehensive Restoration • replacement • intensify management • improve access (fish passes) • improve survival rate • anadramous stream catalog • spawn channels • relocate hatchery • fertilization			increase		

Table x-x

Fishery Impacts by Alternative

Alternative	Injured Species	Sport Fishing	Commercial Fishing	Subsistence Uses	Food Chain	Habitat Protection	Increase Management
Alternative 1: No Action							
Alternative 2: Protection							
Alternative 3: Limited Restoration							
Alternative 4: Moderate Restoration							
Alternative 5: Comprehensive Restoration							

Table x-x

Timber and Forest Impacts

Alternative	Commercial Harvest (MBF decrease)	Old-growth Wilderness Preservation	Road Access	Services	Secondary Effects
Alternative 1: No Action • monitoring only	x MBF/year available for harvesting	decrease	increase	commercial timber, subsistence access	maximum jobs
Alternative 2: Habitat Protection and Acquisition • special designation • buffer strips • timber rights	removes max. x MBF/year from harvest	maximum	decrease	back country recreation	minimum jobs
Alternative 3: Limited Restoration • habitat protection • protect existing uses	decreases along streams	preserves favorable	no change	wilderness recreation	
Alternative 4: Moderate Restoration • habitat protection	decreases along streams		no change	increase existing recreational use	
Alternative 5: Comprehensive Restoration • habitat protection • commercial recreation facilities • new recreation • improve fish access	moderate effect	minimal decrease depends on type reduce aesthetics	increase increase	recreation increase recreation increase fishing increase	maximum jobs

Table x-x

Impacts on Abiotic Features

Alternatives	Water Quality	Geologic Features	Soils	Energy	Minerals
Alternative 1: No Action	no change	not applicable	increase erosion	can detect other spills	not applicable
Alternative 2: Habitat Protection and Acquisition	maximum protection	protect "fragile" zones	reduce erosion	remove potential for exploration	remove potential for mining
Alternative 3: Limited Restoration		not applicable		not applicable	not applicable
Alternative 4: Moderate Restoration		not applicable		not applicable	not applicable
Alternative 5: Comprehensive Restoration	would probably deteriorate	not applicable	increase erosion	not applicable	not applicable

eis/tables/abioticimpacts

Table x-x

Impacts to Legally Protected Natural Resources

Alternative	Endangered Species	Threatened Species	Species of Concern[1]	Wilderness Areas
Alternative 1: No Action	no effect		declining habitat for murrelet and bald eagle	decline due to logging
Alternative 2: Habitat Protection • acquisition • buffer zones • special designation	marine sanctuary could help whale		could aid bald eagle	increase not applicable
Alternative 3: Limited Restoration				
Alternative 4: Moderate Restoration	no effect			
Alternative 5: Comprehensive Restoration • increase recreation	all whales disturbed		bald eagles disturbed	decline due to development

[1] Species threatened or extinct in other parts of their range (i.e., in the Lower 48)

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Table IV B1 Fish and Wildlife Impacts Due to Alternatives (10/30/92)

Injured Species	Natural Recovery Monitoring	Acquisition or Habitat Protection	Limited Restoration	Moderate Restoration	Comprehensive Restoration
Marine Mammals					
Harbor Seal	–	+	+	+	+
Sea Lion	–	+	–	0	+
Sea Otter	0	+	+	+	+
Killer Whale	0	+	+?	+?	+
Terrestrial Mammals					
Sitka Deer	0	+	0	0	+
Brown Bear	–	+	0	0	+
River Otter	0	+	0	0	+
Birds					
Bald Eagle	–	+	0	0	+
Peregrine Falcon	–	+	0	0	+
Murre	–	+	+	+	+
Murrelet	–	+	+	+	+
Storm Petrel	0	+	0	0	+
Kittiwake	0	+	0	0	+
Pigeon Guillemot	0	+	+	+	+
Other Marine Birds	0	+	+	+	+
Harlequin Duck	–	+	+	+	+

Key: + positive results on species
– potential negative results
0 neutral or unknown results

eis|impact.tbl

Injured Species	Natural Recovery Monitoring	Acquisition or Habitat Protection	Limited Restoration	Moderate Restoration	Comprehensive Restoration
Other Sea Ducks	0	0	+	+	+
Black Oystercatcher	–	+	0	+	+
Other Shorebirds	–	+	0	+	+
Fish					
Pink Salmon	0	+	+	+	+
Sockeye Salmon	0	+	+	+	+
Pacific Herring	0	0-	0	0	+
Rockfish	0	0	0	0	+
Dolly Varden	0	+	+	+	+
Cutthroat Trout	0	+	+	+	+
Shellfish					
Clam/Mussel	0	+	+	+	+
Shrimp	0	0	+	+	+
Invertebrates					
Limpet	0	+	0	+	+
Periwinkle	0	+	0	+	+
Barnacle	0	+	0	+	+
Amphipod	0	+	0	+	+

Key: + positive results on species
– potential negative results
0 neutral or unknown results

Table x-x

Human Issues/Impacts

	Archaeology	Subsistence	Recreation	Social/ Cultural Services	Economics	Wilderness/ Intrinsic Value	Aesthetic Value
Alternative 1 Natural recovery Monitor/test? Education							
Alternative 2 Habitat protection Monitoring Acquisition Special designation							
Alternative 3 Limited restoration Habitat protection Monitoring							
Alternative 4 Moderate restoration Habitat protection Monitoring							
Alternative 5 Comprehensive restoration Habitat protection Monitoring Commercial recreation New recreation Improve access							

Table x-x

Communities

	English Bay	Homer	Kenai	Port Graham	Seldovia	Soldotna	Akhoik
Alternative 1 Natural recovery Monitor/test? Education							
Alternative 2 Habitat protection Monitoring Acquisition Special designation							
Alternative 3 Limited restoration Habitat protection Monitoring							
Alternative 4 Moderate restoration Habitat protection Monitoring							
Alternative 5 Comprehensive restoration Habitat protection Monitoring Commercial recreation New recreation Improve access							

Table x-x

Communities (con't)

	Karluk	Kodiak	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Chignik Bay
Alternative 1 Natural recovery Monitor/test? Education							
Alternative 2 Habitat protection Monitoring Acquisition Special designation							
Alternative 3 Limited restoration Habitat protection Monitoring							
Alternative 4 Moderate restoration Habitat protection Monitoring							
Alternative 5 Comprehensive restoration Habitat protection Monitoring Commercial recreation New recreation Improve access							

Table x-x

Communities (con't)

	Chignik Lagoon	Chignik Lake	Chenega Bay	Cordova	Tatitlek	Valdez	Whittier
Alternative 1 Natural recovery Monitor/test? Education							
Alternative 2 Habitat protection Monitoring Acquisition Special designation							
Alternative 3 Limited restoration Habitat protection Monitoring							
Alternative 4 Moderate restoration Habitat protection Monitoring							
Alternative 5 Comprehensive restoration Habitat protection Monitoring Commercial recreation New recreation Improve access							

SUBSISTENCE
Damaged Resources

Table x-x

OPTIONS	Fish	Birds	Mammals	Tidal	Non-biological
New salmon runs					
Test foods					
Access to alternatives					
Mariculture					
Shellfish hatchery					

Table x-x

First Level Impacts

OPTIONS	Fish	Social/Cultural	Economics	Intrinsic Value	Tourism	Subsistence
New salmon runs						
Test foods						
Access to alternatives						
Mariculture						
Shellfish hatchery						

Table x-x

Second Level Impacts

OPTIONS	Health	Safety	Social Services	Economics	Transpor-tation	Quality of Life	Water/ Sewage	Demographic	Native Culture
New salmon runs									
Test foods									
Access to alternatives									
Mariculture									
Shellfish hatchery									

RECREATION
Damaged Resources

Table x-x

OPTIONS	Fish	Birds	Mammals	Tidal	Non-biological
Habitat protection/ acquisition					
Special designation					
Spill prevention & planning					
Marine environment instruction					
New public recreation facilities					
Visitor centers					
Plan & market new facility					

Table x-x

First Level Impacts

OPTIONS	Commercial fishing	Recreational fishing	Tourism	Subsistence	Social/ cultural	Economic	Intrinsic value	Aesthetic value
Habitat protection/ acquisition								
Special designation								
Spill prevention & planning								
Marine environment instruction								
New public recreation facilities								
Visitor centers								
Plan & market new facility								

Table x-x

RECREATION (cont'd)
Second Level Impacts

OPTIONS	Health	Safety	Social services	Economics	Transpor-tation	Quality of life	Water/ sewage	Demographic	Native culture
Habitat protection/ acquisition									
Special designation									
Spill prevention & planning									
Marine environment instruction									
New public recreation facilities									
Visitor centers									
Plan & market new facility									

WILDERNESS & INTRINSIC VALUES

Table x-x

Damaged Resources

OPTIONS	Fish	Birds	Mammals	Tidal	Non-biological
Habitat protection/ acquisition					
Designation of protected areas					

Table x-x

First Level Impacts

OPTIONS	Commercial fishing	Recreational fishing	Tourism	Subsistence	Social/ cultural	Economic	Intrinsic value	Aesthetic value
Habitat protection/ acquisition								
Designation of protected areas								

Table x-x

Second Level Impacts

OPTIONS	Health	Safety	Social services	Economics	Transpor-tation	Quality of life	Water/ sewage	Demographic	Native culture
Habitat protection/ acquisition									
Designation of protected areas									

SPORT & COMMERCIAL FISHING
Damaged Resources

Table x-x

OPTIONS	Fish	Birds	Mammals	Tidal	Non-biological
New salmon runs					
Acquire access					

First Level Impacts

Table x-x

OPTIONS	Commercial fishing	Recreational fishing	Tourism	Subsistence	Social/ cultural	Economic	Intrinsic value	Aesthetic value
New salmon runs								
Acquire access								

Second Level Impacts

Table x-x

OPTIONS	Health	Safety	Social services	Economics	Transpor-tation	Quality of life	Water/ sewage	Demographic	Native culture
New salmon runs									
Acquire access									

Services

Defined only in terms of sport and commercial fishing impacts. Communities had to provide increased services with influx of cleanup crews. Planned increased development of PWS will create additional stress on available services (community infrastructure, water, sewage, transportation, housing, etc . . .)

Table x-x

COMMUNITIES
First Level Impacts

COMMUNITIES	Fish	Recreation	Tourism	Subsistence	Social/ cultural	Intrinsic value	Aesthetic value
Kenai Peninsula							
English Bay							
Homer							
Kenai							
Seldovia							
Soldotna							
Seward							
Kodiak Island							
Akhiok							
Karluk							
Kodiak							
Larsen Bay							
Old Harbor							
Ouzinkie							
Port Lions							
Lake & Peninsula							
Chignik Bay							
Chignik Lagoon							
Chignik Lake							
Valdez-Cordova							
Cordova							
Chenega							
Tatitlek							
Valdez							
Whittier							

Table x-x

COMMUNITIES (cont'd)
Second Level Impacts

COMMUNITIES	Health	Safety	Social services	Economic	Transpor-tation	Quality of life	Water/ Sewage	Native culture
Kenai Peninsula English Bay Homer Kenai Seldovia Soldotna Seward								
Kodiak Island Akhiok Karluk Kodiak Larsen Bay Old Harbor Ouzinkie Port Lions								
Lake & Peninsula Chignik Bay Chignik Lagoon Chignik Lake								
Valdez-Cordova Cordova Chenega Tatitlek Valdez Whittier								

COMMUNITIES (cont'd)
Damaged Resources

Table x-x

COMMUNITIES	Fish	Birds	Mammals	Tidal	Nonbio
Kenai Peninsula					
English Bay					
Homer					
Kenai					
Seldovia					
Soldotna					
Seward					
Kodiak Island					
Akhiok					
Karluk					
Kodiak					
Larsen Bay					
Old Harbor					
Ouzinkie					
Port Lions					
Lake & Peninsula					
Chignik Bay					
Chignik Lagoon					
Chignik Lake					
Valdez-Cordova					
Cordova					
Chenega					
Tatitlek					
Valdez					
Whittier					

Table x-x

Communities/Labor

COMMUNITIES	Agriculture, forestry, & fisheries	Mining	Construction	Manufacturing (nondurable goods)	Manufacturing (durable goods)	Transportation	Communication & public utilities
Kenai Peninsula							
English Bay							
Homer							
Kenai							
Seldovia							
Soldotna							
Seward							
Kodiak Island							
Akhiok							
Karluk							
Kodiak							
Larsen Bay							
Old Harbor							
Ouzinkie							
Port Lions							
Lake & Peninsula							
Chignik Bay							
Chignik Lagoon							
Chignik Lake							
Valdez-Cordova							
Cordova							
Chenega							
Tatitlek							
Valdez							
Whittier							

Table x-x

Communities/Labor (cont'd)

	Wholesale trade	Retail trade	Finance, insurance, & real estate	Business & repair services	Personal services	Entertain-ment & recreation	Health services	Education services	Other professional & related services
Kenai Peninsula									
English Bay									
Homer									
Kenai									
Seldovia									
Soldotna									
Seward									
Kodiak Island									
Akhiok									
Karluk									
Kodiak									
Larsen Bay									
Old Harbor									
Ouzinkie									
Port Lions									
Lake & Peninsula									
Chignik Bay									
Chignik Lagoon									
Chignik Lake									
Valdez-Cordova									
Cordova									
Chenega									
Tatitlek									
Valdez									
Whittier									

Table x-x

RESTORATION/SERVICES
Damaged Resources

	Archaeology	Commercial fishing	Recreation	Sport fishing	Subsistence	Wilderness use
Alternative 1						
Alternative 2						
Alternative 3						
Alternative 4						
Alternative 5						