

RESTORATION PLANNING WORK GROUP
NOVEMBER 3, 1992
10:00 a.m.

ATTENDEES

Chris Swenson
Ray Thompson
Karen Klinge
John Strand
Bob Loeffler
Mark Fraker
Matthew McMillen
Carol Gorbics
Veronica Gilbert
Sandy Rabinowitch

The following items were distributed:

RPWG Peer Review Session: Fish and Intertidal Species
October 27, Letter from Brian Sharp
November 3, Memo to the RT re: Alternatives
Summary of Injury and Recovery Status for Resources Impacted by
EVOS

AGENDA

- I. Updates - 10 minute total
 - A. Have you got your outlines in?
 - B. Editor Contract
 - C. EIS Contractor
 - D. Monitoring Contract
- II. Peer Review Conclusions
 - A. Key Informant Interviews (already discussed)
 - B. Preferred Alternative
 - C. Database
 - 1) Existing Criteria
 - 2) Cost, Geographic Distribution, Ecosystem
 - 3) Other
 - D. Options too broad
 - E. Agency function criteria to restoration
 - F. Other?

DRAFT ANNOTATED OUTLINE

John reviewed the draft annotated outline to determine which sections are still incomplete. He will contact those authors to find out their progress. A subgroup of Sandy, John and Carol will meet tomorrow to discuss the outline.

WRITER/EDITOR

Bob provided background information to Steven Levi. The graphics person was provided a copy of the annotated outline. Bob discussed with Steven when RPWG would give him things and how he views his role with regard to quality control. Bob stated it makes no sense for two people to be working on one thing at a time. Steven views his role as that of a story teller.

CONTRACTOR

Ray introduced Matthew McMillen, a Senior Environmental Scientist with Dynamac Corporation. He is a contractor working with Walcoff on the EIS contract and will participate in the open house EIS meeting scheduled for tomorrow. Matthew stated his mission is to pick up information from the libraries and also to pick up issues not mentioned in the previous scoping meetings. Matthew stated there were some issues for which he hasn't seen much narrative, such as what extent will they be involved in Section 7 consultations. Carol stated that there have not been any targeted areas, and she doesn't see how Section 7 would apply. Matthew stated that it may not apply at a programmatic level. John stated that Marbled Murrelet is listed as threatened in the lower 48 but not here. Mark stated that harbor seals may be a candidate when the survey results are released. Matthew stated that because DOI was involved in the process that might be akin to an opinion. Carol suggested Matthew send a letter to her agency, and she would respond to the verbal request.

John stated that RPWG's role at the EIS meeting tomorrow will be to answer questions regarding the Restoration Plan. Matthew stated that he doubts if anything new will come up. Bob asked Matthew how the meeting will be run, and he stated that he deferred this question to Ken Rice. Matthew stated he prepared a handout which is a welcome to the open house and why they are there. Karen stated that RPWG should review what is in the package for tomorrow's meeting. The handout discusses what is the purpose of the public participation in the NEPA process. Karen asked how this meeting will target other agencies. Matthew stated a coordination letter went out to about 100 people. Bob asked how it was decided who to target. Matthew stated that he did not make this decision. Ray stated that Sharon developed this list. Ray also stated that Matthew would like a copy of the latest edition of the alternatives and maybe RPWG could discuss where we are in that process. John stated that the RT stated we are not to give the EIS contractor this document until it has received their approval. Ray stated it was made clear to Matthew that this document is a draft. Matthew stated their job doesn't begin until they have something to assess. John stated that RPWG will be at a meeting with the RT on Friday; however, he has stressed all along that RPWG members should be selling the process to their RT member. Veronica stated her RT member will want more information on how this will affect the

habitat protection element.

MONITORING CONSULTANT

John stated that one last round of questions were forwarded to the two contractors who produced a technically acceptable proposal. The questions deal with cost and are aimed at getting one contractor to come down in cost. The other contractor was asked for clarification on cost. The information will be returned on the 4th. The prospective contractors names' are confidential. (Matthew left the room during this discussion.) Parametrix stacked up pretty well. John called EPA and inquired about TRI's credentials and he didn't get a very good report. They are in a mode of operating under cost overruns. John stated that technically Parametrix had the higher grade. TRI had a lower cost associated with it; however, the reference check would tend to offset that. Sandy asked how big an issue is the cost. John stated Parametrix was at about \$180,000, and TRI came in about \$86,000. John stated that we have about \$110,000 maximum. We won't know until about the 4th or 5th what response RPWG will receive to the cost questions. John stated one option was to ask the prospective contractors to use fewer people from the outside (contractors). Carol stated that a list of the peer reviewers was provided to let them see what expertise was available.

Karen asked if we are considering that neither of the above contractors is appropriate. John stated that it is not too early to think about another option. Instead of using an outside consultant, an alternative is to put together an interagency monitoring planning group and use peer reviewers to shape the plan. Carol stated that was the initial option. Karen stated she mentioned to Mike Fry the monitoring program, and he expressed interest in bidding. From a legal standpoint, he felt he should have the option of dropping his peer review status for an opportunity to bid. John stated that Boesch is one of the authors of Managing Troubled Waters and might be an unbiased peer reviewer.

Bob asked what the monitoring planning program is. John stated it includes stating goals and objectives, determining what is monitored, what infrastructure is required to manage implementation, how will monitoring be funded, etc. This constitutes a Phase 1 "conceptualization." Detailed planning will occur in Phase 2 to be in early 1993. Monitoring is done to (1) assess the rate and degree of natural recovery (2) monitor the effectiveness of restoration (3) conduct longer-term ecological monitoring aimed at understanding broader ecological relationships in the affected area and (4) assess what we said would be done in the Restoration Plan. Karen envisioned that the monitoring plan could change and we might consider putting emphasis in the monitoring plan on things not done in the Restoration Plan, such as research-oriented work, as a compensatory plan. John stated there is a section for monitoring in the Annotated Outline (Section V). The first phase will

conceptually address funding.

Phase 1 will take five months. Sandy stated that we should not bring on a firm with which we might not have a good working relationship. Sandy stated he is not comfortable with the agency backup suggestions. He fears that people already heavily burdened in the agencies will be more burdened. Sandy also raised the issue of impartiality. All agencies will have an interest in long-term participation and it might be cleaner if they did not have potential for setting up their future through this participation. Carol stated that agency involvement with the peer reviewers is essential because they are familiar with the issues. John stated that he could take a crack at writing something for the monitoring section until we have someone on board, and he envisions that we still can meet the deadline. Karen suggested putting it on the peer reviewers' shoulders which would also address Sandy's concerns and make us less subject to biases. Sandy stated this would make the agencies information sources rather than producers. John stated that would be a reasonable way to go. Carol stated that money could be added to the peer review contract from money we already have. Sandy suggested amending the IAG. John stated he will deal with John Armstrong on this, if necessary.

PEER REVIEW CONCLUSIONS

Chris provided copies of the bird notes from the Peer Review meeting. Chris stated that sublethal injury seems to be a continuing problem in a fisheries context. A partial solution is to emphasize an ecosystem approach.

PREFERRED ALTERNATIVE

Bob stated that the peer reviewers recommended going out for alternatives without a preferred alternative from a public prospective. Ray asked how do we define restoration plan. If the EIS is ready in late March, we then go out first or we try to go with the EIS without a preferred alternative. Carol stated the pro of not going out with a preferred alternative is that the public gets a clear plate for recommendations and will feel no action was taken without them. The con is that there is nothing for them to focus on. Veronica stated that all peer reviewers agree that there is a profound level of distrust of this process by the public. One thing to diffuse this feeling is to have public opinion be part of the Trustees' decision of what is the preferred alternative for use in the EIS. Karen stated that the Trustees appear to want to go out with a preferred alternative. Bob stated we have an opportunity to make a recommendation to the RT. John stated this was discussed in an RT meeting. Bob stated that it was then thought to be a legal requirement. Karen suggested recommending 2 or 3 things which are viable alternatives. Ray stated we must be careful what we call viable and not viable because at this point, they are all viable. Bob asked about an issue Carol raised

that the preferred alternative focuses public comment and stated that a brochure can focus people on where you want comment. Bob stated the public meetings have failed because of the large amount of public distrust and it focuses on the failings of the process. The public can be focused on substantive issues.

Veronica asked if the EIS will be finished by March. Matthew stated he can't foresee a schedule until they receive the alternatives; however, he felt it is doable. His direction is received from Walcoff as to time-constraints. Sandy stated that the only way to resolve this would be to ask the question of, at a minimum, the three state attorneys. John thought we were going to ask Maria. Ray stated that the answer was to read the CEQ regs which state there must be a preferred alternative. Carol stated it is likely the TC will make a decision on preferred alternative without public comment. DOI is pushing for a new series of scoping meetings after alternatives have been developed. They feel it might be required by law because they don't think the scoping meetings earlier were adequate. Sandy stated that what you talk about in an EIS meeting and restoration plan meeting could be different depending on who runs them. Carol stated there would be opportunity for us to mold these meetings. John asked if these meetings would get public opinion on the alternatives. According to Henry Gerke, public meetings should be held because the public should have an opportunity to develop issue statements on restoring the spill area. Sandy stated there was some structure in the previous scoping meetings. John stated the schedule would have to slip to deal with the information gathered. Carol stated that a slip in schedule would have to come from the Restoration Team. Carol questioned if these delays would allay public distrust. Carol suggested basically keeping the schedule as it is. Matthew stated that if you don't have a preferred alternative how can you issue a decision. Carol stated we would in the final. Bob stated we will probably not have a preferred alternative until about a month before the plan comes back from the printer. Matthew stated that you take the alternative which is the broadest and everything else is a subset. There are all degrees of the largest versus the least. Karen stated that we will not treat any alternatives differently and all six would contain the same amount of detail and the preferred alternative would state that it was determined by the RT that this would be the preferred alternative. Matthew stated the EIS must be technically, legally and procedurally correct. If you haven't given the public the direction you prefer to go in, there will be a lot of comment on this. NEPA does not have a citizen suit clause in it; they can only get injunctive relief against the project. Veronica asked what are the standards for procedural sufficiency. Matthew stated they are not defined. Carol stated the EIS could talk about the full range of alternatives. Matthew stated that the preferred alternative is implementing a restoration plan, and there are various restoration plans you can implement. The record of decision could decide how this will be done. The purpose and need for implementing a proposed action

must be explained. Karen stated that in the past RPWG had disagreed with Ken's definition of "no action." Karen suggested writing up why some of the alternatives considered weren't done. Bob suggested working with the attorneys on the issue of no preference among the suite of alternatives. Mark stated we need some analysis of this approach with respect to the pros and cons. Veronica stated her preferred suite of alternatives would be 2-6. Sandy didn't agree this would be the best way to present it and feels RPWG should go to the attorneys before going to the RT. Veronica asked what is the protocol for obtaining legal opinion from the federal attorneys. John stated in the past he has contacted Craig O'Connor or Keith Goltz. Sandy suggested preparing the same information but aimed at the attorneys rather than the RT. Veronica suggested faxing the attorneys a draft and then discussing it. John stated that RPWG will assign a whole suite of alternatives as the preferred alternative. Carol diagramed the following alternatives:

- A. No Action - Natural Recovery
- **B. Management of Human Uses
- **C. Manipulation of Resources
- *D. Habitat Protection and Acquisition
- **E. Acquisition of Equivalent
- *F. Combo Alternative
 - 3. Limited
 - 4. Moderate
 - 5. Expanded
 - 6. Comprehensive

* preferred alternative

**alternatives eliminated from further study

Bob suggested these be presented as parallel alternatives. Matthew stated the programmatic EIS must frame all future alternatives. The EIS would have to look at everything the Restoration Plan could possibly contain. Carol will write up a memo and will forward a draft to everyone on Thursday. Karen suggested making a phone call to the attorneys as an initial approach. Karen questioned if natural recovery meets the terms of the settlement. Carol stated she feels the Trustees can buy off on the above. Mark stated it also keeps us on schedule.

RPWG adjourned until 1:15.

DATABASE

Karen discussed data gaps in the database. Ken Reckhow suggested conducting phone interviews to solve this problem. Karen suggested developing a list of questions and running them by Ken Reckhow and one other person with a science background to sample the interview process. Karen volunteered to conduct the interviews

and requested that the interviews be done in pairs with another RPWG member. This process is probably not compatible for services. Karen would like to dedicate next week to the interviews and can then input the information into the database. This process will involve peer reviewers, Mike Fry and Dan Roby. Carol agreed with the approach and asked how conflicting views will be dealt with. Karen stated she would go back to the peer reviewers and ask for their specific reasons for disagreeing. Carol asked how the consensus process could be built back in. Karen stated that we will go with RPWG's view until convinced otherwise. Bob suggested having two or three people as a base. Karen stated she plans to have two people per discipline. Karen also raised the issue of lack of information regarding sublethal effects. The criteria in the database is very valuable in that other information can be gleaned from it. John asked if we need to call Spies and let him know which peer reviewer will be interviewed. Karen stated she contacted Barbara at Applied Sciences, and she requested that Karen fax a schedule of interview times and she will get an authorization signed. Chris asked when the specific criteria rating changes from the peer review meeting will be incorporated. This will change how options are written. Karen stated if there is consensus on the ratings, the changes can be incorporated.

Sandy asked if services were purposely excluded. Karen stated that the problem with the services is that the options are not settled yet. Carol suggested that we only do biological resources. Bob suggested talking to Art to see if there are subdivisions of upland. Sandy stated that this could be completely inconsistent and may not mesh with what RPWG is doing. Karen stated that we come up with a list of options and with the ecosystem database you can look at the comparisons. She is not sure how gaps can be addressed. The ecosystem database will also help address species not studied. Chris expressed concern that there may be criticism that the alternatives are too rigid. Karen stated by the end of next week, the information should be in place to put into the computer. Chris volunteered to help on the ecosystem part. Karen requested Bob help on setting up the computer database. Bob suggested Ward help on this. Chris stated we could look at services to determine where the gaps are.

EXISTING CRITERIA

Phil Mundy wanted to see what multiple species were benefitted. Bob suggested someone go through and pick out what species are benefitted. Karen stated this should come out under hers. Veronica stated she doesn't mind keeping Criterion 3 as long as it is an evaluation criteria. Bob stated Criterion 7 should be some combination of 1A, 1C and cost. Veronica suggested dropping Criterion 7 and adding some estimate of cost. The public comments database is based on comments to the framework. These comments will be kept as a part of the criteria and may be used later. Veronica stated another criterion suggested was social benefit and

stated that a broader view of social benefit may be valuable, such as the degree to which an option would yield social benefits (education). Sandy asked what information would be used to decide if something had social benefit. Veronica stated we would have to go through the same process used for the rest of the database. Karen gave the site stewardship program as an example. An education program was evaluated by resource. Veronica stated it might be helpful to consider renumbering the criteria since some numbers are being dropped. Bob suggested all changes be input at one time. Veronica suggested when Karen talks to Ken Reckhow regarding Criterion 4, she should explore ideas for looking at uncertainty. Karen stated that it shows up in the degree of recovery if done correctly. Bob stated this points out the options have to be less specified. An option may be respecified as time goes on, necessitating interviews being redone.

COST

Bob suggested for consistency a subgroup should do costs. Carol suggested Mark and Veronica for this subgroup. Veronica stated the trick is to make the options a lot more specific. Sandy suggested to assign cost, you make an assumption and narrow down based on gut feelings. Karen suggested using a range to assign cost. John stated that numbers can be derived from PI's. Chris stated it depends on whether you are enhancing. Karen suggested Veronica and Mark prepare a framework on cost and then provide their product to RPWG for review. John also suggested that the product contain examples. Since the fish information has to be redone, Chris suggested holding off on fish.

GEOGRAPHIC DISTRIBUTION

Karen stated that Jess asked how RPWG would like to utilize him for maps diagraming distribution. RPWG should let him know soon because he is trying to set up a scanning contract, which requires justification. Carol and Bob will work with Jess to determine maps needed to demonstrate geographic distribution, with a conclusion of where options are likely to be applied. Ray raised the issue of what EVOS restoration can do of value if a migrating species is being affected elsewhere. Bob stated that mapping efforts need to be limited to the oil spill area. The EVOS area needs to be determined. Veronica stated that cost and geographic distribution do not exist on their own but within the context of the option. Bob stated that in talking with Jess it was determined that the maps would probably be coming in parts through January.

SPECIAL DESIGNATION

Chris prepared a chart for the following special designations by habitat type and what additional protection is provided:

-ADNR State Park

- ADF&G Special Areas
- National Marine Sanctuary
- Estuarine Research Reserve
- CNF Research Natural Area
- CNF National Recreation Area
- Federal Wilderness Designation

The only difference is federal versus state. The only qualifiers are habitat type and land ownership. Sandy stated that application is another step beyond the table. Veronica stated that special designation is also an issue of the habitat protection work group.

OPTIONS TOO BROAD

Chris stated that there was good fisheries input from the peer reviewers. Comments were received that some options are too broad. John stated that in some cases species were lumped together, and this needs to be reevaluated.

AGENCY FUNCTIONS CRITICAL TO RESTORATION

Karen stated that Marty feels there are certain things which agencies do that we are relying on. Budget cuts may result in functions not being funded at the current level; therefore, RPWG should consider the full scope of an option. Sandy suggested an example is law enforcement. Karen suggested listing agency functions which we are currently relying on to make our options work, so that funding will be continued. Veronica suggested contingency planning and oil spill response as other examples. Carol disagreed because the lawyers have not told us to do this and it is not within the scope of our job. Veronica stated that these are things being funded through other means. Karen stated that the scope is the building block for our restoration actions. Chris stated that this also could go toward explaining the limits of agencies to the public. Carol also questioned where the level of agency need will go in the Restoration Plan. Sandy stated he likes the idea of trying to prepare a list of agency functions needed. Bob asked if each agency could prepare a list for their shop. Carol asked if this list has already been done before. Sandy stated that some part of this has been done. Carol stated we are starting to talk about the universe, and this is detracting from what our job is within the scope of the Restoration Plan. Chris stated this list would only be a couple of pages at the most. Veronica stated that the context of discussion with the peer reviewers was that some of these options appear to pad agency budgets. Ken has stated that there is a line between what would normally be done and what is extraordinary because of the oil spill. Karen stated that the list is not critical to be done; however, she voted to do something which is not very detailed. Chris will collate the list from information obtained by RPWG members from their agency. Bob suggested doing an example so that everyone will know what to do. Chris will circulate a memo with an

example.

SUMMARY OF INJURY

The summary of injury table prepared by Carol was reviewed by RPWG. Karen stated there is a need for clarification on whether it is based on initial mortality or other studies. Sandy suggested this could be captured in the comments column. Karen suggested adding a footnote. Comments to the table should be provided to Carol by 11:00. She will make the changes and forward the table to Spies.

ALTERNATIVES MEMO

Bob suggested explaining in the memo what the schedule and product changes are. Karen questioned why we need to bring this up. John stated we need to clarify to the RT how this memo relates to the one sent to them last Friday. We could be more clear in the discussion on Friday. Veronica suggested making the subject "Preferred Alternative for the EIS". For those struggling with the term "alternative", Veronica suggested that the following statement be added to the last paragraph on page 1: subsequently, RPWG developed 6 draft alternative themes which were presented to you on October 30. John stated this addresses his concerns of tying things together. Bob suggested having a summary paragraph.

SCHEDULE

Chris will meet with John tomorrow morning to make the fish rating changes suggested by the peer reviewers.

Meeting concluded at 4:30.

October 19 and 20, 1992

RPWG Peer Review Session: Fish and Intertidal Species

I. Participants

Pete Peterson
Phil Mundy
Bob Spies
Byron Morris
John Strand
Chris Swenson

II. Suggested Modifications to Injury Summary Table

- A. Title change: change to "Summary of Injuries Inferred From Studies" to reflect the fact that species not studied may have been injured and nature and extent of known injuries may not be fully understood.
- B. Species lists: in order to put injury summary in context, it was suggested that the Restoration Plan include: a complete list of species present in spill area and a list of all species studied during the NRDA process (as well as those studies dropped early on).
- C. Intertidal: mention the Kodiak intertidal study (Highsmith?) which indicated delayed effects which propagate throughout intertidal ecosystem, ex. a decline in limpet population which occurred in 1991 - mechanism causing decline unknown but it was statistically significant.
- D. Pink Salmon: add that egg mortality in oiled and unoiled areas continued to increase, based 1989 to 1991 data.
- E. Sockeye Salmon: add that trophic structures of Skilak and Kenai Lakes may have been altered by sockeye overescapements.
- F. Rockfish: add that increased fishing pressures on rockfish due to spill-related closures of other fisheries may be impacting rockfish populations.

III. Critique of Options Selected for Resources

- A. Ecosystem Approach: Need to look at injuries from ecological perspective; resources are interrelated and options should address problem holistically. Options that may score low on criteria 1 & 2 should still be considered if they score high on #3 (ecosystem benefits). E.g. 19, 37, and 40 (anadromous catalogue, land purchase and special designations).

- B. Intertidal: 1) Delete 15.2 (cleaning salmon spawning substrate) since it's no longer applicable on a wide scale; 2) Feasibility and effectiveness of 13 and 14 (mussel beds and fucus) questioned (universal rating changes on 14; change 1a to "L"). Mussel beds widespread and aggregated beds may not be more important than disaggregated beds for feeding. Option 40 (special designations) may not be effective given extent of injured area. Group concluded that there are currently no effective options for intertidal restoration. However, it is important to initiate studies on trophic level impacts of oiled mussels to see if they are a significant, ongoing source of injury.
- C. CT and DV Trout: 1) Delete 14 (fucus) due to feasibility problems and difficulty of implementing on a wide scale; 2) Delete 11 (improve freshwater spawning habitat) since there are no studies establishing the effectiveness of this technique for trout - and mixed results for salmon.
- D. Herring: 1) Delete 15.1 (supplement subtidal spawning substrate) since it is unclear that substrate is a limiting factor and it would be difficult to implement on a wide scale - if it's kept in criterion 2 should be changed to "L"; 2) claims of population level injury cannot be verified until next year when spill-impacted year class is fully recruited into adult population (generally recruited at age 4).
- E. Pinks: 1) Problem is increasing egg mortality, but it's occurring in oiled and unoiled areas. If there is no population level injury, none of these options apply as direct restoration, although they could be done as a stock enhancement. However, it is unclear that this would create any net benefits. 2) Option 11 (improve freshwater spawning habitat) may not be justified in PWS since new wild runs would not add much to population stability and may not result in more fish/increased biomass. 3) Remove 15.2 for reasons already stated. 4) Remove 18.1 and 18.2 due to potential genetics problems and low effectiveness (criterion 3 should not be "H" for these reasons). 5) 18.3 could be done as enhancement, but criteria 3 should not be "H" (could be "L" or "M") since wild fish raised to fry or smolt in hatchery don't provide same ecological role as truly wild fish and may not be as genetically fit (natural selection process altered).
- F. Sockeye: 1) Option 11 should be narrowed to 11.3 and focus only on restoring trophic dynamics of sockeye rearing habitat. 2) Options 2 and 11.3 are strongly connected; 2 deals with input to system (returning adults) and 11.3 deals with output (survival of fry and smolt).

IV. Filling Out Expanded Criteria

Population Level vs. Sublethal Injuries: The expanded criteria chart could only be filled out for species with a quantified population level injury (i.e. sockeye). For example, in the case of pinks, only sublethal effects are documented (but not quantified) and the mechanism is unknown. Based on available data, we don't have a means of generating a measurable standard by which to compare aided to unaided (natural) recovery. Without this type of comparison, the expanded criteria cannot be addressed.

V. Key Issues for RPWG

- A. Summary of Injury: Injury summaries should not be presented as a definitive list of all actual injuries, just those known at present based on NRDA studies. Undetected injury should not be confused with non-existent injury.
- B. Ecosystem Approach: Restoration should emphasize the ecological interconnection of injured resources as well as the potential of options and alternatives to address ecosystem level injuries. Possibly, sorting options by criterion 3 could give us an idea of how to begin. Options with low ratings on criteria 1a/b and 2 would still be appropriate if they were given an "H" for criterion 3.
- C. Sublethal Injuries: Options for restoring sublethal injuries presents the following problems: 1) given the available data, they do not easily fit into a quantifiable rating scheme; 2) sublethal effects are presumably due to remaining hydrocarbon contamination (there may be exceptions), and there are no viable options for removing this contamination (assuming the cleaning of aggregated mussel beds is ineffective); and 3) it is more difficult to measure recovery from sublethal impacts and the effectiveness of restoration. As a result, it is difficult to justify spending money on restoring sublethal injuries. However, sublethal injuries do exist and there is an expectation that they should be addressed by the restoration plan.
- D. Potential Hatchery Production Problems: Hatchery production of salmon, especially pinks, may involve substantial risks associated with disease and genetics problems. In some cases, producing more fish may not result in significantly larger adult returns or increased population stability. Hatchery production options may be viable but should be carefully considered.
- E. Basic Research: The final suggestion was that the lack of scientific knowledge was a limiting factor in restoration planning and that one use of an endowment fund would be to fund basic scientific research and collect baseline data so that we would be better prepared in the future.

Dr John Strand
Restoration Plan Working Group
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Ecological Perspectives
2234 NE 9th Ave
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October 27, 1992

Dear John:

I would like to put down in writing some of the important points that emerged from our meeting last week (October 19-21). They have logical consequences in deciding the direction of restoration effort. My perspective derives from having been involved with this particular spill since 1989, at field and review levels, and with acquisition, conservation, and planning efforts for nongame birds for the past 25-30 years while with U.S. Fish and Wildlife Service.

1) It was difficult to comment on the usefulness of options being presented for consideration and review, due to lack of specificity. Detail was especially lacking on the scale of the effort implied by a given option. Many options may be theoretically helpful if applied at large enough scales, and my own reviews of particular options generously, but perhaps unnecessarily assumed that those scales could be sufficiently large. However, as a practical matter, it appeared unlikely that most of them would be implemented at a scale that achieves an ecologically meaningful result. I would place in this category most of the options affecting murre--e.g., social stimulation, predator (gull) control--and the options having to do with oiled mussel cleanup.

2) I suggested in my August 12, 1992 memo to Bob Spies that options be judged using the criterion as to whether the option is likely to provide restoration commensurate with the damages. It appears that few of the restoration actions other than 37.0 and 40.0 meet this criterion (especially those pertaining to murre), and certain damaged species (e.g., pigeon guillemot) are not addressed. Bob Spies relayed a similar negative assessment to the Trustees this fall for the 64 options recommended for adoption by the Restoration Team for FY 93. If these are indeed accurate assessments of the situation, the logical consequence seems to be that most of the restoration effort (funds) should be directed elsewhere (as outlined below in item ...).

3) I exempt from this criticism those options having to do with land acquisition and special designations (37.0 and 40.0). It is my firm conviction that these need to become the foundation of the restoration plan. When developed these two sets of options will provide the only possibility

of achieving restoration on an ecosystem level (see below item...)

4) However, all of the acquisition and special designation options so far reviewed lacked geographic specificity. It would have been useful to the reviewers, and will be essential for the Trustees and the public, to be able to see exactly where contemplated restoration options will occur.

To increase the specificity, I suggest 1) that a marine sanctuary, or some such equivalent, be pursued and implemented in Prince William Sound, in conjunction with the acquisition of timber rights on private inholdings on islands in PWS; 2) that timber and/or development rights to private lands along the Kenai coast be purchased (about 60% of the Kenai coast is subject to native claim); 3) that timber rights to Kachemak Bay be considered for purchase; and 4) that timber rights on Afognak Island be considered for purchase. (I am less sure about items 3 and 4, since I know less about Kachemak Bay and Afognak Islands--I use the expression "be considered" for these two recommendations.) (Note that it is probably unimportant that fee title be acquired--in fact there might be some advantage in leaving fee title in native ownership for cultural identity reasons.)

5) An important point is that the Restoration Plan include consideration of all options/alternatives, including those that any of the Trustees might have a political objection to. We can ill afford to exclude any useful options.

Apropos of this, it appears that the legal basis for excluding prevention options from the restoration plan has not been satisfactorily established, and that an examination or even independent legal review of this question is in order. Even though the 1990 Oil Pollution Control Act might seem to cover some of these eventualities, there are advantages in including prevention options in the Restoration Plan, especially for those eventualities not covered in the Act. I am specifically concerned about offshore oil leasing of tracts in the Shelikof Strait, where hundreds of thousands of murrelets died in 1989, and where, given the inadequacy of the restoration actions for murrelets, natural recovery must be allowed to take place over the next 70 years.

6) The settlement states that the State and Federal governments shall not be prevented from performing assessment and restoration activities from other than recovered funds (MOA p. 11), nor that the State and Federal agencies shall be confined to 43 C.F.R. (ibid). However,

there appears to be nothing in the Restoration Plan as developed so far to demonstrate the unilateral determination of the agencies to proceed more vigorously with restoration than is required or allowed by the availability of recovered funds. On the contrary, it has been noted by the public among others, with some justification, that agencies may be funding their own regular activities, including some that may even be unrelated to the damages. I suggest that it would be entirely appropriate for the Restoration Plan to include an array of options that demonstrate any such extra efforts by the agencies, even if they don't call for the expenditure of restoration settlement funds.

7) The mix of alternatives: My recommendations for partitioning funding into the three major components of the restoration plan follow. The funding mix applies to the duration of the settlement, approximately 10 years. However, endowment can extend activities beyond that time period. Note that endowment can be a means to attaining desired objectives, but is not an objective in itself.

--Monitoring 10-15%.

(Note: Since monitoring in and of itself is not restoration, it would be inappropriate to allocate an inordinate level of funding to this component. However, in an information age, it is justifiable to allocate some funding level for continued monitoring, especially given continuing contamination in the oil spill area.)

--Restoration Actions 10-15%

(Note: Species-specific restoration actions other than 37.0 and 40.0--acquisition and special designations--are given a fairly low funding priority because of the problems of scale mentioned above, and because many actions contemplated do not achieve restoration commensurate with the damages, even for the species being addressed. Some injured species are also not addressed by species-specific restoration actions.)

--Acquisition/Special Designation 75%

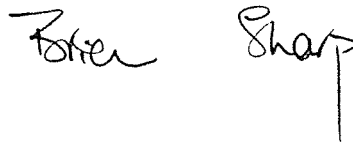
It is recommended that acquisition and special designation options be implemented at a large enough scale to achieve restoration that is meaningful at the ecosystem level. Species not addressed by species-specific restoration actions, as well as injured species identified in specific restoration options, would benefit from this ecosystem approach. I suggest that the ecosystem approach incorporate and supersede the species-by-species approach.

J.Strand 10/27/92

In this connection, I caution against becoming overly concerned with detail or submitting to a desire to have complete information in hand before deciding to proceed. We will of course need to take advantage of what information that is readily obtainable, e.g., through The Nature Conservancy. However, I am not optimistic that this effort will fill the datagaps, and we will have to proceed heuristically with what we do know. It should be realized now, for example, that for harlequin ducks and marbled murrelets, site-specific information is not available, obtaining it will take years, and we cannot afford the luxury of waiting until we know the location of all, or even a majority, of the nesting streams and nesting stands, on a tract-by-tract basis. It will be helpful to know the relative proportions of land in private and public ownership in order to estimate the proportion of the existing population that might be affected by the acquisition of private land in the general geographic area under consideration. Along the Kenai coast, for example, since 60% of the coastline, or thereabouts, is scheduled for transfer into private ownership, the likelihood of benefiting these two injured species by acquiring private timber/development rights is high. This information, reinforced with any available detailed information, should be, in fact will have to be, sufficient for a decision to proceed.

I hope these comments are useful to you in coming up with a useful restoration plan for the consideration of the public and the Trustees. Thank you for your invitation to participate in the restoration planning process and the October meeting.

Sincerely,

A handwritten signature in cursive script that reads "Brian E. Sharp". The signature is written in dark ink on a white background.

Brian E. Sharp

gorbics/November 3, 1992

Memorandum

November 3, 1992

To: Restoration Team

From: Restoration Planning Working Group

Subject: Alternatives

The issue of selecting a preferred alternative has been a difficult one for RPWG. It was made even more difficult by the peer reviewers input during the RPWG workshop. They made strong recommendations that public participation in the selection of the preferred restoration plan alternative was essential in assuring meaningful public involvement. They were concerned that the process currently being considered would force the Trustee Council to make a decision too early in the decision-making process. The RPWG recognized, as well, that it would be difficult for the Trustees to select a specifically defined preferred alternative **prior** to public comment.

However, we also recognize that the EIS must contain a preferred alternative or alternatives in order to strictly meet the procedural requirements. (EIS's have been successfully prepared by individual agencies that have not been challenged which did not identify the agency's preferred alternative, however, the RPWG believes this may be a risky approach.)

The RPWG took the peer reviewers recommendation along with the requirements contained in NEPA and developed a strategy we think will accommodate all the concerns.

The NEPA requires that the EIS include the following information concerning the development and presentation of alternatives:

- Identify all reasonable alternatives,
- Include the alternative of no action, and
- Identify the preferred alternative or alternatives.

(Additional requirements are not being overlooked, they are not relevant to this discussion.)

The Restoration Framework (Chapter VII) identifies six conceptual alternatives that the Trustees may consider in the development of the Restoration Plan. Within one of the alternatives, the Combination Alternative, the RPWG has further identified four different alternatives. The current range of alternatives now

includes the following:

- A. No Action (Natural Recovery),
- B. Management of Human Uses,
- C. Manipulation of Resources,
- D. Habitat Protection and Acquisition,
- E. Acquisition of Equivalent Resources, and
- F. Combination Alternative: Limited Restoration,
Combination Alternative: Moderate Restoration,
Combination Alternative: Expanded Restoration, and
Combination Alternative: Comprehensive Restoration.

We believe the development and public scoping associated with these alternatives meet the NEPA requirement of identifying all reasonable alternatives.

To avoid the public perception problems and the difficult task of forcing the Trustee Council to select a single preferred alternative, the RPWG proposes that the Trustee Council identify the Habitat Protection and Acquisition and Combination Alternatives as the preferred alternatives. (More than one preferred alternative is allowed under NEPA.) The pros of this approach are primarily allowing the Trustee Council the ability to meet the requirements of NEPA **and** to allow public comment equally on multiple alternatives.

During the RPWG evaluation of these alternatives, we determined that B., C., and E may not represent viable alternatives which meet the goals and objectives of the Restoration Plan. We propose that they be considered as "alternatives which were eliminated from detailed study" as described within NEPA to further simplify the EIS and Restoration Plan development. Briefly, the reasons for eliminating them is that they are too narrow in scope to be considered a realistic alternative. (Further discussion of the reasons for eliminating these will, of course, be found in the EIS or Restoration Plan.)

The RPWG requests the concurrence of the Restoration Team **and** Legal Team on this stupendously elegant approach.

TABLE XX: Summary of Injury and Recovery Status for Resources Impacted by the Exxon Valdez Oil Spill

Resource	Description of Injury			Status of Recovery				Geographic Extent of Injury				Comments/Discussion
	Initial Mortality	Population Decline after the spill	Sublethal or Chronic Effects or Exposure	Current Population Status	Sublethal or Chronic Effects or Exposure	Dependency on Currently Degraded Habitat		FWS	Kenai	Kodiak	Alaska Penin.	
						Inter tidal	Sub tidal					
MARINE MAMMALS												
Harbor Seals*	YES 200	YES	YES	CONTINUING DECLINE	UNKNOWN	NO	NO	YES	NO	NO	NO	Although only 19 seal carcasses were found, over 200 seals were estimated to have been killed. There was a measurable difference in populations between oiled and unoled areas in FWS. Population numbers continue to be variable, but there is little evidence of recovery. Oil residues found in seal bile were 5 to 6 times higher in oiled areas than unoled areas.
Sea Lions*	YES	UNKNOWN	YES	CONTINUING DECLINE	UNKNOWN	NO	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	Several sea lions were observed with oiled pelts and oil residues were found in some tissues. It was not possible to determine population effects. Sea lion populations were declining prior to the oil spill.
Sea Otters	YES 3,500 TO 5,500	YES	YES	STABLE, BUT NOT RECOVERING	YES	YES	YES	YES	YES	YES	YES	Although about 1000 dead sea otters were found, 3500 to 5500 were estimated to have been killed. Post-spill surveys showed measurable difference in populations and survival between oiled and unoled areas. Survey data have not established a significant recovery. Prime-age animals are still being found on beaches.
Killer Whales	YES	YES	UNKNOWN	RECOVERING	UNKNOWN	NO	NO	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	A small number of adult whales were killed, no effects determined on population. The AB pod has grown by 2 whales since 1990.
Humpback Whales	NO	NO	NO	--	--	--	--	--	--	--	--	
TERRESTRIAL MAMMALS												
Sitka Black-tailed Deer	NO	NO	YES	NO CHANGE	NO	NO	NO	NO	NO	NO	YES	Elevated hydrocarbons found in tissues in some deer.
Black Bear	NO	UNKNOWN	UNKNOWN	--	--	--	--	--	--	--	--	No field studies were done.

* Population may have been declining prior to the spill;

-- If no injury was detected or known, no assessment of recovery could be made.

Resource	Description of Injury			Status of Recovery				Geographic Extent of Injury				Comments/Discussion
	Initial Mortality	Population Decline after the spill	Sublethal or Chronic Effects or Exposure	Current Population Status	Sublethal or Chronic Effects or Exposure	Dependency on Currently Degraded Habitat		FWS	Kenai	Kodiak	Alaska Penin.	
						Inter tidal	Sub tidal					
Brown Bear	NO	NO	YES	NO CHANGE	UNKNOWN	YES	NO	UNKNOWN	UNKNOWN	UNKNOWN	YES	Hydrocarbon exposure documented on Alaska Peninsula.
River Otters	YES	NOT DETECTED	YES	UNKNOWN	YES	YES	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	Significant exposure to hydrocarbons and some sub-lethal effects determined, but no effects established on population. Some sub-lethal indicators of possible oil exposure remain in 1991.
BIRDS												
Bald Eagles	YES	NO	YES	RECOVERING	UNKNOWN	NO	NO	YES	YES	YES	YES	Productivity disrupted in 1989. Population estimates and productivity returned to normal in 1990. Significant exposure to hydrocarbons and some sub-lethal effects found in 1989 and 1990, but no continuing effects established on populations.
Peale's Peregrine Falcons	YES	NOT DETECTED	YES	UNKNOWN	UNKNOWN	NO	NO	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
Common Murres	YES 175,000 to 300,000	YES	YES	CONTINUING DECLINE	YES	NO	NO	NO	YES	YES	YES	Measurable impacts on populations with comparisons to pre-spill conditions. Adult mortality 175,000-300,000. Breeding is still inhibited in some colonies in the Gulf of Alaska.
Marbled Murrelets*	YES 8,000 TO 12,000	YES	YES	STABLE OR CONTINUING DECLINE	NO	NO	NO	YES	YES	YES	YES	Measurable affect on populations with comparisons to pre-spill conditions. Estimated adult mortality 8,000 to 12,000. Marbled murrelet populations were declining prior to the spill.
Storm Petrels	YES	NO	AWAITING RESULTS	NO CHANGE	UNKNOWN	NO	NO	YES	YES	YES	YES	
Black-legged Kittiwakes	YES	NO	YES	NO CHANGE	NO	NO	NO	YES	YES	YES	YES	Total reproductive success in oiled and unoiled areas of FWS has declined since 1989. Hydrocarbon contaminated tissues were detected in 1989. Hydrocarbon contaminated stomach contents were detected in 1989 and 1990.

* Population may have been declining prior to the spill;
 -- If no injury was detected or known, no assessment of recovery could be made.

Resource	Description of Injury			Status of Recovery				Geographic Extent of Injury				Comments/Discussion
	Initial Mortality	Population Decline after the spill	Sublethal or Chronic Effects or Exposure	Current Population Status	Sublethal or Chronic Effects or Exposure	Dependency on Currently Degraded Habitat		FWS	Kenai	Kodiak	Alaska Penin.	
						Inter tidal	Sub tidal					
Pigeon Guillemots*	YES	YES	YES	STABLE OR CONTINUING DECLINE	UNKNOWN	YES	YES	YES	YES	YES	YES	Over 500 carcasses were recovered. Between 1500 and 3000 were estimated to have been killed by the spill. Pigeon guillemot populations were declining prior to the spill.
Glaucous-winged gulls	YES	NOT DETECTED	NO	NO CHANGE	NO	YES	YES	YES	YES	YES	YES	
Other Seabirds	YES 375,000 TO 435,000	VARIABLE	UNKNOWN	UNKNOWN	UNKNOWN	NO	NO	YES	YES	YES	YES	Adult mortality of 375,000 to 435,000 birds. Total seabird recovery has not been measured.
Harlequin Ducks	YES	YES	YES	STABLE OR CONTINUING DECLINE	YES	YES	YES	YES	YES	YES	YES	Post-spill samples showed hydrocarbon contamination and poor body conditions. Surveys indicate population declines and near total reproductive failure.
Other Sea Ducks	YES	YES	YES	UNKNOWN	UNKNOWN	YES	YES	YES	YES	YES	YES	More than 2,000 sea duck carcasses were recovered. Sea ducks tend to feed in the intertidal and shallow subtidal areas which were most heavily impacted by oil.
Black Oyster-catchers	YES	YES	YES	RECOVERING	YES	YES	NO	YES	YES	YES	YES	Differences in egg size between oiled and unoiled areas persist. Significant exposure to hydrocarbons and some sub-lethal effects determined. Populations declined more in oiled areas than unoiled areas in post-spill surveys.
Other Shorebirds	YES	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	YES	NO	YES	YES	YES	YES	
Passerines	YES	NO	UNKNOWN	NO CHANGE	UNKNOWN	NO	NO	YES	YES	YES	YES	
FISH												
Pink Salmon	NOT DETECTED	NOT DETECTED	YES	SEE COMMENTS	YES	YES	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	Significant exposure to hydrocarbons by adults, sub-adults, and eggs. Some sub-lethal effects determined on juveniles. Egg mortality continues to be high in oiled streams of FWS in 1991.

* Population may have been declining prior to the spill;

-- If no injury was detected or known, no assessment of recovery could be made.

Resource	Description of Injury			Status of Recovery				Geographic Extent of Injury				Comments/Discussion
	Initial Mortality	Population Decline after the spill	Sublethal or Chronic Effects or Exposure	Current Population Status	Sublethal or Chronic Effects or Exposure	Dependency on Currently Degraded Habitat		PWS	Kenai	Kodiak	Alaska Penin.	
						Inter tidal	Sub tidal					
Sockeye Salmon	NO	NO	UNKNOWN	SEE COMMENTS	NO	NO	NO	UNKNOWN	YES	YES	NO	Assumed loss of juveniles in oiled areas. Smolt survival continues to be poor in the Red Lake and Kenai River systems due to overescapements. As a result, future adult returns are expected to be low. Trophic structures of Kenai and Skilak Lakes altered by overescapement.
Pacific Herring	UNKNOWN	UNKNOWN	YES	UNKNOWN	YES	YES	YES	YES	UNKNOWN	UNKNOWN	UNKNOWN	Measurable difference in egg counts between oiled and unoiled areas. Effects on eggs and larvae were evident in 1989 and to a lesser extent in 1990; in 1991 there were no differences between oiled and unoiled areas.
Rockfish	YES	UNKNOWN	YES	UNKNOWN	YES	NO	YES	YES	YES	UNKNOWN	UNKNOWN	A small number of dead adults were found and significant exposure to hydrocarbons with some sub-lethal effects determined, but no effects established on population. Spill increased fishing pressures which may be impacting population.
Dolly Varden	NO	YES	YES	STABLE, BUT NOT RECOVERING	NO	NO	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	In 1991 differences in survival between anadromous adult populations in the oiled and unoiled areas persisted despite the decrease in exposure indicators.
Cutthroat Trout	NO	YES	YES	STABLE, BUT NOT RECOVERING	NO	NO	NO	YES	UNKNOWN	UNKNOWN	UNKNOWN	In 1991 differences in survival between anadromous adult populations in the oiled and unoiled areas persisted despite the decrease in exposure indicators.
SHELLFISH												
Clam	UNKNOWN	UNKNOWN	YES	UNKNOWN	UNKNOWN	NO	YES	YES	YES	YES	YES	Clams transplanted to oiled areas in 1990 grew significantly less than those transplanted to unoiled sites. Reduced growth recorded at oiled sites in 1989 but not 1991.

* Population may have been declining prior to the spill;
 -- If no injury was detected or known, no assessment of recovery could be made.

Resource	Description of Injury			Status of Recovery				Geographic Extent of Injury				Comments/Discussion
	Initial Mortality	Population Decline after the spill	Sublethal or Chronic Effects or Exposure	Current Population Status	Sublethal or Chronic Effects or Exposure	Dependency on Currently Degraded Habitat		FWS	Kenai	Kodiak	Alaska Penin.	
						Inter tidal	Sub tidal					
Crab (Dungeness)	NO	NO	NO	--	--	--	--	--	--	--	--	Subtidal sediments collected in 1989 were found to be contaminated at 5 of 8 locations hypothesized to be oiled. Crabs from these locations, however, were not found to contain hydrocarbons.
Shrimp	UNKNOWN	UNKNOWN	UNKNOWN	--	--	--	--	--	--	--	--	In 1990, total number of eggs per female at given size appears to be less in oiled areas. In 1990 a greater number of dead eggs and higher nervousis occurred when compared to 1989 or unoiled areas.
Oyster	UNKNOWN	UNKNOWN	UNKNOWN	--	--	--	--	--	--	--	--	Although studies were initiated in 1989, they were not completed because they were determined to be of limited litigative value.
Scallop												
Sea Urchin												
INTERTIDAL/SUBTIDAL COMMUNITIES												
Intertidal Organisms/Communities	YES	YES	YES	STABLE, BUT NOT RECOVERING (VARIES BY SPECIES)	YES	YES	NO	YES	YES	YES	YES	Measureable impacts on populations in comparison to pre-spill conditions. Upper intertidal zone has not yet recovered.
Subtidal Communities	NO	YES	YES	RECOVERING	UNKNOWN	NO	YES	YES	UNKNOWN	UNKNOWN	UNKNOWN	Recovery is not known but there were measurable differences between oiled and unoiled areas in 1990.

* Population may have been declining prior to the spill;

-- If no injury was detected or known, no assessment of recovery could be made.

TABLE XX: Summary of Injury and Recovery Status for Services Impacted by the *Exxon Valdez* Oil Spill

Service	Status of Injury	Status of Recovery	Geographic Extent of Injury				Comments/Discussion
			PWS	Kenai	Kodiak	Alaska Penin.	
Archaeologic sites/artifacts							
Subsistence							
Recreation							
Wilderness Values							
Intrinsic Values							
Commercial Fishing							

* - Population may have been declining prior to the spill; **N.D.** - Studied, but injury not detected
UNK. - Not studied; **NO** - Studied, but no likely injury; **YES** - Studied, significant evidence of injury