RPWG
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RESTORATION PLANNING WORK GROUP
AUGUST 10, 1992
10:00 A.M.

Attendees:

Ray Thompson
Sandy Rabinowitch
Bob Loeffler
Sharon Saari
Mark Fraker
Chris Swenson
John Strand

The following items were distributed:

8/7/92 Revised Issue Statements
Agenda
Creating Alternatives - RPWG's Proposed Process
Process to Identify and Evaluate Restoration Options
EVOS Alternative Development Schemes and Results
Annotated Outline - Draft Restoration Plan

The following agenda items were discussed:

RESTORATION TEAM MEETING

RPWG is scheduled for 8:00 on August 11, to meet with the Restoration Team. John felt the topics are so important that we should all hear the comments at the meeting. RPWG will present the evaluation process, the annotated outline of the plan and the revised issue statements.

REVISED ISSUE STATEMENTS

Ray made revisions based on comments received. These 12 issues are basically the same but with fewer because of some combinations. John stated he received reverberations from the Restoration Team that these are issues that more apply to the Restoration Plan than a version more tuned to the EIS. Ray asked Sharon for input on how the issues relate to the Restoration Plan and the EIS. Sharon suggested sending out a letter and having a small scoping meeting with agencies that have been involved to allow an opportunity to raise issues. This meeting should also be open to the public. Bob stated that he is worried about overwhelming the public. Sharon stated this is not a request for comments from the public. Sandy stated that there is language in the NEPA regulations which require you to do this. Sharon stated that this gives agencies which have not been involved in the past to have some input. Sharon stated that someone from RPWG could maybe make a 10 minute presentation at the scoping meeting on where we are on the Restoration Plan. Regarding the relationship between these issues and the EIS, Sandy

stated that RPWG spent a lot of time drafting the issues which are all related to the draft plan. If these apply to the EIS, and there are many, Sandy would leave this up to Sharon to look at and check. Ray stated that the only issues that come up will probably be from meetings which are not focused on in the Restoration Plan. The oil spill, cleanup and bureaucracy were other issues that Sharon pointed out. Bob stated that #10 is a new issue and thought it provides a clear implication that the goal is to maximize distribution of funds to the widest group. Funding people is not our goal but a by-product. Chris stated that this came from public comments regarding funding agency budgets. Ray stated that the original issue had three parts. This new version is a boiled down version from the Restoration Team. Bob stated that the original #10 was a funding technique. Bob suggested changing "maximum" opportunity to "equal opportunity to compete" because you want everyone to have a shot. Sharon stated that not all parties are equally qualified so the "qualified parties" should also be deleted. These revisions were adopted into the issue statements. Sharon asked for an explanation of the concurrent and hierarchial approaches. Sandy referred Sharon to pages 50 and 51 of the framework document. Ray stated that these approaches are used in the land acquisition mode. Issue 12 was also discussed. Ray stated that these issues can be modified but it is important to follow our process and accurately document why and how changes took place. Sandy stated that it will be a relatively easy step to look at the outline and determine if there is a place to deal with these issues. Bob suggested replacing "and/or" in the first issue statement with "and". John asked Ray to prepare a cover letter containing what the Restoration Team is expected to do with the revised issue statements. Bob predicted that the issues without a complete package would be confusing to the Trustee Council. Ray stated that a fundamental part of the Forest Service process is having issues approved by the deciding official. Bob stated that we need to give the Restoration Team a work package containing the issues, alternatives and a time schedule. John stated there is a schedule being negotiated with the Restoration Team on when they expect certain products. Sharon stated she needs to give her group a description of the alternatives. The plan is to have the draft EIS at the same time as the draft Restoration Plan. Sandy suggested opening up communication between her group and RPWG by sending copies of draft materials for review. Ray will make the editorial changes to the issue list and draft a cover letter before leaving today.

ANALYSIS PROCESS FOR EVALUATION OF RESTORATION OPTIONS AND CREATION OF ALTERNATIVES

Bob provided a copy of the product he and Art prepared entitled Creating Alternatives - RPWG's Proposed Process. Bob worked through the presentation using this document as an outline. He stated that the reason for developing alternatives is to educate and focus the public on what is being done. This might not be the

best alternative. Sandy disagreed with Bob and stated he is not comfortable with Bob's statement the best alternative is not chosen. If there are different categories of decisions, you can build different categories of alternatives. Sandy stated this group came to the conclusion that the whole notion of funding isn't an alternative but is a funding mechanism. Sandy stated he spoke with those doing coding on the comments and it was unique to know what was being commented on. Bob stated the heart of the question is how to take options and group them into alternatives. Bob made the following suggestions for writing criteria:

1. Criteria should emphasize how the public makes decisions
2. Keep it simple
. Criteria must be explicitly defined
4. Criteria should be comprehensive

Bob stated the list of products will include a suite of options under alternatives, options by resource, and an evaluation of options. One interim product is the matrix. Sandy stated that as much sorting as possible should be done just for examination so that values will stand out. Chris asked if it is still the plan to have a preferred alternative. A verification process using sorting will be the background for the preferred alternative. Bob stated that you create the themes and rules, and the computer implements it. Chris stated there may be some confusion from the public and Restoration Team if they don't see the last step. Sharon stated that she had proposed having equal alternatives but the attorneys said a preferred alternative is required. Sharon questioned if a public issue or a scientific issue is selected. Sandy stated that Interior might insist that there be a preferred alternative because in the EIS, if you don't have it, what do you have to evaluate. Sandy stated that RPWG will prepare a range of alternatives identifying the best one and why. Bob stated that with the State, alternatives have always been detailed, which then go to the public for an informed choice and then much more detail is done. Sandy stated we are not dealing with this level of detail. Sharon suggested giving the public examples they can understand. Bob's write up takes us to creating alternatives but it does not answer what we go out with. Sandy suggested adding another paragraph that states that RPWG will choose a preferred alternative. Bob asked for any suggestions on his product. Sharon stated the goal of keeping the process simple is very good but the matrix is not simple. Sandy stated that the matrix is an internal document but some version may be used to show the public what was done. Sandy suggested deleting "potential" from restoration options under C. Sandy also suggested adding the 1991 Feasibility and Technical Support Studies to "Work Completed Before this Summer" and under "Options Assessment". Sandy also suggested explaining high, medium and low. John suggested providing an example of themes. Sandy also suggested deleting that the goal is not to choose the "best" restoration options. Sandy questioned having "public opinion" under "Criteria". RPWG decided to delete public opinion. John

asked if we intended to show the RT an example of the matrix. Bob will make the changes and add a paragraph on how to choose the preferred alternative. This is a blueprint for RPWG. Bob will make some bullet overheads of this for presentation to the Restoration Team. A preview will be presented to RPWG at 3:30. Bob asked if the product outline should be presented to the RT. John stated that it needs to be flushed out more. Ray prepared some ideas for alternatives and "no action". Also included is the purpose and need statement.

DRAFT ANNOTATED OUTLINE FOR RESTORATION PLAN

Sandy stated this outline explains what you are going to do. Bob asked if revisions could be made to this document after it is given to the Restoration Team. John stated yes. Sandy requested any revisions or editorial comments from the group. Bob stated that "final version" is not necessary. John suggested in Section I combining C and D under one heading. Bob suggested adding "and how they were used" to the first sentence under the summary of Public Comments on Restoration Framework. Sharon stated the criteria used to set priorities needs to be stated. The outline seems to be a description of process and not decisions. Bob stated that the heart of Section III.C are the conclusions. John suggested changing how criteria "were" applied to "are". Under IV.D, Bob suggested deleting "computer assisted". Bob suggested putting the proposed action under the purpose of the document. Bob suggested having parallel chapters for alternatives. Sharon stated that the description of the alternatives in the Restoration Plan may be different from how they are described in the EIS. Sharon read several definitions for the no action alternative. RPWG needs to come to consensus on what is included in the no action alternative. Mark stated that the no action alternative has no fiscal implications. The no action alternative should be more explicit and indicate natural recovery in parenthesis. All sentences except the first sentence in V.E are deleted. John suggested deleting the term "damaged" from services. Sharon stated that there will be a duplication of effort between RPWG and Walcoff and asked for any suggestions for reducing duplication. Sandy stated that the plan has to sufficiently stand on its own for the sake of the process. Sharon stated her only concern was being sued for an inadequate EIS. Sandy stated the EIS should strive to be shorter but adequately describe the alternatives by referencing. Sharon stated that the two documents should be similar under I.B, II, VI and Appendices. Under legal consideration, additional statutes and regulations may be added during agency and legal review. Sandy suggested asking the Restoration Team for their opinions of leaving the "legal considerations" section in. Bob suggested using subjects instead of paraphrasing statutes. Sandy stated that the legal consideration category was included when Mike Barton asked that we not do something that is already provided for in law. RPWG decided to remove the legal considerations category. Sharon suggested getting the Restoration Team's guidance on the no action

alternative described in Ray's memo. John stated that RPWG will speak with Ken first. Bob will prepare the Options Assessment flow chart as an overhead for tomorrow's Restoration Team meeting.

The following remaining agenda items will be discussed on 8/11:

How to Obtain Economic Advice on a Regular Basis as RPWG Formulates the Restoration Plan

Administrative Processes, Record Keeping, Process Record

Work Location and Schedule for the Remainder of the Week

Meeting adjourned at 2:30 and will reconvene at 3:30 for a preview of Bob's presentation.

ISSUES

REVISION OF 08/07/92
Author: Ray Thompson

ISSUE STATEMENTS

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

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

3. What level of long-term monitoring or research is appropriate to determine the rate of recovery and long-term health and management of injured species, ecosystems, and services?

4. How do special management designations for public lands and waters fit into an overall restoration program?

5. What information is valuable to the public and how should it be disseminated?

6. If there is a need for scientific, recreational or other facilities, where, how, and when should they be constructed? [7 from RT list]

7. What are the effects of restoration activities on local economies and subsistence?

8. What are the appropriate restoration strategies for restoring and/or enhancing both injured and non-injured resources and services?

9. What are the opportunities and appropriateness for long-term funding of programs through endowments?

10. How will restoration funds be managed and allocated to provide maximum opportunity for qualified parties to receive funds?

11. How will intertidal and upland habitat protection mechanisms for public and private land be integrated into an overall restoration program?

12. Should restoration activities be evaluated concurrently or hierarchically?

NOTE: Issue 2 from RT list is outside the scope of the Restoration Plan. This issue read: "Consider the pros and cons of additional cleanup activities"

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RESTORATION PLANNING WORK GROUP
AUGUST 10, 1992
10:00 a.m.

AGENDA

1. Preview of Analysis Process for Evaluation of Restoration Options and Creation of Alternatives

2. Review Draft Annotated Outline for Restoration Plan

3. Review Revised Issue Statements

4. How to Obtain Economic Advice on a Regular Basis as RPWG Formulate's the Restoration Plan

5. Administrative Processes, Record Keeping, Process Record

6. Work Location for the Remainder of the Week

RPWG I

Creating Alternatives
RPWG's Proposed Process

I. OVERVIEW

A. What is an Alternative?

- Alternatives are choices between two or among more than two things.

-- Webster's

- Alternatives are combinations of policies that represent possible ways of resolving management issues.

-- Adapted from US Forest Service

B. Why Do We Make Alternatives?

If there were no disagreement to restore the oil spill area, there would be no need to develop alternatives. However, there are strong differences of opinion on the best way to use the settlement funds.

Alternatives also would be unnecessary if the number of interested parties was small or the issue a simple choice between two mutually exclusive options. In that situation, all those concerned could be gathered together and a solution negotiated directory, or a vote taken on the desired outcome. However, most restoration issues arouse the interest of a wide spectrum of public and government parties. In addition, the range of possible solutions typically is broad and offers complex opportunities for compromise. Therefore, alternatives are used to:

- communicate the possible restoration choices,
- educate participants in the restoration planning process about the tradeoffs that are inherent in choosing among the possibilities, and
- "focus public review and comment on a reasonable range of viable approaches" to restoration (from USFS).

C. What does an Alternative Look Like?

Potential Restoration Options are the basic building block that we use to make alternatives. Options are categories of restoration activities. Examples of options are to improve stream and lake habitats for spawning and rearing of wild salmonids, or acquire extended buffer strips adjacent to anadromous fish streams. These Potential Restoration Options are explained in Chapter VI of the Restoration Framework and listed in its Appendix B .

Alternatives are clusters or groups of options that are similar in that they meet some criteria or conform to a theme. For example, one alternative might include those restoration options that have a good likelihood of restoring injured fish and wildlife populations through direct enhancement and restoration of affected habitat. Another might include those of the previous alternative plus those that provide significant replacement for injured human use. In each case, the alternative would list those Potential Restoration Options (perhaps ranked into categories) which conform to those themes.

D. Concepts for Building Alternatives

1. When different alternatives are unnecessary

Alternatives should not be created for their own sake only. Where there is a lack of controversy of the appropriateness of a restoration option, the option need not be different in different alternatives. Where an option is not feasible (technically, legally, or for some other reason), it should not be included in any alternative. Where there is general agreement that a restoration activity is appropriate, then it should be included in all alternatives (for example, all agencies might agree that a low-cost activity that quickly increases the population of an injured bird specie is appropriate in any alternative).

A consistent treatment of noncontroversial areas and subjects will streamline the development of alternatives. It also has the benefits of:

- focusing public and agency review on the areas and ideas where disagreements exist,
- simplifying the alternatives so that they are easier to understand, and
- ensuring that alternatives are realistic representations of some sector of public opinion.

2. Identifying the number and range of alternatives

The scope of the alternatives is set by the list of planning issues. The number and range of solutions is determined by the issues and opinions on resolution of those issues. Alternatives should cover the range of significant sectors of public and agency opinion. However, the number of alternatives should not be so great as to cause confusion between alternatives or to discourage the public from considering or responding to them. In addition, each alternative should be sufficiently different from other to represent a unique solution to the issues and offer a genuine choice. Alternatives should provide a spectrum of choices, but need not define each point on the spectrum. A suggested guideline is that 3-5 alternatives might be developed in most cases. It is possible, though unlikely, that fewer or more alternatives might be appropriate.

In addition, if there are different categories of decisions, sometimes different categories of alternatives are useful. Thus, it is possible to have three alternatives that decide direct restoration options only, and two or three that deal with, say, habitat acquisition. In this case, people would choose one alternative from each category. If each category of alternatives

addresses a different decision facing the trustees, dividing alternatives in this way can organize the questions for the public.

II. WORK COMPLETED BEFORE THIS SUMMER.

A. Compiling Restoration Ideas

In 1990, ideas for restoration were compiled from the sources listed below:

Scoping Public Meetings held by RPWG April-May 1990
March 1990 Symposium
Literature Review
April 1990 Technical Workshop
1990 Feasibility and Technical Support Studies

These ideas were compiled in the August 1990 Progress Report: Restoration Planning following the Exxon Valdez Oil Spill.

B. Building the Building Blocks: *Evaluation Restoration Options*

The ideas in the 1990 Progress Report were evaluated using the Criteria in Chapter VI of the 1992 Restoration Framework . This shorter list of Potential Restoration Options is Appendix B of the 1992 Restoration Framework.

The Potential Restoration Options in that Appendix B are now the building blocks to create alternatives.

III. GROUPING RESTORATION OPTIONS INTO ALTERNATIVES: AN OVERVIEW

A. Rate each option by criteria.

An example matrix illustrates the process:

Option 11: Improve Stream and Lake Habitats for Wild salmonids

Criteria:	
Science Criteria	
Potential to Improve Recovery	H
etc.	M
etc.	H
Socioeconomic Criteria	
etc.	L
etc.	H

The matrix above is an example of the matrix will be filled out rating each criteria for each of the options. The result will be a master matrix which could be displayed on the wall. For ease of manipulation, it will be entered into a simple computer database.

The criteria are chosen to illustrate the characteristics and values that are important to the trustees and the public. That is, they should highlight the characteristics of the options that the public and trustees use when making decisions among the options.

B. Sorting the Options into Alternatives.

At this stage, RPWG must choose Alternative Themes. The themes provide general guidance for assigning appropriate restoration options to each alternative. They allow the public and trustees to readily understand the general philosophy behind each alternative and to illustrate the choices that must be made.

The options are sorted into the alternative themes by applying decisions rules to the matrix of options and criteria. The decision rules tell the computer that options that have certain ratings on individual criteria should be included in the alternative (e.g., options which are rated "H" on criteria 1, 3, and 5 and are rated "M" or "H" on criteria 6 and 7 might be put into Alternative #1.) The product of these decision rules the group of options that correspond to the theme of the alternative. The decisions rules use the criteria in the matrix to sort the options and express

the theme of the alternative.

C. Concepts for writing Criteria and Decision Rules.

1. Criteria should emphasize how the public makes decisions. The goal is not to choose the "best" restoration options. Rather, it is to illustrate how choices must be made among the options. Therefore, criteria should represent those characteristics and values that the public and trustees use to judge options. For example, one characteristic important to the public might be the biological efficiency of an options: will it work? Will it go far toward restoring the population of a injured specie? Another might be whether it will restore human services (recreation, public use, etc)? And so on.

2. Keep it simple. The process should be simple. Since the process is designed to help the public make decisions, it must be easily understood by the public. Black-box decision process are not acceptable. While we should not leave out important characteristics, a long list of criteria is probably too complicated. Fewer is better than more.

3. Criteria must be defined. The process must be repeatable. That is, other people rating an option on the criteria we choose should come up with the same ratings. And if we rate an option incorrectly, people must be able point out our error. This requires that each rating be clearly defined. A "High" versus a "medium" rating must be based on how the option fits into the "high" versus "medium" definitions. Some subjectivity is impossible to avoid, but the definitions should be as explicit as possible.

4. Criteria should be comprehensive. Criteria that fit into a system are better than those that appear to be randomly chosen. Criteria should appear to the reader to be mutually exclusive and collectively exhaustive.

IV. A SUMMARY IN FLOW CHARTS

The flow chart that follows graphically show the grouping process.

the theme of the alternative.

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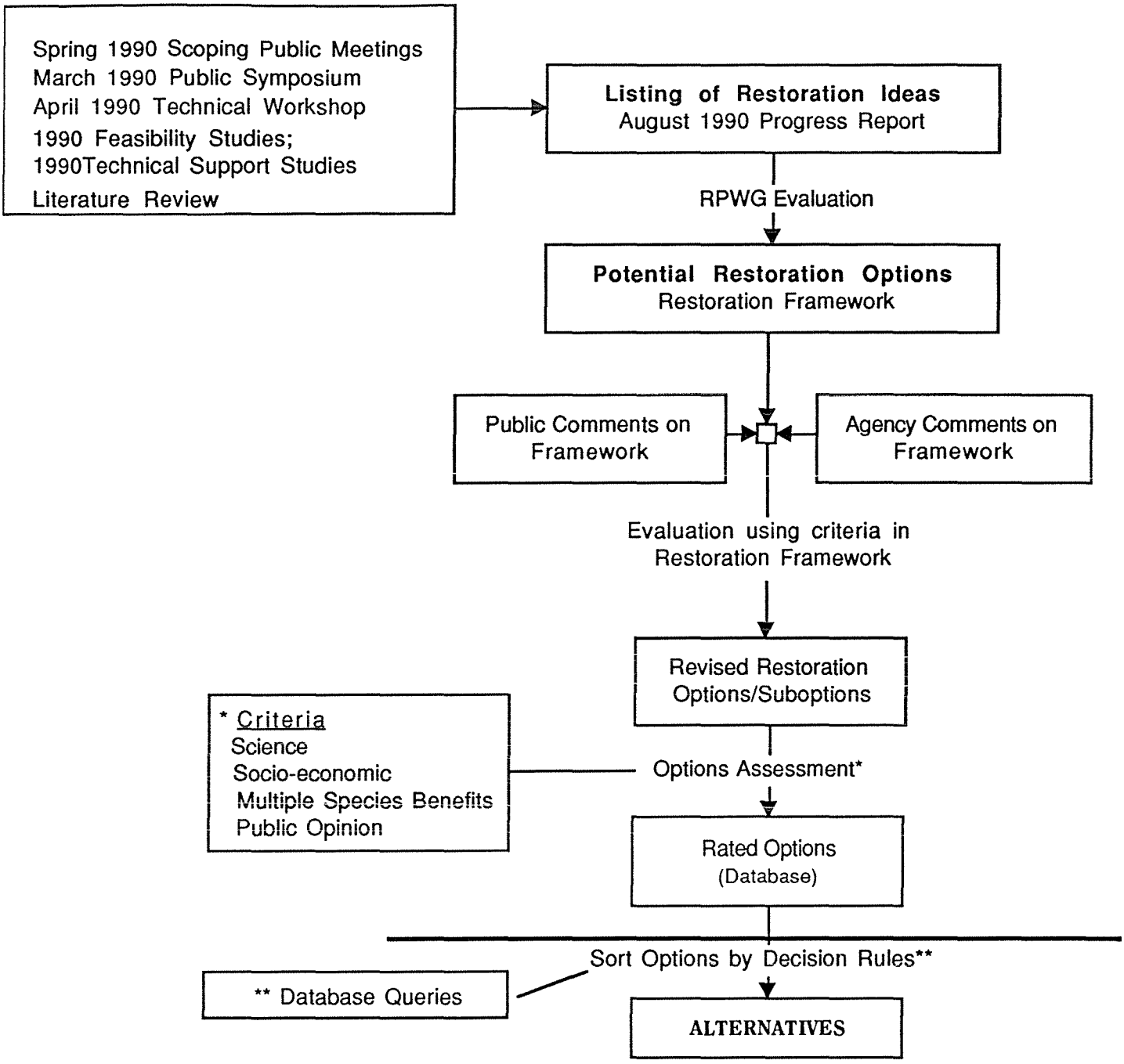
OPTIONS ASSESSMENT



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Restoration Option Assessment Matrix

CRITERIA

RESOURCE	OPTION	DIRECT REST	REPLACE	ACQ EQ RESOURCE	SCIENCE 1	SCIENCE 2	SCIENCE 3	SCIENCE 4	SCIENCE 5	SOCIO-ECO 1	SOCIO-ECO 2	SOCIO-ECO 3	SOCIO-ECO 4	SOCIO-ECO 5	MULTI_ SPECIES BENEFITS	ENHANCE
Otters	7	Y	N	N	L	H	M	H	L	L	H	M	M	L	N	Y
	9	N	N	Y	H	M	M	L	L	L	L	H	M	M	Y	N
	15															
	23															
Murres	6															
	13															
	22															
	23															
	25															
HQD	3															
	4															
	7															
	16															
	28															

8/10/92

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Process to Identify and Evaluate Restoration Options

John Strand, Stanley Senner, Arthur Weiner,
Sanford Rabinowitch, Mark Brodersen, Kenneth Rice,
Karen Klinge, Susan MacMullin, Ruth Yender,
Carol Gorbics and Raymond Thompson.

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645 "G" Street
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ABSTRACT: The restoration planning process to date has yielded a number of alternatives for restoring resources and services injured by the *Exxon Valdez* oil spill. They were developed by resource managers, scientists and the public, taking into consideration the results of damage assessment and restoration studies, and information from the scientific literature. The broad alternatives thus far identified include: 1) no action-natural recovery, 2) management of human uses, 3) manipulation of resources, 4) habitat protection and/or acquisition, 5) acquisition of equivalent resources, and 6) some combination of the above. Each alternative consists of a different mix of resource or service specific restoration options.

To decide whether it was appropriate to spend restoration funds on a particular resource or service, criteria were first developed that evaluated available evidence for consequential injury and the adequacy and rate of natural recovery. Once it was decided that a particular resource or service warranted restoration action, and it was recognized that a range of effective restoration options were possible, a second set of criteria were applied to determine which restoration options were the most appropriate and beneficial. These criteria included technical feasibility, potential to improve the rate or degree of recovery, the relationship of expected costs to benefits, cost effectiveness, and the potential to restore the ecosystem as a whole. Those options considered to be appropriate and beneficial, and others yet to be identified, will be presented in a draft restoration plan and further evaluated in a draft environmental impact statement.

INTRODUCTION

The restoration planning process following the *Exxon Valdez* oil spill has focused on identifying, evaluating and integrating information about the nature, extent and persistence of injuries to natural resources and services, the rate and adequacy of natural recovery, and the opportunities for restoration. This is a dynamic process that changes as new information is received but will culminate in the publication of a restoration plan in early 1993. The damage assessment and restoration science studies are the primary sources of information on injuries. Other sources include data collected during the oil-spill clean-up, public comments and the scientific literature.

It is the intent of this paper to review the initial planning approach taken by the *Exxon Valdez* Oil Spill Restoration Planning Work Group (RPWG) to identify and evaluate restoration options following the oil spill. It is also our intent to look at some of the special problems encountered during restoration planning and how they were addressed. It is our hope that insights developed during this planning process may be of use to others faced with a similar task.

IDENTIFICATION OF RESTORATION OPTIONS

To date, the restoration planning process has identified the widest possible array of restoration options, based on suggestions from the public, technical experts and the literature. As early as March 1990, a public symposium was organized as the first formal opportunity for the public and experts from within and outside Alaska to express their views about what a restoration plan should include. A published proceedings (RPWG, 1990) recorded the presentations given and the comments aired at the symposium.

Soon after the symposium, RPWG initiated public scoping meetings in some of the communities that were directly affected by the oil spill. The purpose of these meetings was to identify options for restoring injured resources and services, and to gain a sense of the public's priorities for restoration. A summary of the local public scoping meetings and written comments may be obtained from the RPWG (RPWG, 1990).

A three-day technical workshop also was held in April 1990 to exchange ideas for restoration. The workshop was attended by academic and agency scientists, resource managers and planners and explored a broad range of actions that could be implemented to restore injured ecological, cultural and recreational resources and services in Prince William Sound and the Gulf of Alaska. The workshop was closed to the public and a written proceedings was not published because confidential damage assessment information was discussed.

Although RPWG will continue to invite ideas for restoration throughout the planning process, RPWG has now organized these ideas and has begun to assemble the information necessary to evaluate them. A total of 35 candidate restoration options have been identified to date and have been presented to the public (Exxon Valdez Oil Spill Trustees, 1992) for review and comment. These are shown in Table 1.

DEVELOPMENT OF INJURY CRITERIA AND IDENTIFICATION OF RESOURCES AND SERVICES THAT WARRANT RESTORATION

The settlement document (United States District Court District of Alaska, 1991) specifies that the use of the restoration trust fund must be linked to injuries resulting from the *Exxon Valdez* oil spill. Specifically, the settlement requires that funds recovered for natural resource damages be spent

to restore, replace, enhance, rehabilitate or acquire the equivalent of "of natural resources injured as a result of the oil spill and the reduced or lost services provided by such resources."

The following criteria were proposed to assist in the determination of which natural resources and services warranted further restoration activities.

1) evidence of consequential injury, and
2) adequacy and rate of natural recovery.

Injury to Natural Resources

In this context, "consequential injury" indicates a loss attributable to exposure to *Exxon Valdez* oil, or otherwise attributable to the oil spill and clean-up. "Loss" for injured natural resources is defined as:

1) significant direct mortality;
2) significant declines in population size or productivity;
3) significant chronic and sublethal effects;
4) degradation of habitat due to contamination by oil or due to clean-up.

Injury to Natural Resource Services

A natural resource service has experienced "consequential injury" if the oil spill or associated clean-up has:

1) significantly reduced the physical or biological functions performed by natural resources; or

2) significantly reduced aesthetic, intrinsic or other indirect uses provided by natural resources, or, in combination with either of these;

3) resulted in the continued presence of oil on lands integral to the use of special-purpose lands. "Special-purpose" lands have been designated by the State of Alaska or Federal Government for the protection and conservation of natural resources and services.

Examples of services injured during the spill include commercial fishing, subsistence hunting, fishing and gathering, wildlife viewing, sport fishing and recreation, which includes a variety of activities such as kayaking and backcountry camping and hiking. Indirect (intrinsic) uses such as aesthetics or appreciation of wilderness have also been affected by the spill.

CRITERIA TO EVALUATE RESTORATION OPTIONS

To aid in determining which of the many restoration options are likely to be appropriate and most beneficial, RPWG developed and/or adopted from the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. 9601) the following criteria:

1) The effects of any other actual or planned response or restoration actions:

Are there other actions, such as additional clean-up, that could bear on recovery?

2) Potential to improve the rate of recovery:

Will implementation of the restoration option make a difference in the recovery of the injured resource or service?

3) Technical feasibility:

Are the technology and management skills available to successfully implement the restoration option?

4) Potential effects of the action of human health and safety:

Are there hazards or adverse impacts associated with implementation of the restoration option?

5) The relationship of expected costs to expected benefits:

Do benefits equal or exceed costs? This is not intended to be a straight cost/benefit analysis, but a broad consideration of the direct and indirect costs including lost uses and the primary and secondary benefits associated with implementation of the action.

6) Cost effectiveness:

Does the action achieve the desired objective at the least cost?

7) Consistency with applicable laws:

Is the option consistent with the directives and policies with which the Trustee agencies must comply?

8) Potential for additional injury resulting from the option:

Will implementation result in additional injury to either target or nontarget resources or services?

9) Degree to which the restoration option enhances the resource or service:

Would the option improve on or create additional resources and services?

10) Degree to which option benefits more than one resource or service:

Would the option benefit multiple injured resources and services?

11) Importance of implementing the option within the first year:

Would delay in restoring a resource or service result in further injury or would we forgo a restoration opportunity?

FURTHER EVALUATION OF RESTORATION OPTIONS

Following a review of public comment on the 35 candidate restoration options including suggestions for additional options, more detailed evaluations of each option will follow. To assist in this evaluation, RPWG will review databases for each injured resource and service. Data relevant to this evaluation will be derived from the scientific literature, geographic information system and the reports of clean-up, damage assessment and restoration science studies. Subject areas will include:

1) the nature and severity of injury;
2) the rate of natural recovery;
3) life history requirements;
4) factors limiting recovery;
5) persistence of contaminants;
6) opportunities to accelerate the rate of recovery;
7) costs and environmental impacts of accelerating recovery; and
8) land status and existing management practices.

For some injured resources and services, much of this data is in hand; in other cases their are substantial deficiencies in the databases that could impede evaluation. To remedy this, additional field work will be recommended in annual work plans. These studies are developed in consultation with scientists representing the Trustee agencies and outside peer reviewers.

EVALUATION OF RESTORATION OPTIONS FOR IDENTIFYING AND PROTECTING MARINE AND UPLAND HABITATS

All proposed restoration options, including habitat protection and acquisition, will be evaluated using the basic criteria

described above. By necessity however, additional steps will be needed to properly evaluate habitat protection and acquisition options.

In its Draft 1991 Restoration Work Plan (Exxon Valdez Oil Spill Trustees, 1991), the Trustees set forth a preliminary sequence of steps for use in identifying and protecting strategic fish and wildlife habitats and recreational sites. While the Trustees are developing a final process for evaluating habitat protection options and they have issued a Framework Supplement (Exxon Valdez Oil Spill Trustees 1992) that proposes a detailed Habitat Protection and Acquisition Process for public review and comment, the steps that are thought to be necessary are:

1) identification of key upland habitats that are linked to the recovery of injured resources and services by scientific data or other relevant information. This includes an analysis of imminent threat that recognizes the need to respond to a proposed change in land use that could foreclose habitat protection or other restoration opportunities.

2) Characterization and evaluation of potential impacts from changed land use in relation to their effects on recovery of the injured ecosystem and its components; comparative evaluation of recovery strategies not involving acquisition of property rights (e.g., redesignation of land use classification), including an assessment of protection afforded by existing law, regulations and other alternatives.

3) Evaluation of cost-effective strategies to achieve restoration objectives for key upland habitats identified through steps one and two above. This would include evaluation of other restoration alternatives for resource injuries.

4) Willing seller/buyer negotiations with private landowners for property rights.

5) Incorporation of acquired property rights into public management.

DEVELOPMENT OF PREFERRED AND OTHER RESTORATION ALTERNATIVES

The key element in the forthcoming Exxon Valdez Oil Spill Restoration Plan will be a description of a "preferred" action (alternative) and inclusion of a reasonable range of other restoration alternatives. The basis for this requirement is the National Environmental Policy Act of 1969 (NEPA) (Council on Environmental Quality, 1986). Each alternative must be analyzed for its consequences and impacts in an environmental impact statement (EIS). In this particular case, a programmatic EIS will be published simultaneously with the restoration plan.

By our working definition, a restoration alternative will consist of a set of restoration options designed to restore each resource or service injured by the oil spill. The assumption is that more than one restoration option can be used in restoring any specific injured resource or service. Each alternative, then, while addressing the restoration of each injured resource and service, achieves restoration through a different mix of restoration options. To date, six possible conceptual restoration alternatives have been identified. They are provided here for discussion purposes only and do not at this time indicate any preference of the Trustees.

No Action

One possible alternative is to undertake essentially no restoration but to rely upon natural recovery to restore the injured ecosystem and its associated

services. This alternative assumes that cognizant State of Federal authorities will not increase management from existing levels for injured resources and services. Monitoring, however, would be conducted to assess whether or not natural recovery is proceeding as anticipated.

Management of Human Uses

This alternative would use existing Federal and State management authorities to modify human use of injured resources or services.

Examples:

1) restrict or eliminate legal harvests of sea ducks (Option ?) and cutthroat trout (Option ?) , and

2) intensify management of fish and shellfish (Option No. ?).

Manipulation of Resources or Services

This alternative focuses on measures taken directly, usually on- site to rehabilitate or replace an injured species, restore a damaged habitat or enhance services provided by a damaged resource.

Examples:

1) improve or supplement stream and lake habitats for spawning and rearing of wild pink and sockeye salmon (Option 11), and

2) accelerate recovery of the upper intertidal *Fucus* communities (Option 14).

Habitat Protection and Acquisition

This alternative includes changes in management practices on both private and public lands and the creation of "protected" areas on existing public lands in order to prevent further damage to injured resources. Going beyond land management practices, there also are options that involve acquisition of damaged habitats or property rights short of fee simple title.

Examples:

1) designation of a National Marine Sanctuary or Alaska State Refuge, Sanctuary or Critical Habitat Area (Option 22), and

2) acquire additional marine bird habitat (Option 23).

Acquisition of Equivalent Resources

Another possible alternative is the acquisition of equivalent resources as opposed to an alternative that attempts to directly restore or rehabilitate injured resources and services. Acquisition of equivalent resources means to compensate for an injured resource by substituting another resource that provides the same or substantially similar service as the injured resource or service (Exxon Valdez Oil Spill Trustees 1991). However, direct restoration approaches (manipulation of resources and services, habitat protection and acquisition) also can be implemented on an equivalent resource basis.

Examples:

1) creation of new recreational facilities (Option 12), and

2) acquire tidelands (Option 21).

Combination Alternatives

Each of the above alternatives may be considered strictly on its own merit or mixed in a number of ways, depending on priorities and approach. For example, Figure 1 presents a hierarchical analysis scheme through which one could only consider "habitat protection and acquisition" after considering whether options under "management of human uses" and "manipulation of resources or services" were inadequate to achieve restoration. In the concurrent analysis scheme shown in Figure 2, one could give equal weight to all approaches, proceeding to those options deemed most desirable based on professional and scientific judgement and public.

PROBLEMS ENCOUNTERED AND LESSONS LEARNED

Having come this far was not always easy. There have been a number of problems encountered along the way that have greatly impacted our planning process and specifically our ability to render decisions in a timely manner. For some problems, we can provide insight into possible solutions; for others, we are yet to find a lasting solution. In these cases, however, it still may be of value to the reader to be forewarned of their existence in the event he/she is faced with a similar planning task. The most commonly encountered problems to date have been:

Imperfect Database

In many cases our knowledge of the nature and severity of injury are imperfect. This is due to the length of time required to generate meaningful assessments of injury (sometimes 3-5 years) for certain species, or due to the restricted scope of the damage assessment program. For logistical and fin For logistical and financial reasons, all injured species were not studied in

detail, e.g., red throated loons, pigeon guillemots, etc. In those cases were data were imperfect, judgements concerning injuries to natural resources and particularly injured services as a result of the oil spill have to be determined by the weight of available evidence and best professional judgement. This also suggests that the Restoration Plan will need to be flexible and be receptive to new information as it is generated.

Following the oil spill, studies in support of clean-up (these were monitoring studies) were conducted and managed separately from damage assessment studies. There also was no serious attempt to integrate these studies. Because different survey objectives and designs were used, results were often contradictory, and/or the results could not be rigorously compared. This issue increased the problem of an imperfect data base upon which decisions had to be made. Unfortunately, the RPWG could not delay their work until a better database became available. Again our approach was to make decisions on the best available information and on our collective professional judgement.

Because of the shroud of litigation, we were not always privy to the results of all damage assessment studies. The results of economics studies to assess the impacts of the oil spill on human services inclusive of commercial and sport fishing, other recreation, subsistence and intrinsic values are still not available. Again this resulted in an imperfect database. In this particular case, we still do not know the nature and severity of injury to all human services and could be open to criticism if we make recommendation for their restoration based upon imperfect data.

Agency Bias

Early in the planning process, we recognized that each Trustee agency came to the planning table with a certain agency "bias" or "vested interest." The

reality that the Trustee agencies also conduct the clean-up, damage assessment and restoration science studies accounts for this impediment. While to some degree this problem still exists, it has been greatly mitigated by adopting a consensus process in making decisions. For the most part, no decisions have been made by RPWG using traditional majority-minority opinions. Decisions are made by group agreement when everyone could support a proposal with no objections or vetoes expressed.

Lack of Appropriate Expertise

Not all the expertise (ologies) that was required was available to RPWG at the table or to the Trustee agencies at the time of the spill. It was recognized early-on that we had little or no experience in economics or environmental compliance (NEPA). While most agency representatives serving on RPWG had a science background, this background did not include experience with oil spills or their impacts. No one had a background that included restoration. Oftentimes, agency assignments were made simply on the basis of personnel availability; that is, who was available for reassignment. There was little or no pre-spill understanding that "restoration" required a truly interdisciplinary approach. This problem has been solved in part through use of outside peer reviewers and by a "quick" education provided by the peer reviewers, agency and academic scientists.

Non-Continuity of Membership

The lack of continuity of our membership was and still is a real problem. Each time we lose an old member and a new member is appointed, a significant amount of time is spent in educating the new member. The high rate of turnover likely resulted from a tendency to make temporary appointments to RPWG from the Trustee agencies. For others it has been a problem of "burn-

out." To some degree this problem has been mitigated by the settlement and the availability of more funding to hire additional staff. Making permanent assignments of staff by recruiting outside the agencies and making permanent reassignments from within the agencies has also helped.

ACKNOWLEDGEMENTS

REFERENCES

1. Exxon Valdez Oil Spill Trustees, 1992. Exxon Valdez Oil Spill Restoration. Volume I. Restoration Framework. Exxon Valdez Oil Spill Trustees, Anchorage, Alaska. 52pp.

2. Council on Environmental Quality, 1986. Regulations for implementing the Procedural Provisions of the National Environmental Policy Act. Reprint 40 CFR Parts 1500-1508 (as of July 1, 1986). Council of Environmental Quality, Executive Office of the President, Washington, D.C., 45pp.

3. Environmental Protection Agency, 1991. Prince William Sound and Gulf of Alaska Restoration. Federal Register v56, n41, pp 8898-8903.

4. Restoration planning Work Group, 1990. Restoration Planning Following the *Exxon Valdez* Oil Spill. August 1990 Progress Report. Restoration Planning Work Group, Anchorage, Alaska. 80pp.

5. Restoration Planning Work Group, 1990. Restoration Following the *Exxon Valdez* Oil Spill. Proceedings of the Public Symposium, Anchorage, Alaska. 174pp.

Table 1. Restoration options for further consideration

MANAGEMENT OF HUMAN USES

1) protect archaeological resources
2) intensify management of fish and shellfish
3) increase management for fish and shellfish that did not previously require intensive management
4) Reduce disturbance at marine bird colonies and marine mammal haul-out sites and rubbing beaches
5) reduce harvest by redirecting sport-fishing pressure
6) redesignate a portion of the Chugach National Forest as a National Recreation Area or Wilderness Area
7) increase management in parks and refuges
8) restrict or eliminate legal harvests of marine and terrestrial mammals and sea ducks
9) minimize incidental take of marine birds by commercial fisheries

MANIPULATION OF RESOURCES

10) preserve archaeological sites and artifacts
11) improve or supplement stream and lake spawning and rearing habitats
12) create new recreation facilities
13) eliminate intertidal sources of contaminated prey and spawning substrates
14) accelerate recovery of upper intertidal (*Fucus*) zone
15) supplement intertidal spawning substrates (algal and other) for herring
16) test feasibility of enhancing murre productivity
17) eliminate introduced foxes and other predators from islands important to nesting marine birds
18) replace fisheries harvest opportunities by establishing alternate salmon runs

Table 1 (continued)

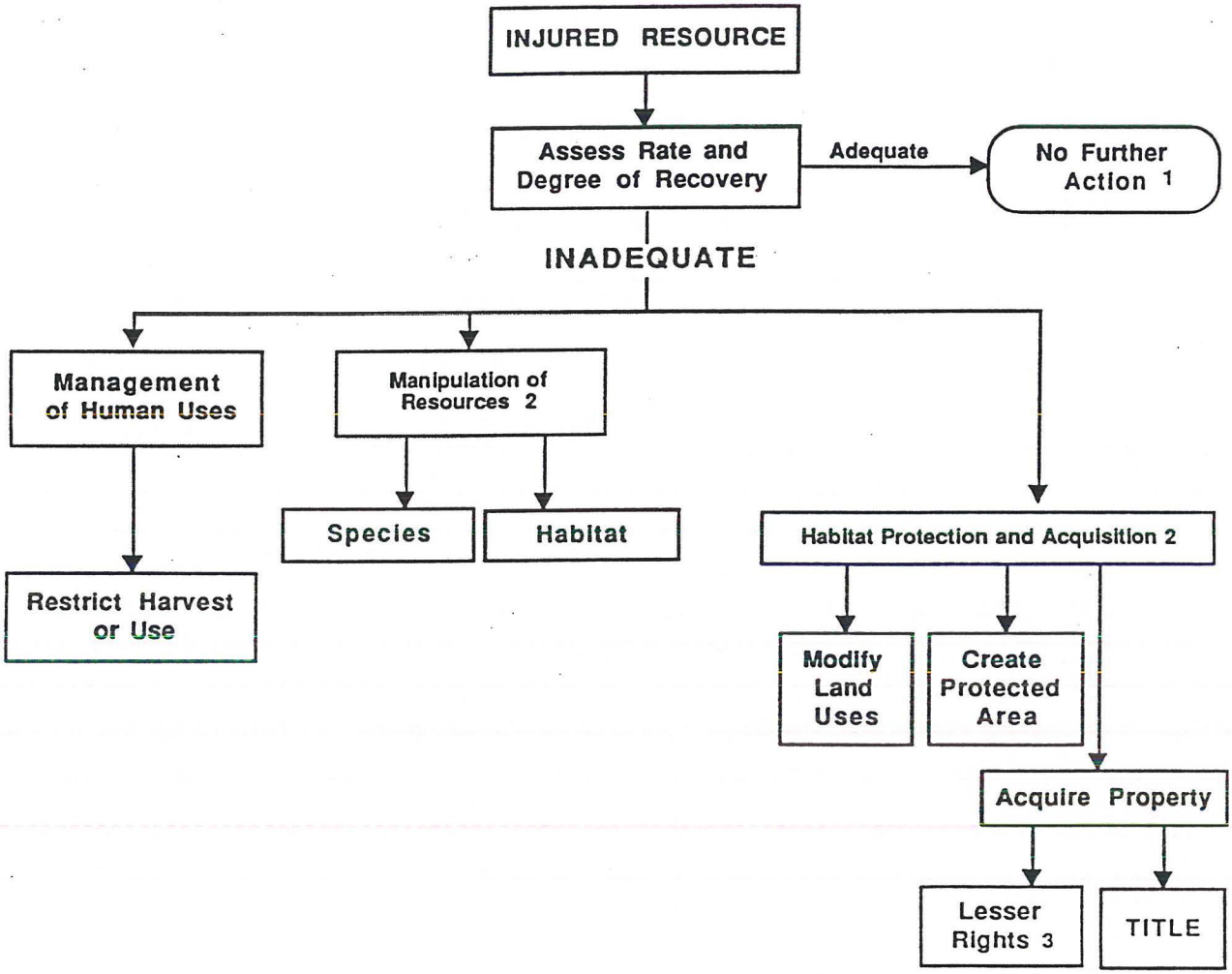
HABITAT PROTECTION AND ACQUISITION

19) update and expand the State's Anadromous Fish Stream Catalog
20) establish an *Exxon Valdez* oil spill "special management area"
21) acquire tidelands
22) designate protected marine areas
23) acquire additional marine bird habitats
24) acquire "inholdings" within parks and refuges
25) protect and acquire upland forests and watersheds
26) acquire extended buffer strips adjacent to anadromous fish streams
27) designate and protect "benchmark" monitoring sites
28) acquire access to sport-fishing streams
29) establish or extend buffer zones for nesting birds

OTHER OPTIONS

30) test subsistence foods for hydrocarbon contamination
31) develop comprehensive and integrated monitoring program
32) endow a fund to support restoration activities
33) develop integrated public information and education program
34) establish a marine environmental institute
35) replace (return) archaeological artifacts

Figure 7. Possible conceptual approach to the analysis of restoration options. This approach does not involve an hierarchical analysis of restoration options.



1 All restoration actions will be evaluated to assess their effectiveness on the recovery rate of the target injured resource.

2 These approaches can be implemented on a direct-restoration or equivalent-resource basis.

3 Acquisition of full title or lesser rights exclusive of fullownership of title (partial interests), e.g., conservation easement, timber rights, access rights, etc.

RPWG I

EVOS alternative development schemes and results.

Draft Draft

Author: Ray Thompson, Restoration Planning Working Group
Date: August 10, 1992

As noted in the Restoration Framework, pg. iv, several restoration alternatives have been identified for scoping purposes. These alternatives proposed a set of restoration options specific to the alternative focus for restoration action. However there was no definition given to the No Action, Acquisition of Equivalent Resources, or Combination alternatives. I will assume the Combination alternative(s) could combine and infinite set of options. I am also concerned that the Acquisition of Equivalent Resources alternative would be definitive only after a determination of injury and the effects to injury were well understood. In this case the effects analysis of various alternatives would be developed and any acquisition would result from restoration needs rather than guide restoration needs.

The no-action alternative has not been defined. With our obligation to consider all reasonable alternatives (40 CFR 1502.14) we need to consider a no-action alternative. To do this we need to come to an agreement on what the no-action alternative says.

A no-action alternative is commonly defined in two ways depending upon the nature of the proposal being evaluated. To quote from the Forest Service Handbook, 1909.15,

> "The first interpretation involves an action....where ongoing programs initiated under existing legislation, regulations, and budget allocations continue, even as new plans are developed. In these cases, no action is no change from current management direction or from level of management intensity. Consequently, the responsible official would compare the projected impacts of alternative management schemes to those impacts projected for existing plans. The second interpretation of no action is that no action or activity would take place,...."

From this discussion of no-action alternatives, I interpret that it is our obligation, based upon the Settlement, to take restoration action which is different from the current scenario of annual work plans, specific to short term restoration actions. I do not think there is an option of no restoration activity. Based upon this argument I have developed the attached statement of Purpose and Need. The no-action and action alternatives, to include the preferred action, should meet these purposes and needs. If we adopt the first interpretation of no-action I believe it, as a restoration alternative, meets the purpose and need for a Restoration Plan, however the plan may be defined.

I think the no-action as portrayed in Chapter VII, SCOPE OF POTENTIAL RESTORATION ALTERNATIVES, pg. 47, Restoration Framework is an action alternative. Letting natural recovery processes provide for restoration is likely a long-term process. To use the effects of this alternative as a basis for evaluation of effects of other alternatives would be difficult at best.

We have not defined the effect of natural recovery, and we may not for several years. To use the effects of natural recovery, as the basis for comparison of the effects of other alternatives, could significantly delay the development of a restoration plan, which is to be completed and implemented within the scope of the Settlement, i.e., 10 years.

Other alternatives presented in Chapter VII are appropriate, with the possible exception of alternative E., Acquisition of Equivalent Resources. I have discussed this above.

During the development of combination alternatives it is my impression that a reasonable approach is to stack the high-value options. For the preferred alternative it may be the highest value options affecting the greatest number of injured rescurces and damaged services. For a "service" alternative it could be the high value options which benefit service activities. This could go on for any focus we would want to take. Lesser-value options could certainly be included in an alternative, but would not be prominent.

END

PURPOSE AND NEED
EVOS
RESTORATION PLAN

Draft Draft

Author: Ray Thompson Date: 08/06/92

It is assumed for developing a Purpose and Need statement for the EVOS Restoration Plan that the Restoration Planning Working Group(RPWG) is focusing on the program need for restoration of injured resources and damaged services in the Exxon Valdez oil spill area. The public, political scientific and land management communities have helped identify and define management opportunities, management practices, restoration options and issues for implementing restoration.

With this in mind the Purpose and Need of the Restoration Plan is to:

* GUIDE A 10-YEAR RESTORATION PROCESS;
* PROVIDE FOR APPROPRIATE(SETTLEMENT BOUND) INTERAGENCY EXPENDITURE OF NEARLY $1 BILLION;
* PROVIDE AGENCIES WITH PROGRAM DIRECTION FOR THE RESTORATION OF INJURED RESOURCES AND DAMAGED SERVICES;
* ESTABLISH RESTORATION PARAMETERS FOR DEVELOPMENT OF ANNUAL WORK PLANS, i.e. PROJECT WORK, AND FOR NEPA COMPLIANCE PRIOR TO PROJECT IMPLEMENTATION;
* PROVIDE FOR PROGRAM REVIEW WHICH INVOLVES INTERESTED AND AFFECTED PUBLICS;
* UTILIZE COMBINATIONS OF RESTORATION OPTIONS TO PROVIDE FOR RESTORATION;
* TAKE ADVANTAGE OF "GOOD" SCIENCE; and
* PROVIDE A DESCRIPTION OF EFFECTS OF RESTORATION

which will potentially restore injuries and damages to pre-spill conditions and document the process.

end

Draft Draft

Draft Outline
DRAFT RESTORATION PLAN

8/7/92

i. Cover Letter

ii. Comment Sheet

iii. Table of Contents

iv. Executive Summary

I. Introduction

A. Purpose of document

Explains the function of the Draft Restoration Plan as providing overall direction for the restoration process and guidance for implementation of annual work plans, including all anticipated annual and periodic activities. Explains the relationship between alternatives, options and restoration projects. Presents preferred, no action, and all other alternatives.

B. Background

Summarizes the history of the oil spill, including the clean-up; pre-settlement NRDA program; criminal and civil settlements; and the EVOS trustee organization and administration.

C. Spending guidelines from civil settlement

Summarizes guidelines for spending civil settlement money. Includes a description of the decision-making process for expenditures.

D. Spending guidelines for the criminal settlements (state and federal) and their relationship to spending guidelines for the civil settlement.

Summarizes state and federal guidelines for spending criminal settlement money. Explains relationship to civil settlement guidelines.

E. Relationship to Draft Environmental Impact Statement

Following a brief outline of the NEPA process, the relationship of the Draft Environmental Impact Statement (DEIS) to the Draft Restoration Plan will be explained. Explains that the DEIS will be programmatic in nature and the impacts of the preferred restoration

alternative will be presented and compared with those of all other restoration alternatives.

II. Summary of Public Comments on Restoration Framework

Presents the number and nature of the comments received on the Restoration Framework. Explains the RPWG review process and subsequent generation of issue statements, which are integral to the Draft Restoration Plan and the DEIS.

III. Injured Resources and Services

A. Final version of criteria for selecting injured resources and services

Injury criteria will be listed and briefly explained. Any changes from those in the Restoration Framework will be explained.

B. How criteria were applied

The decision-making process for applying the injury criteria will be explained.

C. Listing and summary tables/graphics for resources and services that meet the injury criteria

Presents information on the range of injuries from the ecosystem level to individual resources and services. Injuries will be explained in terms of injured life history stages or user groups, the geography of the injury, and the status and prospects for natural recovery.

IV. Restoration Options

A. Explanation of restoration options

Briefly explains restoration options and lists them by category.

B. Final version of criteria for evaluating restoration options

Identifies and defines criteria that were used in evaluating and ranking candidate restoration options. Explains any changes from Restoration Framework.

C. How criteria were applied

Describes the process used in ranking options (as high, medium, or low) as to their probability of success in

restoring injured resources and services. Includes a description of the computer-assisted process used in sorting the database to generate candidate restoration alternatives.

D. Final version of criteria for screening habitat protection and acquisition projects

Identifies and defines threshold and other criteria.

E. How the criteria will be applied in the process of screening habitat protection and acquisition projects

Describes the evaluation process that will be used in identifying and prioritizing habitat for protection and acquisition. Includes description of imminent threat analysis for determining whether accelerated protection is required due to immediate threats to restoration potential.

V. Restoration Plan Alternatives

A. Proposed action

Presents the proposed action (presented in the Restoration Framework) and briefly explains how the alternatives could accomplish the goals of the proposed action.

B. Preferred alternative

Describes the scope and nature of the preferred alternative. Presents a summary of the options included and considers the following: responsiveness of the alternative to recognized injuries and the proposed action, timing of implementation, geographic scope of application, and relative amounts of funding required for option categories (e.g., management of human uses, habitat acquisition and protection, etc.).

C. No action alternative

Describes the scope and nature of the no action alternative. Explains reliance on natural processes and the limited activities that would occur. Distinguishes between these and the more active restoration options presented in other alternatives.

D. Other alternatives

Describes the scope and nature of the other (1-3) alternatives. Presents a summary of the options

included in each alternative and considers the following; responsiveness to recognized injuries and the proposed action, timing of implementation, geographic scope of application, and relative amounts of funding required for option categories presented in each alternative (e.g., management of human uses, habitat protection, etc.).

E. Comparison of alternatives

Describes the significant differences between the alternatives so the public can readily see the choices presented. Charts and matrices could effectively summarize this information. This section would also summarize how the alternatives respond to public comments and subsequently written issue statements.

VI. Implementation Process for Life of the Settlement

A. Public participation

Describes how the Trustee Council will continue to provide for meaningful public involvement over the life of the settlement. This will include information about the Public Advisory Group (i.e., the process used to establish it and any accomplishments to date) and all other efforts by Trustee Council staff to accomplish this goal.

B. Public education

Explains what actions the Trustee Council will take to provide for an appropriate level of public education about the restoration program. Although this is related to public participation efforts, it differs in that the Trustee Council will generate educational products relating to restoration. Educational efforts may, in part, take the form of annual work plan projects.

C. Monitoring/Evaluation

Presents elements of an integrated, long-term monitoring program designed to follow the rate of recovery of injured resources and damaged services and to evaluate the effectiveness of restoration activities. Also presents an evaluation process to determine if plans, projects and related activities have been implemented as designed.

D. Development of annual work plans (i.e., selection of projects/studies for a given year)

Describes the process and timeline the Trustee Council will follow in prioritizing annual research and restoration needs. Key elements of that program could include: call for submission of proposals, evaluation of previous years activities, peer review, and compliance with state and federal statutes.

E. Funding mechanisms

1. Current mechanism

Describes the current funding mechanism (court registry account). Explains how the process functions and its affects on the nature, extent and future of the restoration program.

2. Endowment

Describes the various approaches to endowments that could be suitable for the restoration program. Explains how endowments could function and affects they could have on the nature, extent and future of the restoration program.

F. Amendments to the final Restoration Plan

Describes the process for amending the final plan.

Appendices

A. ~~Descriptions of all~~ options and suboptions

Summarizes all options and suboptions, although the descriptions will be more detailed than those in the Restoration Framework.

B. Legal Considerations

Contains a generic listing of statutes and regulations which provide protection to the resources addressed in the ~~descriptions of the options and suboptions~~.

C. Charter of the Public Advisory Group

Copy of the Public Advisory Group charter