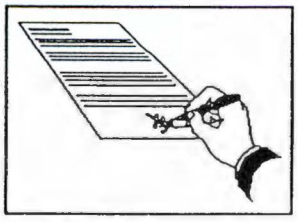
15.2.1 (1 of 2)

Oil Spill Public Information Center

Release to the EVOS Administrative Record



1-11-94

Date

DESCRIPTION OF MATERIAL

Copies of public comments to Yellow Book (1989 NRDA Plan) from Dalton DuLac - Forest Service.

Signatures

Rebecca Williams

(Person releasing material to the Administrative Record)

(Records Manager)

* *Items that are placed in the administrative record are available for public viewing.*

DuPAC

Guide for Using the Coded Comments

In order to work with the coded comments you will need:

1. A set of the coded comments
2. The code sheets
3. The printouts listing the comments for your parts of the document.

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JAN 11 1994
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Explanations

1. The Coded Comments. Each respondent is assigned a unique ID number. All the documents they submitted are under that number. The number is found at the top of the first page. Each substantive comment is identified by a bracket on the right and a stamp. The stamp is composed of five blocks. Since the number of responses was less than expected only two of the blocks were used to sort the comments. **The Comment Number** is in the first block. The comments are numbered consecutively front to back with some exceptions. A few comments were picked up at the time of data entry and inserted between already existing comments. Directions to find them are on the last page of the comments. There are not very many. **The Issue Number** in the third block is the other code used to sort comments. You may get a clue as to the content of the comment by looking at the topic number but it was not used to sort.

2. The Code Sheets. The Code Sheets are your reference for identifying the codes on the coded comments and the printouts.

3. The Printouts. The printouts list all the comments in the database by issue. Each member of the Management Team has a complete set. The lead agencies have printouts with comments on the studies for which they are responsible. The printouts for the Management Team are sorted by issue, response ID number, and comment number. The printouts for the lead agencies have a seperate sheet for each individual study.

Not all comments fit the codes well. In order to limit the number of codes, we sometimes had to use the code which fit best even though it was not entirely accurate. Our objective was to identify the main issues, group them logically, and identify individual comments in those issues for tracking.

The following guidelines were provided to the coders for use in the coding operation.

The Purpose of Coding

To be able to sort information in the public responses and be able to send appropriate comments to the responsible management team members and lead agencies.

If need additional sorts, see Maribe Schmidt in M.S.

The Process

1. Read the response to get an idea of the general content and the feel of it.
2. Re-read the response and identify the substantive comments.
3. Mark the comment, stamp, and code.

Substantive Comments - A substantive comment is:

1. A comment that suggests a change to the document
2. A comment that points out a shortcoming or flaw
3. A comment that supports the document or a portion thereof
4. A comment that does not suggest a specific change but offers the respondent's view of a topic in the document

Only substantive comments will be coded.

Nonsubstantive Comments - Nonsubstantive comments are:

1. Comments which do not address the document
2. Opinions not addressing the document
3. Statements of fact not directly relating to the document
4. Matters of record
5. Paraphrases of the document
6. Resumes, family histories, and folklore

Nonsubstantive comments will not be coded.

CODE SHEET FOR CODES FOR PUBLIC COMMENTS ON THE DRAFT DAMAGE ASSESSMENT

EXXON VALDEZ OIL SPILL

DULAC

Box No. 1. COMMENT NUMBER

Box No. 2. OPINION - Refers to respondents' stated opinions

0 No opinion
1 Like - I like, prefer, advocate, favor, support, etc.
2 Dislike - I disagree with, oppose...
3 Needs modification - Suggested changes to the document.
4 Statements of need - Need more time, more money, immediate aid for villages, etc.
5 Statement of fact - Statements of facts as respondents see them.
6 Requests.

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Box No. 3. ISSUE - This code refers to the subject, issue, or reason for the respondent's statement.

0100 Document, general

0102 Sufficient details to allow evaluation lacking
0103 Statistical methods details lacking
0104 Preservation of data procedures missing
0105 Natural recovery not considered
0106 Resource recoverability analysis missing
0107 Cost of assessment unreasonable
0108 Existing scientific literature discussion missing
0109 Chronology of Spill is inaccurate, misleading

0111 Scope of plan too narrow
0112 Inadequate number of samples
0113 Need to add studies on effects on humans

0130 Plan does not comply with legal requirements of NRDA regs

0131 Baseline definition wrong
0132 Private losses assessed
0133 Counting double losses not avoided

0140 Economics

0141 Economic methodology missing
0142 Discount rates not selected
0143 Damages will be undervalued because of narrow scope

0150 Restoration Plan

0151 Restoration inadequately addressed
0152 Restoration methodology plan missing
0153 Restoration costs inadequately assessed

0200 Process, general

0201 Time allowed for studies too short. Extend the time.
0202 Four-phase procedure in regs not followed
0203 Inadequate preassessment screen
0204 Improper combination of injury determination and quantification
0205 Damage determination studies premature
0206 Potential responsible parties (PRP's) denied involvement in prep
0207 PRP's should not be allowed to participate in the assessment
0208 Need more money
0209 Native organizations involvement

0240 Needed changes in the process

1000 Studies - Statements about studies in general

1100 Coastal Habitat Injury

1110 No 1 Comprehensive Assessment of Injury to Coastal Habitats. ADF&G, USFS

1200 Air/Water Injury

1210 No 1 Geographic Extent and Temporal Persistence of Floating Oil. NOAA, ADEC
1220 No 2 Petroleum Hydrocarbon-Induced Injury to Subtidal Marine Sediment Resources. NOAA, ADEC
1230 No 3 Geographic and Temporal Distribution of Dissolved and Particulate Petroleum Hydrocarbines in the Water Column. ADEC, NOAA
1240 No 4 Injury to Deep Water (>20 meters) Benthic Infaunal Resources from Petroleum Hydrocarbons. NOAA, ADEC
1250 No 5 Injury to the Air Resource from the Release of Oil-generated Volatile Organic Compounds. ADEC
1260 New Study Needed

1300 Fish/Shellfish Injury

1310 No 1 Injury to Salmon Spawning Areas in Prince William Sound. ADF&G
1320 No 2 Injury to Salmon Eggs and Pre-emergent Fry in Prince William Sound. ADF&G
1330 No 3 Salmon Coded-Wire Tag Studies in Prince William Sound. ADF&G
1340 No 4 Early Marine Salmon Injury Assessment in Prince William Sound. ADF&G, NOAA
1350 No 5 Injury to Dolly Varden Char and Cutthroat Trout in Prince William Sound. ADF&G
1360 No 6 Prince William Sound and Gulf of Alaska Sport Fishery Harvest and Effort. ADF&G
1370 No 7 Injury to Pink/Chum Salmon Spawning Areas Outside Prince William Sound. ADF&G
1380 No 8 Injury to Pink and Chum Salmon Egg and Preemergent Fry in Areas Outside Prince William Sound. ADF&G
1390 No 9 Early Marine Salmon Injury Assessment for the Kenai Peninsula and Kodiak/Shelikof Strait. ADF&G
1400 No 10 Injury to Dolly Varden Char and Sockeye Salmon in the Lower Kenai Peninsula. ADF&G
1410 No 11 Injury to Prince William Sound Herring. ADF&G

1420 No 12 Injury Assessment to Kodiak and Alaska Peninsula Herring. ADF&G
1430 No 13 Injury to Prince William Sound Clams. ADF&G
1440 No 14 Injury to Prince William Sound Crabs. ADF&G, NOAA
1450 No 15 Injury to Prince William Sound Spot Shrimp. ADF&G
1460 No 16 Prince William Sound Oysters. ADF&G, NOAA
1470 No 17 Injury to Prince William Sound Rockfish. ADF&G
1480 No 18 Prince William Sound Trawl Assessment. ADF&G, NOAA
1490 No 19 Injury to Larval Fish in Prince William Sound. ADF&G
1500 No 20 Undersea Observations. ADF&G
1510 No 21 Injury to Clams Outside Prince William Sound. ADF&G
1520 No 22 Injury to Crabs Outside Prince William Sound. ADF&G, NOAA
1530 No 23 Injury to Rockfish, Halibut, and Lingcod Along the Lower Kenai Peninsula. ADF&G
1540 No 24 Shellfish and Groundfish Trawl Assessment Outside Prince William Sound. ADF&G, NOAA
1550 No 25 Injury to Scallop Resources in Kodiak Waters. ADF&G
1560 No 26 Injury to Impacts on Sea Urchins off Kodiak Island. ADF&G
1570 Need New Studies

1600 Marine Mammals
1610 No 1 Effects of the Oil Spill on the Distribution and Abundance of Humpback Whales - PWS, SE Alaska, Kodiak Archipelago. NOAA
1620 No 2 Assessment of Injuries to Killer Whales - PWS, Kodiak Archipelago, SE Alaska. NOAA
1630 No 3 Cetacean Necropsies to Determine Injury. NOAA
1640 No 4 Assess the Impact on Steller Sea Lions in PWS and the Gulf of Alaska. NOAA
1650 No 5 Assess the Injury to Harbor Seals in PWS and Adjacent Areas. NOAA
1660 No 6 Assess the Magnitude, Extent, and Duration of Impacts on Sea Otter Populations in Alaska. 9 - USFWS
1670 No 7 Assess the Fate of Sea Otters Oiled and Rehabilitated. USFWS
1680 New Studies Needed

1700 Terrestrial Mammals
1710 No 1 Assessment of the Oil Spill on the Sitka Black-tailed Deer in PWS. ADF&G
1720 No 2 Assessment of the Oil Spill on Black Bear in PWS. ADF&G
1730 No 3 Assess the Effect on River Otter and Mink in PWS. ADF&G
1740 No 4 Assessment of the Oil Spill on Brown Bear Populations on the Alaska Peninsula. ADF&G
1750 No 5 Effects of Oil on Carnivores and Small Mammals Outside PWS. ADF&G

1760 No 6 Influence of Oil Hydrocarbons on Reproduction of Mink. ADF&G

1800 Birds

1810 No 1 Beached Bird Survey to Assess Injury to Waterbirds. USFWS

1820 No 2 Surveys fo Determine Distribution and Abundance of Migratory Birds in PWS and Northern Gulf of Alaska. USFWS

1830 No 3 Population Surveys of Seabird Nesting Colonies in PWS, the Outside Coast of the Kenai Peninsula, the Barren Islands and Other Nearby Colonies Likely to be Impacted. USFWS

1840 No 4 Assessing the Injury to Bald Eagles. USFWS

1850 No 5 Impact Assessment on Peale's Peregrine Falcons. USFWS

1860 No 6 Assessment of the Abundance of Marbled Murrelets at Sites Along the Kenai Peninsula and PWS. USFWS

1870 No 7 Assessment of the Effects on Rep[roductive Success of the Fork-Tailed Storm Petrel. USFWS

1880 No 8 Assessment of Effects on the Reproductive Success of Black-legged Kittiwakes in PWS. USFWS

1890 No 9 Assessment of Injury to Waterbirds Based on the Population and Breeding Success of Pigeon Guillemots in PWS. USFWS

1900 No 10 Assessment on Injury to Glaucous-Winged Gulls using PWS. USFWS

1910 No 11 Injury Assessment of Hydrocarbon Uptake by Sea Ducks in PWS and the Kodiak Archipelago. USFWS

1920 No 12 Assessment of Injury to Shorebirds Staging and Nesting in Rocky Intertidal Habitats of PWS and the Kenai Peninsula. USFWS

1930 No 13 Impact Assessment on Passerines and Other Nongame Birds in PWS. USFWS

1940 No 14 Effects on Migratory Birds on Exposure to North slope Crude Oil. USFWS

1950 New Studies Needed

2000 Technical Services

2010 No 1 Hydrocarbon Analytical Support Services and Analysis of Distribution and Weathering of Spilled Oil. NOAA, USFWS

2020 No 2 Histopathology: Examination of Abnormalities in Tissues from Birds, Mammals, Finfish, and Shellfish Exposed to Spilled Oil. USFWS, ADF&G

2030 No 3 Mapping of Damage Assessment Data and Information. ADNR, USFWS

2040 New Studies Needed

2100 Restoration Plans

2110 No 1 Development of a Restoration Plan. EPA, Alaska - State of

2120 New Studies Needed

2200 Damage Determination: Economic Value of Resource Use

- 2210 No 1 Estimated Price Effects on Commercial Fisheries
- 2220 No 2 Fishing Industry Costs
- 2230 No 3 Bioeconomic Models for Damage Assessment
- 2240 No 4 Effects of the Oil Spill on the Value of Public Land
- 2250 No 5 Economic Damage to Recreation
- 2260 No 6 Losses to Subsistence Households
- 2270 No 7 Study of Loss of Intrinsic Values
- 2280 No 8 Economic Damage Assessment of Research Programs Affected by the Oil Spill
- 2290 No 9 Survey of Archeological Sites Impacted by the Oil Spill
- 2295 New Economic Studies Needed

2300 Fiscal Needs

2400 Appendices

- 2410 Appendix A - Analytical Chemistry and Quality Assurance/Quality Control
- 2420 Appendix B - Histopatholoy Guidelines

Box No. 4 SUGGESTION - None.

Box No. 5. SORT CODES

- 0 Numeric codes capture the comment
- 1 Short comment for inclusion in data base
- 2 Comment too long for data base. See hard copy.

Wurtz

01
06

DuLac

Trustee Council
P. O. Box 20792
Juneau, Alaska 99802

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JAN 11 1994
EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL
ADMINISTRATIVE RECORD

Com.	Topic	Issue	Sug.	Sort
1	4	0201		2

August 25, 1989

Dear Sirs:

I am very distressed about the document I have in front of me, the "State/Federal Natural Resources Damage Assessment Plan for the Exxon Valdez Oil Spill." While the research proposed appears to be relatively well thought-out, there is one critical flaw to the entire plan: The is no way this damage assessment can be properly completed by February 28th, 1990.

Consider, for example, the Coastal Habitat Injury Assessment study plan. On pages 31 and 32 the plan states that between 135 and 150 study sites will be required to properly assess damages in all three geographic areas affected by the spill. Since the so-called "reconnaissance phase" of this project has only just been started, few of those 150 study sites have been identified to date, and fewer still have been visited for the purposes of damage assessment. It is well known that little field work can be done in Prince William Sound after September 15, due to increasingly rough weather conditions. To suggest that 150 sites can be identified, ground-truthed and assessed for damages between now and next February is a joke!

If the Trustee Council allows this deadline to stand, the assessment of damages from the Exxon Valdez Oil Spill will turn out to have been a meaningless bureaucratic paper shuffle. The Trustee Council will have been criminally negligent in its responsibilities to the people of this country.

Sincerely,

T. L. Wurtz

T. L. Wurtz
P.O. Box 82864
Fairbanks, Alaska 99708

AUG 30 '89

A	I	PAO	In'ls
		Nicolls	
		Albavalde	
		Ambrose	
		Firuney	
		Foss	
		Larson	
		Svec	
		Untalasco	
		Williamson	
		File	
		P/C Made	

Larson

Dulac

~~0~~ 02

1565 Sunrise Drive
Anchorage, AK 99508
September 14, 1989

no substantive comments

Com.	Topic	Issue	Sug.	Sort

Trustee Council
P.O. Box 20792
Juneau, AK 99802

Dear Madam or Sir:

I would like to offer one brief comment on the "State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdex Oil Spill, August 1989, Public Review Draft."

The cover artwork grossly distorts the reality of the oil spill. At no time was the spilled oil contained by booms as depicted in the drawing. The oil spread far beyond the small slick which is depicted in the immediate area of the tanker in the drawing.

Visual communication is a powerful and important means of conveying information and feelings. The cover drawing you have selected suggests that the events of March 24 are somehow containable, separate, and not threatening to the surrounding environment. Part of the assessment plan should be an accurate depiction of the damage of the spill through the choice of realistic art work.

If you choose more symbolic or abstract art, carefully consider the images and their meaning. The cover art will be the first information which readers of the report will see and will likely be the most visible part of the reports as they sit on numerous desks and shelves. Because of the prominent position it has, the cover art will likely be the most memorable part of the report and deserves more careful consideration.

Sincerely,

Eric Larson

Eric Larson

SEP 15 '89

A	I	PAO	In'ls
		Nicolls	
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		File	
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912554
03

Dv LAe

August 21st, 1989

EXECUTIVE SECRETARIAT
OFFICE OF THE SECRETARY
1989 SEP -1 A 11:08

Robert Mosbacher
Dept. of Commerce
14th St.
Washington D.C. 20230

Com.	Topic	Issue	Sug.	Sort
1	4	0111		1

This letter is to explain my concern about the lack of research being conducted regarding the beach animals on Kodiak Island.

The effect of the Exxon Oil spill on Kodiak Island has been tremendous. Oil from the spill has been found on every part of the island in every bay and nearly every beach.

To date, nearly 20,000 birds have been found in the Kodiak Island area. The number of birds have not begun to diminish. If anything, the amount of dead birds found daily may still be on the rise. These birds are not full of oil, they are just dead or near death. Also, these birds are not confined to one species. They are of all species.

No one knows how many have really died, but one must assume that the rate of discovery in not very high when the size of the Gulf of Alaska is considered. For these birds to be dead and yet visually untouched by oil, makes me believe that the effects must be either secondary, eating fish already exposed, or through oil affected aquatic plants.

During late July, a small lagoon was found with a circle of dead fish six inches deep and fifty feet in diameter. The whole lagoon is contaminated with thick mousse as is the bay in front of the lagoon. On August 5th, a dead land otter was found in Tonki Bay on North Afognak Island, 40 miles NNW of Kodiak. A dead fox was found in mid-July in Phoenix Bay, also on North Afognak west of Tonki Bay.

As Exxon leaves and the winter storms begin, These dead birds will still be washing up on the beach. The Kodiak Island fox is the largest fox in the world and is also the animal that makes the most use of the beach. After the freeze begins, food becomes more scarce as the winter progresses. Mice, birds, bugs and vegetation that make up the foxes diet cease to be available. The fox then turns to the beach for his food. Both the beach and the "drift" food are contaminated by oil. If the limpits, bidarkas, and other marine life from the beach are affected by oil, the foxes and the otters will be effected as this marine life becomes an important food source for both animals.The fox depends on scavaging for much of his diet, but he is not alone in this type of feeding. Many birds including magpies, crows, ravens, hawks, eagles and several shore birds depend on this same contaminated source for a portion of this diet.

The land otters are eating all of this same marine life plus fish of all kinds. As the oil contamination is spread and ingested by these animals of the beach, who knows what the effects will be or how far reaching.

There is a study going on in Prince William Sound concerning land otters. But that is Prince William Sound, not Kodiak! As far as I know, there is no plan or ongoing project to study the life on the beach that may be more affected than you can realize.

DU KAT

I have lived on Kodiak and it's outer islands for 17 years. I am a commercial fisherman and trapper. I have spent many years living on the beach with these same animals and I understand life in that environment very well. I contend that this is and will be a very big problem that may affect life at this level for a long time.

We need a study on these animals here in the Kodiak Archipelago. I believe it should be done during the winter months when the animals are most concentrated and the contaminated food is a larger part of their diet.

Com.	Topic	Issue	Sug.	Sort
2	4	1750		1

I have sent this letter to other state and federal agencies and departments in addition to private organizations. Please save this for reference in case future discussions on these issues take place.

If you would like to talk to me about these concerns, please get in touch with me. I would like to be part of this study which must ultimately be done!

Sincerely,

Bruce Schaetler

Bruce R. Schactler
P.O. Box 2254
Kodiak, AK 99615
907/486-4686

04 DULAC

Alyeska pipeline SERVICE COMPANY

1835 SOUTH BRAGAW STREET, ANCHORAGE, ALASKA 99512, TELEPHONE (907) 278-1611, TELEX 090-25-127

October 28, 1989

RECEIVED
JAN 11 1994
EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL
ADMINISTRATIVE RECORD

BY AIR COURIER

The Honorable Donald W. Collinsworth
Commissioner
Alaska Department of Fish & Game
P.O. Box 3-2000
Juneau, Alaska 99802

The Honorable Manuel Lujan, Jr.
Secretary of the Interior
18th and "C" Streets, N.W.
Washington, D.C. 20240

The Honorable Clayton Yeutter
Secretary of Agriculture
14th Street and Independence Avenue, S.W.
Washington, D.C. 20250

The Honorable Robert A. Mosbacher
Secretary of Commerce
14th Street and Constitution Avenue, N.W.
Washington, D.C. 20230

Gentlemen:

I enclose Alyeska Pipeline Service Company's comments on the draft State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill, dated August 1989.

We look forward to hearing from you with respect to these comments.

Very truly yours,

Alfred T. Smith
General Counsel

lms

xc: Trustee Council

Alyeska Pipeline Service Company's
Comments on

STATE/FEDERAL NATURAL RESOURCE DAMAGE ASSESSMENT PLAN FOR THE EXXON VALDEZ OIL SPILL

August 1989
(Public Review Draft)

TABLE OF CONTENTS

INTRODUCTION AND SUMMARY

A. Overview

Alyeska Pipeline Service Company ("Alyeska") submits the following comments on the "State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill," dated August 1989 (the "Draft Plan"). Alyeska is the operator of the Trans-Alaska Pipeline System ("TAPS"), through which crude oil flows from Prudhoe Bay, Alaska, to the pipeline terminus located near Valdez, Alaska. From the Valdez terminal, oil tankers owned and operated by other companies transport North Slope crude oil to refineries located in the Lower 48 states. On March 24, 1989, one of those tankers, the Exxon Valdez, ran aground on Bligh Reef, spilling approximately 10.9 million gallons of crude oil into Prince William Sound.

Alyeska and its employees are saddened by the spill and its aftermath. From the company's inception, Alyeska has committed itself to operating TAPS in a manner that minimizes risks to public health and the environment. Now, Alyeska finds itself wrongly identified as potentially responsible for natural resource damages resulting from the Exxon Valdez oil spill.

Alyeska did not cause the spill, nor is it liable for damages to natural resources caused by the spill.[1] Nonetheless, the State of Alaska and the federal government trustees (the "Trustees")[2] notified Alyeska that they were planning to conduct a natural resource damage assessment, identified Alyeska as a "potentially responsible party," and requested comments from Alyeska on the Draft Plan. Although the Trustees mislabeled Alyeska as a potentially responsible party, Alyeska is commenting on the Draft Plan in response to the Trustees' request. As with any other citizen who cares about the quality of the environment, Alyeska strongly supports performance of a scientifically valid, cost-effective assessment.

Com.	Topic	Issue	Sug.	Sort
1	5	0100		2

Com.	Topic	Issue	Sug.	Sort
	~~5~~			~~2~~

Com.	Topic	Issue	Sug.	Sort
2	5	0100		2

Com.	Topic	Issue	Sug.	Sort
3	5	0200		2

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[1]The Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") expressly exempts "petroleum, including crude oil," the substance spilled from the Exxon Valdez. 42 U.S.C. § 9601(14). In addition, Alyeska is not a liable party under CERCLA within the meaning of 42 U.S.C. § 9607(a). Liability under the Clean Water Act extends only to the owner of the vessel from which the oil was spilled, and not to Alyeska. 33 U.S.C. § 1321.

[2]CERCLA provides for designation of federal and state "trustees" who are authorized to assess natural resource damages and press claims for the recovery of such damages, both under CERCLA and the Clean Water Act.

Alyeska's overall comment on the Draft Plan is that it does not comply with applicable legal requirements, does not follow disciplined procedures and use methods designed to produce a valid assessment, will not result in an accurate assessment of natural resource injuries resulting from the spill, and will not assist in the preparation of an appropriate plan to restore those resources in a cost-effective manner.

Com.	Topic	Issue	Sug.	Sort
4	2	0130 0150		2

A fundamental deficiency of the Draft Plan that makes it difficult for Alyeska or anyone else to evaluate it fully is its lack of detail. The Draft Plan fails to provide sufficient information about the methodologies and procedures the Trustees plan to use in the assessment process, or about how (or whether) the many studies outlined in the Draft Plan interrelate with one another and are intended to proceed in a planned and systematic manner to achieve the Trustees' objective. As a consequence, Alyeska's comments on the Draft Plan are necessarily limited in scope and cannot be exhaustive.

Com.	Topic	Issue	Sug.	Sort
5	3	0102		2

B. <u>The Assessment Planning Process</u>

The purpose of a natural resource damage assessment is to determine legally recoverable damages resulting from the loss of public use of natural resources. The Trustees may not assess or recover private damages.

Under mandate from Congress, the Department of Interior ("Interior) promulgated the Natural Resource Damage Assessment Regulations, 43 C.F.R. Part 11 (the "NRDA Regulations" or the "Regulations"). The Regulations lay out a logical, straightforward process for the Trustees to follow in performing the assessment of natural resource injuries, restoration methods, and damages. The first step of the process, the "preassessment phase," is to identify the resources likely to have been adversely affected by the spill, in order to avoid studies not likely to lead to the assessment of recoverable damages.

Com.	Topic	Issue	Sug.	Sort
6	5	0202		2

note bold words

Following the preassessment phase, the Trustees are supposed to prepare a comprehensive assessment plan, which is to ensure that the Trustees will carry out the assessment in a "planned and systematic" manner, at a "reasonable cost," using "cost-effective" methods. The Regulations require the Trustees to complete the plan and submit it for review before performing any of the assessment studies. The assessment plan must specify and require the most accurate and credible damage assessment methodologies available that will yield reproducible and verifiable results using well-defined and accepted statistical criteria.

The first step in performing the assessment itself, the "injury determination phase," requires the Trustees to study the resources they previously identified as **likely** to have been injured

by the spill to determine which resources have **in fact** been injured.

Once the Trustees establish the fact of injury and causation (and not before), they are permitted to proceed to the "quantification phase," during which they quantify the difference between the level of services provided by the resources injured as a result of the oil spill and the "baseline" level of services that would have existed had the spill not occurred. An essential part of this quantification is that the Trustees estimate accurately the time it will take for resources to recover to their baseline levels.

In the final step, the "damage determination phase," the Trustees must evaluate technically feasible restoration alternatives, including the natural recovery alternative. Recoverable restoration-based damages equal the cost of accomplishing the most cost-effective restoration alternative.

C. Summary Of the Draft Plan's Deficiencies

Unfortunately, the Draft Plan neither complies with the Regulations nor proceeds in some other manner to satisfy the objectives of the Regulations. It fails to set forth procedures, studies and scientific methods necessary to an accurate and enforceable damage assessment. The Trustees concede that they commenced the studies outlined in the Draft Plan "[b]ecause of the need to act expeditiously in the wake of the accident . . . ." 54 Fed. Reg. at 33618 (Aug. 15, 1989). Actions taken by the Trustees shortly after the spill were, presumably, stopgap measures designed to collect time-critical field data. They are no substitute, however, for a well-planned, thorough and methodological assessment process. The assessment process now underway and outlined in the Draft Plan will result in a damage assessment that is invalid and unenforceable.

Com.	Topic	Issue	Sug.	Sort
7	3	0130		2

The following is a summary of major identifiable deficiencies in the Draft Plan. Alyeska cannot evaluate each of the 72 studies outlined in the Draft Plan because, in violation of the Regulations, the terse outlines of those studies are wholly inadequate to enable a reviewer to assess, for example, the need for the studies, whether they employ appropriate methodologies and procedures, whether they will be conducted for a reasonable cost, and whether they are appropriately coordinated with other studies to achieve the Trustees' objective.[3] Accordingly, Alyeska's

Com.	Topic	Issue	Sug.	Sort
8	3	0102		2

0107

[3]Alyeska has not commented on the section of the Draft Plan entitled "Fate and Effects of the Spilled Oil" (Draft Plan at 11) or the section entitled "Chronology of the Spill." Draft Plan at 6. The "Fate and Effects" section ignores the substantial body (continued...)

Com.	Topic	Issue	Sug.	Sort
9	3	0108		2

0109

comments are limited to those it is able to make on the basis of the incomplete information contained in the Draft Plan.

1. <u>The Trustees Must Follow The NRDA Regulations</u>.

As a matter of law, the Trustees are required to follow the NRDA Regulations. Their failure to do so will render the entire assessment process unlawful. Even if the Regulations were not legally binding, they embody Interior's determination of the "best available procedures" for assessing natural resource damages. At a minimum, the Trustees must not depart from those procedures without good cause.

Com.	Topic	Issue	Sug.	Sort
10	5	0200		2

2. <u>The Draft Plan Lacks Essential Details And Documentation</u>.

To ensure that the assessment plan is "performed in a planned and systematic manner," is "cost-effective," and is "conducted at a reasonable cost," the Regulations require the assessment plan to identify and document all scientific and economic methodologies and statistical procedures in sufficient detail to permit evaluation. 43 C.F.R. §§ 11.30(b) and 11.31(a). The Draft Plan is neither detailed nor well-documented and, as a result, neither PRPs nor the public can properly evaluate it, and certainly they cannot provide the "independent review" that the Trustees requested.

Com.	Topic	Issue	Sug.	Sort
11	3	0102		2

3. <u>The Trustees Denied Potentially Responsible Parties Any Involvement In Preparing The Assessment Plan.</u>

In violation of the Regulations, the Trustees denied those they labeled "potentially responsible parties" any opportunity to participate in developing the scope and design of the assessment plan. 43 C.F.R. § 11.32(a)(2). The failure to permit such involvement taints the objectivity of the assessment process and is, at least in part, responsible for the deficiencies in the Draft Plan.

Com.	Topic	Issue	Sug.	Sort
12	3	0206		2

4. <u>The Draft Plan Ignores Restoration</u>.

Though the Trustees identify restoration as the "primary objective" of the damage assessment process, the studies outlined in the Draft Plan largely ignore that objective. The Regulations

Com.	Topic	Issue	Sug.	Sort
13	3	0152		2

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[3](...continued)
of knowledge about the effects of a crude oil spill in a marine environment (the section contains no citation whatever to relevant scientific literature), and also ignores the impact of cleanup measures conducted for months after the spill. As drafted, the section is neither accurate nor objective, and does not advance the assessment process. The "Chronology of the Spill" section is unnecessary to the assessment plan. It is also incomplete, misleading and unfairly prejudicial to Alyeska.

from page 3
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require the development of a Restoration Methodology Plan, and prescribe detailed procedures for determining resource recovery periods and evaluating restoration alternatives. See, e.g., 43 C.F.R. §§ 11.73(c) and 11.82. The Draft Plan fails to follow these procedures. Unless the Trustees conduct studies that will assist in determining the natural recovery period and feasible cost-effective restoration alternatives, the Trustees cannot accurately determine restoration-based damages. Moreover, any damages for lost use values will be limited to losses during the interim recovery period, and that is sufficient reason by itself why none of the nine Economic Uses Studies should proceed until the Trustees have estimated the time to recovery.

Com.	Topic	Issue	Sug.	Sort
14	3	0163		2

5. The Draft Plan Fails To Follow The Phased Approach Required By The Regulations.

To achieve an orderly assessment at a reasonable cost, the Regulations restrict the assessment process to the assessment of natural resource injuries caused by the spill. The Regulations establish a logical, four-step process to achieve that goal: the preassessment screen, the injury determination phase, the quantification phase, and the damage determination phase. By failing to do proper preassessment screening as required by the Regulations, the Trustees commenced numerous expensive studies of natural resources that were probably not even injured by the spill. The Trustees should stop these studies immediately. Moreover, the Draft Plan proposes to conduct the injury determination phase and the quantification phase simultaneously, in violation of the Regulations. Finally, the Draft Plan proceeds with damage determination studies before the Trustees have determined factors essential to that phase (e.g., the estimated recovery time of the injured resources). The net result is a process that is not planned and systematic, not cost-effective, not likely to be performed at a reasonable cost, and not in compliance with applicable laws and regulations.

Com.	Topic	Issue	Sug.	Sort
15	3	0203		2

Com.	Topic	Issue	Sug.	Sort
16	3	0204		2

Com.	Topic	Issue	Sug.	Sort
17	3	0130		2

6. The Draft Plan Adopts An Incorrect Definition Of "Baseline" Conditions.

The Regulations limit restoration-based damages to those costs necessary to restore natural resource services to their "baseline" --the condition that would have existed had the spill not occurred. 43 C.F.R. § 11.14(e). Thus, the definition of baseline is critical to the calculation of damages. The Draft Plan erroneously refers to baseline as the "pre-spill" condition, thereby ignoring the well-accepted fact that resource levels vary significantly over time as a result of naturally occurring conditions. Incorrect use of the pre-spill conditions as a baseline will result in improper quantification of damages and an invalid assessment.

Com.	Topic	Issue	Sug.	Sort
18	3	0151		2

7. The Draft Plan Unlawfully Proposes To Study Private Losses.

In direct violation of CERCLA, the Clean Water Act, and the Regulations, the Draft Plan unlawfully proposes to assess private losses from the spill. The Trustees must immediately cease any ongoing assessment of private losses. The law permits them to assess only damages resulting from the loss of **public** use of natural resources.

Com.	Topic	Issue	Sug.	Sort
19	3	0132		2

8. The Draft Plan Fails To Include Measures That Will Avoid Double Counting And Double Recovery Of Damages.

CERCLA and the Regulations expressly prohibit double counting and double recovery of damages. The Draft Plan is not structured to avoid double counting of damages, despite the Trustees' assurance to the contrary.

Com.	Topic	Issue	Sug.	Sort
20	3	0133		2

9. The Draft Plan Fails to Specify Reliable Statistical Methods.

Many scientific studies founder because of lack of care and knowledge at the study design phase to ensure the selection of statistically valid methods. For that reason, the Regulations require that study proposals must contain detailed descriptions of statistical sampling methodologies. The Draft Plan fails, however, to provide the detail necessary to analyze the statistical reliability of the proposed studies.

Com.	Topic	Issue	Sug.	Sort
21	3	0103		2

10. The Draft Plan Fails To Provide For Documentation And Preservation Of All Field Data, Data Analysis And Damage Calculations.

The Draft Plan fails to provide adequately for documentation and preservation of field samples and other data as required by the Regulations. 43 C.F.R. §§ 11.31(a)(1), 11.31(a)(4), and 11.31(b)(2). Failure to comply with the Regulations' requirements in this respect will prevent or materially impair review of the study methods and data by other experts to determine whether the study results are verifiable and scientifically sound.

Com.	Topic	Issue	Sug.	Sort
22	3	0104		2

11. The Draft Plan Fails To Select A Discount Rate.

The Draft Plan should state the discount rates the Trustees propose to use and explain the basis for selecting those rates.

Com.	Topic	Issue	Sug.	Sort
23	3	0142		2

D. Conclusion

The Trustees have a fiduciary obligation to conduct an assessment process that is objective, scientifically valid, and reasonable in cost. Alyeska strongly supports such a process. The Regulations embody procedures, criteria and appropriate methods for

fulfilling the Trustees' obligation, but the Trustees have departed from the Regulations in many critical respects. The planning process to date, and the Draft Plan, are so procedurally and substantively deficient that they will produce an invalid and unenforceable assessment.

Com.	Topic	Issue	Sug.	Sort
24	3	0130		2

In the absence of a proper assessment plan that addresses each of the deficiencies described in these comments, the Trustees should suspend all ongoing assessment studies and should initiate no additional studies unless and until they have completed a proper planning process.

Alyeska hereby requests that the Trustees make available for review by all PRPs all work plans, citations to any existing literature and data on which the Draft Plan relies, and all other information regarding each study in the Trustees' possession or control, including all sampling, analytical and quality assurance/quality control data related to study activities performed to date.

Com.	Topic	Issue	Sug.	Sort
25	6	0100		2

I. THE TRUSTEES MUST FOLLOW THE NRDA REGULATIONS

A. Overview

CERCLA requires the President to promulgate regulations that "identify **the best** available procedures to determine such [natural resource] damages." 42 U.S.C. § 9651(c)(2) (emphasis added). Interior spent years studying, developing and litigating the natural resource damage assessment procedures set forth in the Regulations.[4] Now, confronted with assessing damages resulting from the Exxon Valdez oil spill, Interior and the other Trustees inexplicably are undecided whether, or to what extent, they will follow the NRDA Regulations. Draft Plan at 17-18.

Com.	Topic	Issue	Sug.	Sort
26	3	0130		2

The Trustees state that they expect the assessment procedures will "largely parallel" the Regulations (Draft Plan at 24). As recently as September 1989, counsel for the Trustees asserted that the Trustees have conducted the damage assessment process "in a manner consistent with the regulations." Letter from Dianne H. Kelly, of the Department of Justice, to John Seddelmeyer, dated September 29, 1989. But neither the Draft Plan nor the planning process used by the Trustees "largely parallels" or is "consistent with" the Regulations, and none of the many departures from the Regulations are necessary to comply with law.

The Trustees must follow the Regulations. The consequences of their continued disregard of the Regulations are grave, jeopardizing the entire assessment process.

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[4]In January 1983, Interior issued an Advance Notice of Proposed Rulemaking seeking comment from the public concerning how to approach development of the regulations. 48 Fed. Reg. at 1084 (Jan. 10, 1983). In August 1983, Interior issued a second Advance Notice of Proposed Rulemaking, summarizing the comments received in response to the January notice. 48 Fed. Reg. at 34768 (Aug. 10, 1983). In January 1985, under court order for failing to adopt natural resource damage assessment regulations in timely fashion, New Jersey v. Ruckelshaus, C.A. No. 84-1668 (D.N.J. Dec. 12, 1984), Interior invited public comment and meetings between interested persons and Department officials involved in drafting the regulations. Interior published a proposed rule in December 1985, 50 Fed. Reg. at 52126 (Dec. 20, 1985), and adopted a final rule after extensive public comment in August 1986. 51 Fed. Reg. at 27674 (Aug. 1, 1986). The regulations were challenged in federal court by multiple parties, including several states, national environmental groups and industry associations. Ohio v. Department of Interior, 880 F.2d 432 (D.C. Cir. 1989).

Com.	Topic	Issue	Sug.	Sort
27	5	0130		0

B. CERCLA Requires The Trustees To Comply With The Regulations.

Section 301(c) of CERCLA states that the President or his designee "shall promulgate regulations for the assessment of damages for injury to, destruction of, or loss of natural resources . . . ." 42 U.S.C. § 9651(c)(1). Interior fulfilled this statutory mandate in 1986, 51 Fed. Reg. at 27674 (Aug. 1, 1986), and updated the Regulations in 1988 to incorporate changes mandated by the Superfund Amendments and Reauthorization Act ("SARA"). 53 Fed. Reg. at 5165 (Feb. 22, 1988).

As enacted initially in 1980, CERCLA expressly stated that assessments **must** be performed in accordance with the Regulations: **"In accordance with such regulations**, damages for injury to, destruction of, or loss of natural resources . . . **shall be assessed**. . . ." CERCLA § 111(h)(1) (1980) (emphasis added). Congress could have left greater discretion to the Executive Branch by directing the President to issue guidelines, recommendations or a report. Instead, Congress directed the President to adopt formal regulations for conducting natural resource damage assessments that "identify the best available procedures to determine such damages . . . ." 42 U.S.C. § 9651(c)(2). Congress also specified certain procedures (the type A and type B protocols) and types of damages to be included in the Regulations, 42 U.S.C. § 9651(c)(2), and it required the President to review and revise the Regulations as appropriate every two years. 42 U.S.C. § 9651(c)(3).[5] By their very nature, such regulations impose binding constraints. Batterton v. Marshall, 648 F.2d 694, 702 (D.C. Cir. 1980) (regulations "narrowly constrict the discretion of agency officials by largely determining the issue addressed"); Pacific Gas & Electric Co. v. Federal Power Commission, 506 F.2d 33, 38 (9th Cir. 1974) ("A properly adopted substantive rule establishes a standard of conduct which has the force of law.").

The legislative history of CERCLA shows Congress realized the importance of adhering to regulations that require use of uniform assessment procedures and that Congress intended trustees to follow those procedures. The Senate report states:

> Investigations by the Committee . . . revealed the need for an improved, fair and expeditious mechanism for dealing with natural resource damages caused by releases of hazardous materials. **The principal hindrance to attaining such a mechanism was the absence of a standardized system for assessing such**

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[5]Recognizing that knowledge regarding natural resource damage assessments is evolving, Congress required the Executive Branch to update the Regulations on a regular basis to ensure they remain the "best available procedures" for assessing such damages. S. Rep. 848, 96th Cong., 2d Sess. 86 (1980).

See bolding - their emphasis implies non-compliance

Com.	Topic	Issue	Sug.	Sort
28	3	0130		2

> **damage which is efficient as to both time and cost.**
>
> **The reported bill provides in section 6(e) [now Section 301] that those agencies with management and protection responsibilities over natural resources should standardize a process through regulation for assessing damages to those resources.**

S. Rep. 848, 96th Cong. 2d Sess. 85 (1980) (emphasis added). See also United States v. Reilly Tar & Chemical Corp., 546 F. Supp. 1100, 1119 (D. Minn. 1982) ("The legislative history indicates that the provisions regarding promulgation of regulations and assessment by federal officials were intended to provide a standardized method for determining natural resource damages that would be efficient in both time and cost."). Moreover, Congress funded several years of research into the scientific and economic methodologies of natural resource damage assessment to ensure that the Regulations would incorporate "the most accurate and credible damage assessment methodologies available." S. Rep. 848, 96th Cong., 2d Sess. 85. If government trustees were free to ignore the Regulations, the very reason Congress required promulgation of the Regulations--to ensure a standardized assessment process--would be defeated.

#28

There is no indication in the legislative history that Congress ever intended or imagined that trustees would be free to disregard the Regulations. As initially enacted, CERCLA provided a "rebuttable presumption" to assessments performed by federal agencies in accordance with the Regulations. Congress provided no such rebuttable presumption to states, even though Congress required states to follow the Regulations when performing assessments. As the Senate Report declares: "There is nothing in this bill that precludes a State from carrying out its own natural resource damage assessments, **provided that the State conforms its assessments to the regulations issued under section 6(e)(1) of this Act."** S. Rep. No. 848, 96th Cong. 2d Sess. 87 (1980) (emphasis added).[6] Clearly, Congress intended the Regulations to be binding on federal agencies as well as on states.

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[6]Thus, Congress recognized a distinction between compliance with the Regulations (which it required) and obtaining the rebuttable presumption (which it did not make available to states).

It was not until 1986 that SARA amended Section 107(f) of CERCLA to allow a rebuttable presumption to attach to assessments performed by state trustees in accordance with the Regulations. At the same time, SARA also added language permitting Indian tribes to perform assessments, but did not provide that a rebuttable presumption will attach to such assessments even if they follow the Regulations. See 53 Fed. Reg. at 5166, 5167 (Feb. 22, 1988). This further exemplifies the distinction between compliance with the Regulations and obtaining the rebuttable presumption.

In 1986, Congress enacted SARA and recodified the damage assessment process into what is now Section 107(f), 42 U.S.C. § 9607(f). While the language was changed, there is no suggestion in SARA's legislative history that Congress intended to change the Regulations from binding to optional.

Interior takes the position that the NRDA Regulations are optional,[7] but it provides no citation of authority for the extraordinary proposition that trustees are free to ignore the Regulations except "in those instances where a trustee chooses to use the process contained in the rule to conduct an assessment to obtain a rebuttable presumption." 53 Fed. Reg. at 5170 (Feb. 22, 1988).

Interior's position conflicts not only with the statute and its legislative history, but also with the interpretation of the

#28

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[7]Interior stated in the introductory section of the Regulations that "[t]he assessment procedures in this part are not mandatory." 43 C.F.R. § 11.10. Interior reiterated this view in its Federal Register comments on the Regulations, but made no attempt to reconcile its position with the language of the statute or the legislative history. See 51 Fed. Reg. at 27694 (Aug. 1, 1986) and 53 Fed. Reg. at 5168-69, 5170 (Feb. 22, 1988).

In Ohio v. Department of the Interior, 880 F.2d 432 (D.C. Cir. 1989), the court stated:

> Under the Act, a trustee seeking damages is not required to resort to the Type A or Type B procedures, but CERCLA as amended provides that any assessment performed in accordance with the prescribed procedure is entitled to a rebuttable presumption of accuracy in a proceeding to recover damages from a responsible party.

880 F.2d at 439.

The parties in Ohio did not litigate the binding nature of the NRDA Regulations, and the above-quoted statement is dictum. Moreover, the quoted statement refers only to the "Type A" and "Type B" assessment procedures defined in the Regulations. The Regulations give trustees broad flexibility in deciding whether Type A or Type B procedures should be followed in any given incident. 43 C.F.R. § 11.33. The Ohio court never questioned that the generic sections of the Regulations are binding, including the sections governing preassessment screening, involvement of PRPs in the planning process, and the required detailed contents of an assessment plan.

Environmental Protection Agency ("EPA"). Prior to SARA, CERCLA authorized certain claims against the Superfund for natural resource damages. In 1985, EPA adopted regulations governing such claims, recognizing that the Regulations would be binding when published: "Section 111(h)(1) [now Section 107(f)(2)] provides that injury to natural resources resulting from releases of hazardous substances **shall be assessed** by designated Federal officials **in accordance with regulations** to be promulgated under section 301(c) of CERCLA." 50 Fed. Reg. at 51212 (Dec. 13, 1985) (emphasis added).

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Congress did not require Interior to invest years of effort and extraordinary expense to develop the "best available procedures" for natural resource damage assessments, 42 U.S.C. § 9651(c)(2), in the expectation that a government damage assessment team assembled in response to the Exxon Valdez oil spill would be free to pick which, if any, of the Regulations it might choose to follow. To the contrary, Congress requires adherence to the Regulations. The Trustees' failure to comply with the Regulations will void the assessment. See 5 U.S.C. § 706 ("The reviewing court shall . . . (2) hold unlawful and set aside agency action, findings and conclusions found to be . . . (D) without observance of procedure required by law"); Reuters Ltd. v. F.C.C., 781 F.2d 946, 950 (D.C. Cir. 1986) ("it is elementary that an agency must adhere to its own rules and regulations"); Batterton v. Marshall, 648 F.2d 694, 711 (D.C. Cir. 1980); Confederated Tribes v. F.E.R.C., 746 F.2d 466, 474 (9th Cir. 1984), cert. den. 471 U.S. 1116 (1985).

C. The Trustees Should Follow The Regulations Even If CERCLA Permits The Exercise Of Discretion.

Even assuming for the sake of argument that CERCLA permits the Trustees to exercise discretion in deciding whether to comply with the Regulations, the Trustees cannot use assessment methods or procedures that vary from those contained in the Regulations unless (1) applicable law requires such variance, or (2) facts in the record affirmatively demonstrate that compliance with the Regulations would produce a clearly erroneous result and the alternate procedures used by the Trustees are scientifically and economically valid.

Com.	Topic	Issue	Sug.	Sort
29	3	0130		2

As required by Congress, Interior intended that the Regulations embody the "best available procedures," developed through years of research, drafting, and public participation in Interior's rulemaking process. Covering some 60 pages of text, the Regulations prescribe procedures, criteria and scientific methods that govern every aspect of the assessment process, from subjects as general as the considerations to be used to decide whether to do a Type A or Type B assessment, to subjects as specific as the biological responses to be used to determine when physiological malfunctions are the result of exposure to oil. 43 C.F.R. §§ 11.33

and 11.62(f)(4)(v). At the same time, Interior drafted the Regulations to provide substantial flexibility to accommodate the multitude of resources potentially at issue and the evolving nature of scientific and economic methods. 51 Fed. Reg. at 27675 (Aug. 1, 1986) ("The rule seeks a balance between controlling the potential costs of assessments and the need for flexibility in designing the assessment.").

The recent letter from the Trustees' attorney to Exxon Company appears to concede that the Trustees should follow the Regulations unless applicable law requires otherwise:

> You can appreciate the need for flexibility in using the regulations in light of the recent decision in Ohio v. United States Department of Interior, No. 86-1529 (D.C. Cir. July 14, 1989). Heretofore, the trustees have conducted the damage assessment process in a manner consistent with the requirements of the regulations. **They reserve the right, however, to deviate from the regulations as is necessary to conduct a complete and accurate damage assessment consistent with applicable law.**

note bolding

Letter from Dianne H. Kelly to John Seddelmeyer, dated September 29, 1989 (emphasis added). Alyeska does not object to the Trustees' departure from those few provisions of the Regulations that the Ohio court held violative of CERCLA. The Trustees cannot, however, justify their departure from the balance of the Regulations. The Draft Plan does not explain or demonstrate why the procedures, criteria and methods provided in the Regulations are not fully adequate for the Exxon Valdez assessment. Absent such a demonstration, the Trustees must, and should, adhere to the NRDA Regulations.

Com.	Topic	Issue	Sug.	Sort
30	2	0130 0102		2

II. THE DRAFT PLAN LACKS ESSENTIAL DETAILS AND DOCUMENTATION

In order to ensure that the assessment plan is "performed in a planned and systematic manner," is "cost-effective," and is "conducted at a reasonable cost," the Regulations require a plan to be detailed and well-documented. 43 C.F.R. §§ 11.30(b) and 11.31(a). The Draft Plan is neither. As a result, neither PRPs nor the public can properly evaluate the Draft Plan, and certainly they cannot give it the "independent review" referenced in the Trustees' request for public comments.

Com.	Topic	Issue	Sug.	Sort
31	3	0102		

0107
0107?

The Regulations specifically require the assessment plan to identify and document the use of all the scientific and economic methodologies and statistical analyses that are expected to be performed during the assessment process in sufficient detail to

permit evaluation of the Plan's likely cost-effectiveness and compliance with the Regulations' reasonable cost requirements. 43 C.F.R. § 11.31(a). The Trustees state they will employ procedures "largely parallel" to those outlined in the Regulations, Draft Plan at 24; they state that each study outlined in the Draft Plan "was determined to be acceptable" according to criteria described on page 23 of the Draft Plan; they state that they will fund additional studies only upon a finding that "a study is required to support assessment of legally recoverable natural resource damages, is fully justified scientifically, and is consistent with the ultimate objective of restoration of the ecology of the affected area." 54 Fed. Reg. at 33618 (Aug. 15, 1989). Having established criteria for reviewing the studies, the Trustees solicited comments on the Draft Plan to "ensure," among other things, "that . . . the methodologies are given an independent review and that the appropriate methodologies are chosen for the assessment; and that the costs of assessment are reasonable." 54 Fed. Reg. at 33619 (Aug. 15, 1989); 54 Fed. Reg. at 39586 (Sept. 27, 1989).

The summary outlines of studies contained in the Draft Plan do not permit such review. By any standard--whether measured against the Regulations, some procedures "largely parallel" to the Regulations, or the specific criteria expressed by the Trustees--the outlines of the proposed studies are inadequate. Indeed, they do not even meet the standards that apply to grant applications for scientific studies. No thoughtful scientist would consider submitting a grant proposal as vague and ill-defined as the terse descriptions accompanying each of the proposed 72 studies.

As an example of the problem, the following is the complete description of the proposed model of damages, sampling technique, and testing technique to be employed in Economic Uses Study Number 9:

> A model will be established for the kinds of cultural resources impacted, the degree of impact, and the physical setting in which it occurred. A representative sample of each type of cultural resource affected will be researched, and archeological tests will be conducted.

Draft Plan at 200. This description leaves more questions unanswered than answered. What kind of model will be used? What

Com.	Topic	Issue	Sug.	Sort
32	3	2290		2

sampling techniques will be employed? What kinds of tests will be conducted?[8]

#32

As a further example, **none** of the study descriptions includes any mention--let alone a detailed description--of the proposed methods and analyses for identifying restoration strategies. As a consequence, those responsible for implementing each study may either do nothing to achieve the Trustees' "primary objective" of restoration or be left to develop procedures for considering restoration strategies on an uncoordinated, ad hoc basis. The reviewer of the Draft Plan can only speculate.

Com.	Topic	Issue	Sug.	Sort
33	3	0152		2

see footnote next 34↓ at bottom

Particularly troublesome is the near total absence of references to existing scientific literature and data. It is that existing body of knowledge that is supposed to provide the basis for numerous critical choices that the Regulations require be made and documented in the assessment plan, such as the Economic Methodology Determination, the preliminary determination of recovery periods, and the selection of injury determination and quantification methods that satisfy the Regulations' strict criteria. 43 C.F.R. §§ 11.35, 11.62, 11.64, 11.70, 11.73.

Com.	Topic	Issue	Sug.	Sort
35	3	0108		2

Also absent from the Draft Plan is the kind of budgetary detail required for anyone, Trustees or PRPs, to evaluate likely cost-effectiveness or reasonableness of costs, as required by law. Any kind of normal budgeting process requires sufficient detail to identify major individual cost items, compare alternatives, and consider possible cost reductions. Again, even grant proposals require far more than is contained in the Draft Plan and the individual study descriptions. As an example, the Economic Uses Study section of the Draft Plan proposes nine studies, with no lead agency, and with an aggregate estimated budget of "approximately $2.8 million"--unallocated among the nine studies. Draft Plan at 189.

Com.	Topic	Issue	Sug.	Sort
36	3	2300		2
		2200		2

The law requires a careful, accurate, and cost-effective assessment of the natural resource damages resulting from the Exxon Valdez oil spill. For the Trustees to perform the assessment with credibility and at a reasonable cost, they must devote substantial planning, forethought and coordination to the process prior to the commencement of the studies, and they must document in detail the procedures they expect to use. As Interior stated in the Preamble to the Regulations, the assessment plan should function as a type of "quality assurance plan" for the assessment process:

Com.	Topic	Issue	Sug.	Sort
37	3	0200		2

see next page

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[8]Presumably, prior to including studies in the Draft Plan, the Trustees received information regarding each study from scientists proposing to conduct the study. Accordingly, Alyeska has requested access to all study work plans and other study information in the possession or control of the Trustees.

Com.	Topic	Issue	Sug.	Sort
34	6	0100		2

> The Assessment Plan itself is intended to function as a type of "quality assurance plan" for the entire assessment. Where specific Quality Assurance Plan requirements have not been previously developed for a phase of the assessment, the Assessment Plan should contain sufficient detail to allow review, as mandated in § 11.32(c)(1), of the accuracy of all procedures expected to be used in the assessment process.

51 Fed. Reg. at 27702 (Aug. 1, 1986). In violation of the Regulations and contrary to sound scientific methodology, the Draft Plan contains no assurance of quality, ensuring an inaccurate result.

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III. THE TRUSTEES DENIED POTENTIALLY RESPONSIBLE PARTIES ANY INVOLVEMENT IN PREPARING THE ASSESSMENT PLAN

The NRDA Regulations require the Trustees to permit substantial involvement by PRPs in the assessment planning process. Here, the Trustees did not give the PRPs any opportunity to participate in developing the Draft Plan, and the Trustees compounded that failure by conducting most of the studies before submitting the Draft Plan to the PRPs and the public for review.

Com.	Topic	Issue	Sug.	Sort
38	3	0206		2

Section 11.32(a)(2)(iii)(A) of the Regulations requires the authorized official to send a notice inviting "the participation of the potentially responsible party . . . in the development of the type and scope of the assessment and in the performance of the assessment." The authorized official then must allow at least 30 days from that notice "before proceeding with the development of the Assessment Plan or any other assessment actions." Section 11.32(a)(2)(iii)(B). The Ohio court confirmed that "[p]otentially responsible parties must thus be indulged significant opportunities for involvement and input into the assessment process." 880 F.2d at 480, n. 108.

Interior explained the reasons for PRP involvement to the Ohio court:

> [Interior] explains that PRPs merit more involvement in the pre-assessment process than does the general public because PRPs have a stake in the cost-effectiveness of the assessment methods chosen. [Interior] also contends that involvement of PRPs early in the process will tend to promote settlement of natural resource damage claims.

880 F.2d at 468.

On June 6, Alyeska received a notice from the Trustees inviting it to participate in the "assessment process." Alyeska responded by denying that it should be labeled a potentially responsible party but expressing its desire to participate in the assessment process and to provide substantive input into development of the Plan. Though the Regulations required the Trustees to wait at least until July 5 before proceeding with the development of the assessment plan or with any other assessment actions, 43 C.F.R. § 11.32(a)(2)(iii)(B), the Trustees had, in fact, already substantially completed the Draft Plan before sending the PRP notices. Indeed, by June 23, more than two weeks before the Regulations permitted the Trustees to proceed with developing the plan, the Trustee Council had unanimously approved the Draft Plan. See Letter of July 17, 1989, from Don W. Collinsworth, Alaska Department of Fish and Game, to the three federal Trustees. Further exacerbating the problem, and in violation of Section 11.32(c)(1) of the Regulations, Interior announced on August 11 that "virtually all of the studies" set forth in the Draft Plan "are well underway"--though the Draft Plan was not even distributed for public review until August 22. 54 Fed. Reg. at 33618 (Aug. 15, 1989). Merely giving PRPs, along with the general public, the opportunity to comment on the Draft Plan at this time is inadequate and contrary to Interior's expressed views. See 51 Fed. Reg. at 27703 (Aug. 1, 1986). By denying PRPs an opportunity to develop the type and scope of the assessment, the Trustees violated the Regulations and seriously impaired the objectivity and validity of the assessment process.

IV. THE DRAFT PLAN IGNORES RESTORATION

The Trustees have identified restoration as the "primary objective" of the damage assessment process.[9] Thus, under the Regulations, restoration should provide the framework within which the Trustees quantify damages, "at least where restoration is feasible and can be performed at a cost not grossly disproportionate to the use value of the resource." Ohio v. Department of the Interior, 880 F.2d 432, 446 (D.C. Cir. 1989). Inexplicably, however, the Draft Plan is heavily skewed toward measurement of lost uses that are not shown to be consistent with any restoration objective. The Draft Plan contains no Economic Methodology Determination or Restoration Methodology Plan as required by Sections 11.35 and 11.82 of the Regulations. The Plan also fails to require a resource recoverability analysis under Section 11.73, which calls upon the Trustees to project the rate at which restoration alternatives such as natural recovery are expected to return resource-dependent services to their baseline

[9]Draft Plan, Executive Summary at i; 54 Fed. Reg. at 33618 (Aug. 15, 1989).

Com.	Topic	Issue	Sug.	Sort
39	3	0150		2

← 0151 0

← 0152 0

39a 3 0106 2

levels. In short, the Draft Plan fails to develop a unified, cost-effective assessment plan consistent with its own restoration objective and the Regulations.

The 72 studies identified in the Draft Plan include no substantive analysis of restoration methods or timing. Indeed, none of the Trustees' study acceptance criteria stated in the Draft Plan even mentions the word "restoration." Draft Plan at 22-23. In contrast to this approach, the Trustees have announced that they will fund **additional** research conducted after February 28, 1990, only if a study is "fully justified scientifically, and **is consistent with the ultimate objective of restoration of the ecology of the affected area.**" 54 Fed. Reg. at 33618 (Aug. 15, 1989) (emphasis added). Thus, the Trustees apparently have opted to sever restoration analysis from the damage assessment process now taking place.

The relevant statutes and regulations under which the Trustees' damage assessment must proceed do not permit such bifurcation. Restoration planning is an integral part of the injury quantification and damage determination process. CERCLA requires that the Regulations must identify procedures for measuring damages that "**shall** take into consideration factors including, but not limited to, replacement value, use value, and **ability of the ecosystem or resource to recover.**" 42 U.S.C. § 9651(c)(2) (emphasis added).

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In enacting CERCLA, Congress intended restoration planning to proceed simultaneously with, and as a part of, damage assessment. Likewise, the Senate Report accompanying CERCLA explains that "no restoration action concerning resource damage may take place until a plan outlining the steps to be taken has been developed and adopted . . . . The process of developing such a plan will be of great assistance in avoiding unnecessary costs involved in restoring, rehabilitating, or replacing natural resources." S. Rep. No. 848, 96th Cong., 2d Sess. 85 (1980). Senator Stafford, the leading author and sponsor of CERCLA, underlined the need for the assessment plan to focus on restoration at the outset, stating that natural resource damages could be pursued only after "a restoration plan is developed." 126 Cong. Rec. S 15008 (daily ed. Nov. 24, 1980).

By failing to make restoration an integral component of the Draft Plan, the Trustees have failed to satisfy the Regulations and the very objective that the Trustees state they intend to accomplish. The 72 studies, projected to cost some $35 million, should not commence merely with the hope that they may assist in achieving restoration. Instead, the Trustees must specifically consider the information and data that will be essential to assessing the technically-feasible and cost-effective restoration means. Because the Draft Plan fails to include a restoration objective from the outset in the assessment process, implementation

40 at bottom ↓

of the Plan will result in a costly, wasteful and inefficient effort that will not yield a useful product.[10]

A. The Draft Plan Fails to Include an Economic Methodology Determination.

The Draft Plan fails to incorporate the Economic Methodology Determination required under Section 11.35 of the Regulations, which is critical to an integrated assessment approach. Despite the repeated statements of the Trustees that their goal is "expeditious restoration of the ecology of the affected area," see, e.g., 54 Fed. Reg. at 33618 (Aug. 15, 1989), the Draft Plan contains no estimate of the costs of various feasible restoration alternatives, including natural restoration, and the benefits to be derived from each.

Com.	Topic	Issue	Sug.	Sort
41	3	0141		2

Inclusion of an Economic Methodology Determination at an early stage of the assessment process has very significant implications for the design of the data collection studies used in the injury determination, quantification and damage determination phases. Interior cautions that "[t]he [outcome of the Economic Methodology Determination] will affect the choice of methodologies to be selected in the Quantification phase and to a lesser extent in the Injury Determination phase. Therefore, **the rule requires the [Economic Methodology Determination] at an early stage . . . .**" 51 Fed. Reg. at 27679 (emphasis added).

Com.	Topic	Issue	Sug.	Sort
42	3	0105 0152		2

The only specific discussion of economic valuation methodologies is found at page 24 of the Draft Plan, which simply states that "[e]conomic damages may be calculated as the cost of restoring or replacing the resources, or resource services, injured by the spill in addition to the value of the goods and services reduced or lost as a result of the spill (also referred to as the 'diminution of use values')." This cursory statement does not satisfy the requirements of Section 11.35, nor does it cast any light on how the planners intend to implement restoration-directed research methodologies.

Com.	Topic	Issue	Sug.	Sort
43	3	0141		2

0130

Com.	Topic	Issue	Sug.	Sort
44	3	0130 0152		2

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[10]The NRDA Regulations stipulate that in order for an assessment plan to achieve cost-effectiveness:

> a well-defined objective must be specified. For example, the objective of restoration or replacement is the return to the baseline level of services provided by the resource. Once an objective is defined, cost-effectiveness means that the authorized official must choose the least expensive management or other actions that achieve the objective.

51 Fed. Reg. at 27690 (1986) (emphasis added).

Com.	Topic	Issue	Sug.	Sort
40	5	0130		2

B. The Draft Plan Fails to Include A Restoration Methodology Plan.

Section 11.82 of the Regulations requires that the method chosen for restoration must result from an evaluation performed in a Restoration Methodology Plan. The purposes of the Restoration Methodology Plan are "to ensure that the restoration or replacement alternative that forms the basis of the measure of damages is cost-effective and to serve as a basis for the more detailed restoration or replacement plan that shall be completed after a damage award." 43 C.F.R. § 11.82(b).

The Draft Plan includes no Restoration Methodology Plan.[11] None of the restoration-related information required by the Regulations is anywhere to be found in the Draft Plan. See 43 C.F.R. § 11.82(d). Inevitably, the Draft Plan lacks sufficient detail for PRPs and the public to determine whether "the restoration . . . alternative that forms the basis of the measure of damages is cost-effective . . . ." 43 C.F.R. § 11.82(b).

Com.	Topic	Issue	Sug.	Sort
45	3	0152		2

0102

46 at bottom ↓

C. The Draft Plan Fails to Assess Natural Recovery As Potentially The Best And Most Cost-Effective Means Of Restoration.

A key requirement of the Regulations and the Restoration Methodology Plan is that the Trustees include a No Action-Natural Recovery Alternative that estimates the ability of the resource to recover without additional cleanup actions being taken. 43 C.F.R. § 11.82(d)(2)(i). In drafting the Regulations, Interior recognized that natural recovery may well be the soundest and most cost-effective restoration alternative:

Com.	Topic	Issue	Sug.	Sort
47	3	0105		2

See next page

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[11]Those portions of the Draft Plan that address restoration discuss only a prospective "Restoration Plan" that "will be written . . . as soon as injuries to resources are sufficiently evaluated." See Draft Plan at 26-28, 185-87. The Draft Plan treats this "Restoration Plan" as quite separate from the damage assessment process; it is aimed solely at describing the manner in which any monetary damages to be recovered shall be used to restore injured natural resources: "restoration plan elements will be developed, as soon as practical, **after specific natural resource injuries have been sufficiently evaluated.**" Draft Plan at 27 (emphasis added).

The discussion in the Draft Plan appears to be directed to a **post-assessment phase** Restoration Plan, which is prescribed in Section 11.93 of the Regulations. The Restoration Methodology Plan required in Section 11.82 and discussed above is quite distinct from--and is required **in addition to**--the Section 11.93 Restoration Plan that describes post-damage assessment activities.

Com.	Topic	Issue	Sug.	Sort
46	3	0151		2

0202

> The Department points out that the statute **requires** consideration of natural recovery periods. In order to determine the most cost-effective restoration alternative, the authorized official acting as trustee must also consider effects on services, lost use values, and other economic considerations of the Damage Determination phase. **In considering these factors, it is possible that natural recovery may be the cost-effective alternative.**

51 Fed. Reg. at 27718 (Aug. 1, 1986) (emphasis added).

In the case of the Exxon Valdez spill, it is likely that the most cost-effective and environmentally sound restoration program will be to rely on natural recovery processes in lieu of additional human intervention.[12] Unlike hazardous and toxic chemicals that may persist in the environment or may bioaccumulate, crude oil is

Com.	Topic	Issue	Sug.	Sort
48	1	0105		2

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[12] Particularly in the dynamic, high energy environment of Prince William Sound, there is reason to be optimistic that the initial adverse effects of the spill may be rectified fairly quickly through natural recovery. Furthermore, even to the extent that restoration with additional human intervention is possible, many scientists, environmental managers and planners would question its value. Current concepts of restoration ecology would hold that:

> [T]he principle of homeostasis also rejects expensive and elaborate restoration projects, which strive to replicate the site's prior condition. This "boutique" restoration supplants ecology's balance with humankind's view of how nature should look. Although all of the restored resources may be organic, the result is as artificial as plastic trees. Once a site has been altered, by humans or otherwise, its natural fate is modified. Only by letting nature take its course can people fulfill the important objective of natural homeostasis. Consequently, a relatively simple, minimalist restoration that cleanses the site of excessive human-made stress is best.

F. Cross, Natural Resource Damage Valuation, 42 Vanderbilt L. Rev. 269, 341 (1989) (emphasis added). See also, J. Krutilla & A. Fisher, The Economics of Natural Environments, 45 (1975); Johnson & Bradshaw, Ecological Principles for the Restoration of Disturbed and Degraded Land, in 4 Applied Biology 149 (T. Coaker ed. 1979).

Com.	Topic	Issue	Sug.	Sort
49	1	0105		2

a relatively non-toxic, naturally occurring organic material that is readily subject to volatilization, photochemical oxidation, dispersion, dissolution, emulsification, sedimentation, chemical degradation and biodegradation. Oil spills have been studied extensively by government, industry and academia. Experience with the Santa Barbara oil spill in 1969, the Amoco Cadiz oil spill in 1978, and numerous other large crude oil spills, indicates that natural recovery will lead to rapid restoration of the environment. The Draft Plan fails to consider data and analyses from past spills, other oil spill-related research, and data collected from the Exxon Valdez spill in order to determine the ability of the resource to recover without additional actions being taken beyond those that are being or have been conducted.[13]

#48

Com.	Topic	Issue	Sug.	Sort
50	3	0105		2

0108

Studies included in the Draft Plan also do not account for the cleanup efforts performed by Exxon and the State of Alaska. Cleanup of spilled oil is the principal available means of artificial restoration. Furthermore, the Regulations require that the effects of such response actions must be considered. 43 C.F.R. § 11.84(c)(2). Much has been learned about the effectiveness of cleanups conducted after other spills, and the Trustees should consider that knowledge.

Com.	Topic	Issue	Sug.	Sort
52	3	0108		2

D. The Draft Plan Fails To Incorporate Resource Recoverability Analysis.

The Draft Plan also fails to include a "resource recoverability analysis," which is required by the Regulations and essential to the assessment process. Section 11.73 requires the Trustees to estimate the time needed for each injured resource to recover to the baseline state. Without establishing the estimated recovery period, measurement of economic damages simply becomes impossible. If, for example, the Trustees estimate incorrectly that natural recovery will take ten years when in fact it will take two years, the Trustees might select an artificial restoration alternative at a cost grossly disproportionate to the value of the natural resource services lost during the two-year period of actual restoration. In such a case, the Trustees would be unable to recover the cost of the improper method.

Com.	Topic	Issue	Sug.	Sort
53	3	0106		2

In addition, Section 11.84(g)(2)(ii) of the Regulations expressly states that the diminution of use values should be estimated only **after** the recovery rate is estimated:

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[13]Further, the Trustees should not consider additional human intervention unless it is justified by a thorough, well-documented evaluation of artificial restoration techniques currently available in the biological and physical sciences, engineering and other management sciences, and the long-term and indirect impacts of such restoration alternatives. See 43 C.F.R. § 11.82(2)(iii).

Com.	Topic	Issue	Sug.	Sort
51	3	0152		2

0105

> A recovery rate should be selected for this analysis that is based upon cost-effective management actions or resource acquisitions, including a "No Action-Natural Recovery" alternative. **After** the recovery rate is estimated, the diminution in use values should be estimated.

43 C.F.R. § 11.84(g)(2)(ii) (emphasis added). Simply put, it is impossible to calculate any form of economic damages without first specifying over what time period those damages are being sought.

The Draft Plan's damage assessment studies are fatally flawed by the omission of the critical recovery time variable. For example, the Economic Uses Studies (Draft Plan at 189-201) purport to measure damages without specifying the time period over which the damages will be experienced. Those studies cannot proceed in the absence of a resource recovery analysis.[14]

#53

Com.	Topic	Issue	Sug.	Sort
54	3	2200		2

55 at bottom ↓

V. THE DRAFT PLAN FAILS TO FOLLOW THE PHASED APPROACH REQUIRED BY THE REGULATIONS

The Draft Plan describes an approach to damage assessment that fails to follow the logical, four-step process established by the Regulations--the preassessment phase, the injury determination phase, the quantification phase and the damage determination phase. This fundamental deficiency ensures that the basic purpose of having a plan--to ensure a "planned and systematic" assessment at a reasonable cost--will not be achieved.

Com.	Topic	Issue	Sug.	Sort
56	3	0202		2

A. The Trustees Failed to Perform an Adequate Preassessment Screen.

The preassessment screen is a review of available information to assist the Trustees in identifying potential exposure pathways and potentially affected resources so that an assessment plan can be designed to study **only** those resources that are likely to have been affected by the spill. 43 C.F.R. §§ 11.20-11.25. The Regulations prescribe criteria that must be met and factors that must be considered before preparing the assessment plan and proceeding with the assessment. Had the Trustees conducted an adequate preassessment screen, many of the 72 studies included in

Com.	Topic	Issue	Sug.	Sort
57	3	0203		2

0130

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[14]A further reason the Trustees should not conduct any economic studies in the absence of, among other things, a resource recovery analysis because the Trustees should not assess types of damages that either do not exist on an interim basis, or that will be so insignificant or speculative as to be incapable of reliable measurement or insufficient to justify the costs of assessment (e.g., bequest, option and existence values).

Com.	Topic	Issue	Sug.	Sort
55	3	0106		1

the Draft Plan would not have been done. For example, Fish/Shellfish Study No. 24 proposes to spend $2 million to study shellfish and groundfish **outside** of Prince William Sound, despite the fact that injuries to such fisheries are extremely unlikely. See also, e.g., Marine Mammals Studies and the benthic infauna study discussed in Section C below.

57

Com.	Topic	Issue	Sug.	Sort
58	2	0204		2
		0130		0

B. The Draft Plan Improperly Combines The Injury Determination Phase And The Injury Quantification Phase.

The planned assessment approach established under the Regulations clearly distinguishes between the concepts of "injury" and "damage." See 51 Fed. Reg. at 27682 (Aug. 1, 1986). Injury determination under the Regulations requires that there has been a "measurable adverse change" in the resource being studied, 43 C.F.R. § 11.14(v), and that the adverse change be shown to have resulted from the oil spill. Sections 11.62 through 11.64 set forth specific criteria and testing and sampling methods for determining whether an "injury" has occurred.

The injury determination phase outlined in the Regulations is designed to ensure that **"only assessments involving well documented injuries resulting from the discharge of oil or release of a hazardous substance proceed through the type B assessment."** 43 C.F.R. § 11.61(b) (emphasis added); see also, 43 C.F.R. §§ 11.13(e)(1) and 11.61(a)(1). The Regulations explicitly require the Trustees to conduct a review at the end of the injury determination phase in order to determine which natural resources have been injured as a result of the oil spill and whether and how to proceed with the quantification phase. 43 C.F.R. §§ 11.32(f) and 11.61(e). Unless the Trustees determine, after this initial phase, that an injury as defined in the Regulations has in fact occurred with respect to a particular resource, "no further assessment actions are to be taken and no assessment costs will be recovered." 51 Fed. Reg. at 27679 (Aug. 1, 1986).

Com.	Topic	Issue	Sug.	Sort
59	2	0204		2

The Draft Plan ignores this screening process by proceeding in an undisciplined manner with the injury determination and quantification phases simultaneously. As a result, a number of the 72 studies will try to quantify injuries to resources not likely to have been measurably injured by the Exxon Valdez spill.

C. The Draft Plan Assessment Will Not Be Conducted At A Reasonable Cost.

Com.	Topic	Issue	Sug.	Sort
60	2	0107		2
		0130		

A major risk associated with combining injury determination and quantification into a single process, as the Draft Plan does, is that considerable expense will be incurred by attempting to quantify resource levels for which no verifiable injury is subsequently found to exist, thereby violating the Regulations' mandate that the assessment process be conducted at a "reasonable cost." See 43 C.F.R. § 11.13(c) (the assessment must be "performed

in a planned and systematic manner" and the methodologies chosen must "demonstrate reasonable cost"); § 11.30(b) (assessment plan phases must be conducted "at a reasonable cost").[15] For example, the Draft Plan targets seven different studies to identify **and** quantify possible injuries to marine mammals--including two separate studies that contemplate, among other things, identifying and tracking literally every killer whale pod and every individual humpback whale "in and adjacent to" Prince William Sound. (Marine Mammals Studies Nos. 1-2, Draft Plan at 114-117). Such studies clearly would be wasteful in light of the large body of scientific research and publications demonstrating that many of the posited adverse effects on these species are not likely to have occurred. Similarly, Air/Water Study No. 4 proposes to study benthic infauna residing in waters more than 20 meters in depth, even though it is very unlikely that significant amounts of oil even sunk to such areas. By collapsing the determination and quantification of such unverified injuries, the Draft Plan ensures substantial waste of public funds.

#600

Com.	Topic	Issue	Sug.	Sort
62	1	0205		2
		0130		0

D. <u>The Damage Determination Studies Are Premature</u>

No damage determination studies should proceed until, at the earliest, the injury determination/quantification phases are substantially complete and resource recovery periods have been estimated for each resource. Any other procedure violates the Regulations and good sense. <u>See</u> 43 C.F.R. §§ 11.80-11.84.

VI. THE DRAFT PLAN ADOPTS AN INCORRECT DEFINITION OF "BASELINE" CONDITIONS

The Regulations require an assessment to "determine the physical, chemical, and biological baseline conditions and the associated baseline services for injured resources at the assessment area" that would have existed had the spill not occurred, and to compare that baseline with the post-spill level of services provided by the resources injured as a result of the spill. 43 C.F.R. § 11.72(a).

Com.	Topic	Issue	Sug.	Sort
63	2	0131		2

The Draft Plan departs from the Regulations' definition of the appropriate baseline by incorrectly using "pre-spill" conditions as the standard against which actual (damaged) conditions should be compared. Draft Plan at 22 and 26. The distinction between

[15]Any costs incurred to quantify resources that are found, at the conclusion of the research, to have been unaffected or insignificantly affected by the oil spill would be <u>per se</u> unreasonable and not recoverable from the PRPs. Responsible parties cannot be required to pay for new developmental research necessary to meet the acceptance criteria, or any other research. 51 Fed. Reg. at 27702.

Com.	Topic	Issue	Sug.	Sort
61	2	0107		2
		0206		2

"pre-spill" conditions and "without spill" conditions is very important, because a baseline defined in terms of pre-spill conditions ignores factors that would have influenced the quantity or quality of a resource had the spill not occurred. 43 C.F.R. § 11.14(e).[16] These factors become increasingly important with the passage of time from the date of the spill, as both natural factors--such as ecological succession and natural cyclical changes in the biological resource populations--and human activities influence resource levels. See 51 Fed. Reg. at 27679 (Aug. 1, 1986). Studies will reveal other exogenous factors that would have altered pre-spill conditions dramatically, and the assessment must consider this information.[17]

#63

The Draft Plan further departs from the Regulations by treating baseline as if it could be determined with certainty. Because the baseline is a projection of what would have occurred under a hypothetical set of conditions, the Trustees must acknowledge and account for the inherent uncertainty of such projections. The Preamble to the Regulations points out: "A baseline should allow for comparison with the normal range of variation, rather than being constrained to a single measurement." 51 Fed. Reg. at 27688 (Aug. 1, 1986). The Regulations themselves advise the Trustees that "uncertainty should be handled explicitly

Com.	Topic	Issue	Sug.	Sort
65	2	0131		2

0130 0

[16]Baseline data should reflect conditions that would have been expected at the assessment areas had the discharge of oil or release of hazardous substances not occurred, taking into account both natural processes and those that are the result of human activities. 43 C.F.R. § 11.72(b)(1).

[17]The Preamble to the Regulations explains:

> For almost any parameter being measured, variability is expected, whether that parameter is a physical measurement, such as concentration of an ion in ground water, or a biological measure, such as population levels of an animal species. Some of those parameters may be relatively constant, or vary on an annual cycle; others can be expected to vary cyclically and dramatically, such as "four-year cycles" of lemmings or "ten-year cycles" of lynx, where populations may vary from nearly zero to many thousands in a given area over the course of a fairly regular cycle. Other parameters may change gradually in one direction, as do population changes of many species during ecological success, or show random and unpredictable changes.

51 Fed. Reg. at 27688.

Com.	Topic	Issue	Sug.	Sort
64	5	0131		0

in the analysis and documented. The uncertainty should be incorporated in the estimates of benefits and costs." 43 C.F.R. § 11.84(d)(1). The Draft Plan fails to comply with this provision of the Regulations.

65

A related problem arises from the Draft Plan's failure to indicate how, if at all, the assessment will measure reductions in baseline **services** provided by natural resources, as opposed to changes in the underlying natural resources themselves. Though the Regulations expressly require that the quantification phase of the assessment should measure the effects of a spill in terms of the change in the level of services that injured resources provide, 43 C.F.R. §§ 11.70 and 11.71, the Draft Plan does not indicate whether, or how, it proposes to do so. See, e.g., Draft Plan at 24.

Com.	Topic	Issue	Sug.	Sort
66	3	0131		2

VII. THE DRAFT PLAN UNLAWFULLY PROPOSES TO STUDY PRIVATE LOSSES

CERCLA, the Clean Water Act and the Regulations permit the Trustees to assess and recover damages only for the cost of restoring public uses of natural resources, not losses from privately owned natural resources or private uses of natural resources. It is apparent, however, that a number of the studies in the Draft Plan propose to assess private losses.

CERCLA defines "natural resources" to mean resources "belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States . . . any State or local government, any foreign government, any Indian tribe, or, if such resources are subject to a trust restriction on alienation, any member of an Indian tribe." 42 U.S.C. § 9601(16). This definition "limits the damages compensable to authorized officials to the loss to the general public . . . ." 51 Fed. Reg. at 27695 (Aug. 1, 1986). Trustees are limited still further to recovering damages only for "committed" public uses of natural resources, a "committed use" being defined in the Regulations as either "a current public use; or a planned public use of a natural resource for which there is a documented . . . commitment established before the discharge of oil . . . ." 43 C.F.R. § 11.14(h); see also Ohio v. Department of the Interior, 880 F.2d at 461.

Com.	Topic	Issue	Sug.	Sort
67	2	0132		2

Congress specifically considered and rejected permitting recovery for private losses.[18] Thus, Trustees may not include

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[18]Early drafts of CERCLA would have permitted recovery for damage to private property. See H.R. 7020, 96th Cong. 2d Sess. § 5 (1980) (damages to include "all damages for personal injury, injury to real or personal property, and economic loss, resulting (continued...)

Com.	Topic	Issue	Sug.	Sort
68	5	0132		2

losses suffered by private users of natural resources in a natural resource damage assessment. 51 Fed. Reg. at 27696; Ohio v. Department of the Interior, 880 F.2d at 459-61; accord, Lutz v. Chromatex Inc., 29 ERC 2045, 2049 (M.D.Pa. 1989).[19]

#67

The Draft Plan unabashedly ignores the prohibition on assessing private losses: "The studies outlined in the assessment plan are designed to quantify adverse effects that may be reimbursed--**regardless of who might be reimbursed**--by the potentially responsible parties." Draft Plan at 18 (emphasis added). Though the Draft Plan's descriptions of the various proposed studies are so vague that detailed evaluation is impossible, several of the studies appear on their face to propose studying private losses allegedly caused by the spill. For example:

Com.	Topic	Issue	Sug.	Sort
70	2	0132		2

- Economic Uses Studies Nos. 1, 2 and 3. Economic Uses Study No. 1 studies "Estimated Price Effects on Commercial Fisheries." Draft Plan at 190. Economic Uses Study No. 2 studies "Fishing Industry Costs." Draft Plan at 191. Economic Uses Study No. 3 quantifies the "effects of the oil spill on fishery resources and the commercial fisheries . . . ." Draft Plan at 192. The Draft Plan provides no explanation how these studies are relevant to anything other than the assessment of commercial losses suffered by private parties.

Com.	Topic	Issue	Sug.	Sort
71	3	2210 2220 2230		1

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[18](...continued)
from such release or threatened release"). Congress rejected this language and provided only for recovery of damage resulting from the loss of committed public uses of natural resources.

#68

[19]Trustees must carefully limit assessment studies to those necessary to assess recoverable damages resulting from loss of the general public's use of natural resources. As Interior stated in the Preamble to the Regulations:

> During an assessment, studies of injury or damage that do not directly contribute to the determination of a dollar value for the injured resource should not be part of the damage claim.

51 Fed. Reg. at 27682 (Aug. 1, 1986). Indeed, in sharp contrast to the criteria for including studies in the Draft Plan (see Draft Plan at 22-23), the Trustees announced in a recent Federal Register notice that "[a]dditional studies will be funded only upon a finding that a study is required to support assessment of legally recoverable natural resource damages . . . ." 54 Fed. Reg. at 33618 (Aug. 15, 1989) (emphasis added).

Com.	Topic	Issue	Sug.	Sort
69	3	0133		2

Private litigants have already filed numerous lawsuits seeking damages for losses allegedly incurred by the commercial fishing industry as a result of the spill.

#71

- Economic Uses Study No. 4. This studies the effects of the spill on the value of public land, and includes within its scope the use value of private commercial enterprise such as mining, logging and gravel extraction.

Com.	Topic	Issue	Sug.	Sort
72	5	2240		2

0132

- Economic Uses Study No. 6. This studies losses to subsistence households. To the extent these are recoverable losses, they are private not public, and are beyond the scope of this assessment process. Private litigants have filed several lawsuits seeking damage for losses to subsistence households.

Com.	Topic	Issue	Sug.	Sort
73	2	2260		2

0132

- Economic Uses Study No. 7. This studies the loss of "intrinsic values," including "option value," "existence value," and "bequest value," without any attempt to define any such public loss.

Com.	Topic	Issue	Sug.	Sort
74	2	2270		2

0132

- Economic Uses Study No. 8. This assesses damages to research programs affected by the spill, including research by "private groups."[20]

Com.	Topic	Issue	Sug.	Sort
75	5	2280		2

76 ↓ at bottom

- Economic Uses Study No. 9. This assesses damages to archaeological sites. Archaeological sites are not "natural resources" within the meaning of CERCLA or the Regulations, and thus are not properly the subject of this assessment process. Moreover, the study makes no distinction between sites on public or private land.

Com.	Topic	Issue	Sug.	Sort
77	2	2290		2

- Fish/Shellfish Study No. 16. This studies the impact of the spill on three private commercial oyster farms. Any injuries to those oyster farms are beyond the proper scope of this assessment process.

Com.	Topic	Issue	Sug.	Sort
78	2	1460		2

- Fish/Shellfish Study No. 25. This studies potential injury to the commercial scallop fishery based out of Kodiak. Any damages are beyond the scope of this process.

Com.	Topic	Issue	Sug.	Sort
79	2	1550		2

- Fish/Shellfish Study Nos. 1, 7, 11, 12, 15, 22, 24 and 26. These studies emphasize the substantial

Com.	Topic	Issue	Sug.	Sort
80	3	1300 0132		2

Com.	Topic	Issue	Sug.	Sort
76	2	0107		2

[20]Alyeska does not concede that research projects are among the natural resource services for which damages are recoverable.

commercial value of the subject resource and the alleged financial losses to be experienced by commercial fisheries if the spill adversely affects the abundance of the resource. The Trustees must ensure that these studies are restricted so they study only public losses.

#80

The studies mentioned above exemplify the Draft Plan's failure to observe the statutory boundary between assessing damages sustained by private interests and natural resource damages sustained by the general public.[21]

The Trustees should immediately discontinue the assessment of any private losses resulting from the spill.

Com.	Topic	Issue	Sug.	Sort
81	2	0133		2

VIII. THE DRAFT PLAN FAILS TO INCLUDE MEASURES THAT WILL AVOID DOUBLE COUNTING AND DOUBLE RECOVERY OF DAMAGES

82 at bottom +

CERCLA § 107(f)(1) decrees that "[t]here shall be no double recovery under this chapter for natural resource damages . . . ." The Regulations forbid both double recovery and double counting. 43 C.F.R. §§ 11.15(d), 11.84(c)(1), and 11.84(c)(2). The Draft Plan is not structured to avoid double counting of damages, despite the Trustees' assurance to the contrary. Rigorous analysis and coordination is required to avoid double counting and double recovery problems, of which there are many different types. Several examples will illustrate the problem:

Com.	Topic	Issue	Sug.	Sort
83	3	0133		2

1. Economic Uses Study No. 4 proposes to study the effects of the oil spill on the "value of public land." Draft Plan at 193. But all of the reduced land value claims in that proposed study double count reduced use values that are already being assessed elsewhere, both within the Draft Plan and privately. Any reduction in the value of land is exactly the reduced value of the (capitalized) use rights of that land (whether the use rights be, e.g., for logging, mining or recreation).

Com.	Topic	Issue	Sug.	Sort
84	2	2240		2

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[21]The relevant "public" does not include citizens of foreign countries. See 43 C.F.R. § 11.84(i)(2). Thus, Economic Uses Study No. 5, which studies economic damages to recreational services incurred by "recreationists from throughout the United States and other countries," is overly broad. The Trustees must limit that study and all studies to assessments that are necessary to determine recoverable damages.

Com.	Topic	Issue	Sug.	Sort
82	2	2250		2

Funds spent assessing losses that are not recoverable under CERCLA or the Clean Water Act (including funds spent for studies that commingle private losses and public losses) are not reimbursable.

Because reduced use values are already being claimed (see, e.g., the Economic Uses Study No. 5), to claim them again, under another name, is simply double counting.[22]

#84
85 at bottom ↓

Com.	Topic	Issue	Sug.	Sort
86	3	0133		2

2. Another form of double counting occurs when the Draft Plan assesses alleged damages that are also the subject of private claims. Virtually every type of damage being assessed by the Draft Plan is also being claimed in one or more lawsuits brought by private litigants or the State of Alaska. See, e.g., Economic Uses Studies discussed in Section VII above.[23]

87 at bottom ↓

Com.	Topic	Issue	Sug.	Sort
88	3	0133		2

3. The Draft Plan's failure to identify interdependent services will lead to yet another form of double counting. The Regulations specifically require the identification of interdependent services to avoid double counting and provide that only the **net reductions** in services can be claimed. 43 C.F.R. §§ 11.71(b)(4) and 11.71(1)(1). The Draft Plan provides no procedures for identifying interdependent services.

4. The Draft Plan also fails to ensure that the final damage assessment will quantify only the **net effects** of the spill on natural resources, taking into account not only interdependent services, but also various increases and reductions in services across the spectrum of those measured in the assessment process. By failing to take net effects into account, the Draft Plan will produce an inaccurate assessment.

Com.	Topic	Issue	Sug.	Sort
89	4	0102		2

5. The proposed Economic Uses Studies fail to consider the effects of response actions (oil cleanup activities) as required by the Regulations. 43 C.F.R. § 11.84(c)(2). This failure will lead to another form of double counting.

Com.	Topic	Issue	Sug.	Sort
90	3	0133		2

0102

In sum, despite the Trustees' assurance that they will take care to avoid double counting, the Draft Plan fails to do so.

---

[22]This study is also improper and wasteful because it proposes a general study of changes in public land values, though the "committed use" requirement of the Regulations would permit consideration (if at all) only of effects on land sales that were specifically planned and "committed" before the spill. 43 C.F.R. §§ 11.84(b)(2) and 11.14(h).

Com.	Topic	Issue	Sug.	Sort
85	2	0133		2

[23]Alyeska does not concede that such private litigants have stated a cause of action.

Com.	Topic	Issue	Sug.	Sort
87	2	0132		2

IX. THE DRAFT PLAN FAILS TO SPECIFY RELIABLE STATISTICAL METHODS

Com.	Topic	Issue	Sug.	Sort
91	5	0103		2

A. The Draft Plan Is Inadequate to Ensure Valid Statistical Sampling.

Many of the proposed studies in the Draft Plan rely on statistical methods, including statistical sampling, for the determination and quantification of injury and for damage determination. Details of the statistical sampling plans are not included in the Draft Plan, however. The purpose of a statistical sample is to study a portion of a population and then to extrapolate those findings to the entire population. The reliability of this extrapolation depends, in part, on the extent to which the samples are selected to be representative of the population as a whole. Samples that are procured haphazardly or otherwise fail to conform to a statistically valid, probability-based sampling plan will generate biased, erroneous results and cannot be used reliably.

The NRDA Regulations direct the Trustees to disclose their proposed sampling methodologies in detail:

> [T]he Assessment Plan shall include the sampling locations within those geographical areas [impacted by the spill], sample and survey design, numbers and types of samples to be collected, analyses to be performed, preliminary determination of the recovery period, and other such information required to perform the selected methodologies.

43 C.F.R. § 11.31(a)(2).

The Draft Plan recognizes that a statistically valid design is necessary if the findings in the sampled areas are to be reliably extended to areas not sampled:

> The statistical design, in accordance with the Quality Assurance Program, will permit extrapolation to the entire affected area of the injuries determined through analysis of the study sites.

Draft Plan at 30.

Cont next page.

Com.	Topic	Issue	Sug.	Sort
92	5	2410		2

Turning to Appendix A, which discusses the Draft Plan's Quality Assurance Program, one finds no instructions or guidance whatever to ensure a valid statistical design or sampling plan. Rather, the Quality Assurance Program described in Appendix A is limited to "minimum requirements necessary to validate the data generated by analytical chemistry laboratories. **Quality assurance**

requirements for other types of measurements are not addressed." Draft Plan at 212 (emphasis added). Nor do the individual plans contain a description of how they intend to achieve a statistically valid sampling plan. For example, Fish/Shellfish Study No. 1 states:

> Of the 211 aerially surveyed index streams in the Sound, a **statistically significant number (tentatively 100) will be surveyed** in this study.

Draft Plan at 51 (emphasis added). The study does not discuss why it thinks 100 streams is the appropriate number to survey. Nor does it mention how the 100 streams are to be chosen.

#91

Com.	Topic	Issue	Sug.	Sort
93	5	0103		2

B. The Draft Plan Lacks Safeguards To Ensure Accurate Surveys and Interviews.

A number of the Draft Plan studies rely on use of surveys and interviews. It is well known and not controversial that surveys and interviews are subject to both "sampling error" and "non-sampling error." Sampling error is unavoidable. It is the consequence of having studied a sample rather than the entire population. The magnitude of sampling error can be determined if a statistically valid, probability based, "random" sample is used. Non-sampling error arises from obtaining and recording observations incorrectly, or from failing to obtain observations. Non-sampling error is an important practical problem in sample surveys and interviews because it is difficult to avoid, difficult to detect and is potentially much larger than sampling error. "Interviewer bias" is one form of non-sampling error. Interviewer bias is the result of intentional or unintentional influence by the survey interviewer on the results of a survey. For example, when an interviewer poses a question, the wording, intonation or facial expression of the interviewer can be predicted to influence the answer to that question.

In violation of the Regulations, the Draft Plan fails to provide the detail necessary to analyze the statistical reliability of the proposed studies, and individual study descriptions do not include safeguards to protect against interviewer bias and other forms of sampling and non-sampling errors or to allow for the detection of such errors if present.

Com.	Topic	Issue	Sug.	Sort
94	5	0104		2

X. THE DRAFT PLAN FAILS TO PROVIDE FOR DOCUMENTATION AND PRESERVATION OF ALL FIELD DATA, DATA ANALYSIS AND DAMAGE CALCULATIONS

An assessment plan must include procedures to document every factual finding on which the damage determination relies, and every cost for which the Trustees intend to seek reimbursement from PRPs.

For instance, Section 11.31(a)(1) of the Regulations requires that an assessment plan shall "identify and document the use of all of the scientific and economic methodologies that are expected to be performed . . . ." Section 11.31(a)(4) states that the Plan shall "contain procedures and schedules for sharing data, split samples, and results of analyses, when requested, with any identified potentially responsible parties . . . ." Section 11.30(c)(2) states that costs incurred by the Trustees "shall be supported by appropriate records and documentation . . . ."

#94

The purpose for these requirements is clear: Reviewers must be able to verify the data and replicate all calculations underlying the Trustees' damage claims.

A. <u>Documentation</u>

The Draft Plan falls far short of meeting the documentation requirements outlined above. The documentation for each study should provide a complete audit trail of facts and figures from source documents through final reports and conclusions. Trustees must provide enough detail to allow reviewers to trace and replicate all calculations, and to review all samples gathered, questionnaires filled out, and laboratory tests performed. The records must show what methodologies were chosen and why. The audit trail should include, among other things:

- Original planning documents for all data collection and field and sample surveys, including data collection work plans, sample frame listings and procedures used to select sample and survey locations and subjects.

- Original documents on which facts, figures, notes and comments were recorded, such as questionnaires, interviewers' and field surveyors' notes and records, chain-of-custody records, laboratory measurements and reports, and technicians' observations and conclusions.

- Work papers, quality assurance/quality control records, computer programs and printouts, and intermediate data sets documenting all calculations, editing and other data manipulation.

Full documentation is especially important when statistical methods are to be used, as many of the studies propose. Unless reviewers can trace numerical calculations, it will be impossible to verify that the assumptions of the statistical methods were met and that the calculations were performed correctly.

B. **Preservation**

The Regulations require the Trustees to preserve all field samples and other data, to state what procedures they intend to follow for data collection and preservation, and to share data with PRPs on request. See 43 C.F.R. §§ 11.22, 11.31 and 11.64.

The Draft Plan is seriously deficient in that it not only omits this information,[24] it actually states that certain data will be discarded: The Quality Assurance/Quality Control Plan declares that "[u]nacceptable performance will result in the discarding of the associated data." Draft Plan at 217.

#94

XI. THE DRAFT PLAN FAILS TO SELECT A DISCOUNT RATE

The Draft Plan states that the Trustees have not yet decided whether to use the discount rate called for in the Regulations. Draft Plan at 26. The Trustees should state any discount rates they propose to use, and they should explain any deviation from the ten percent (10%) rate specified in the Regulations, see 43 C.F.R. § 11.84(e)(2).

Com.	Topic	Issue	Sug.	Sort
95	3	0142		2

[24]Appendix A to the Draft Plan consists of a Quality Assurance/Quality Control Plan for the analytical chemistry portions of the assessment. The Table of Contents to Appendix A states that Section 2.3 discusses "Sample Preservation and Holding Times." Draft Plan at 211. Curiously, the Quality Assurance/Quality Control Plan contains no Section 2.3.

Com.	Topic	Issue	Sug.	Sort
96	5	2410		2

04

Alyeska pipeline SERVICE COMPANY

1835 SOUTH BRAGAW STREET, ANCHORAGE, ALASKA 99512, TELEPHONE (907) 278-1611, TELEX 090-25-127

September 11, 1989

BY FACSIMILE

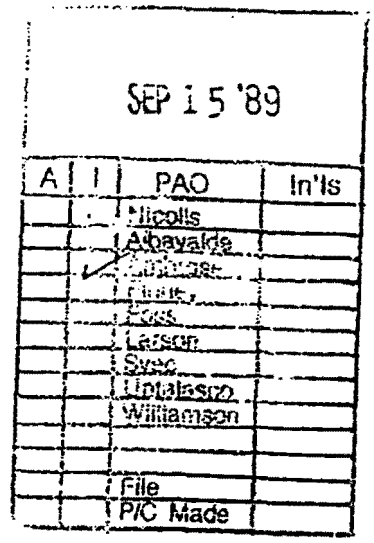
VIA AIRBORNE

The Honorable Donald W. Collinsworth
Commissioner
Alaska Department of Fish & Game
P.O. Box 3-2000
Juneau, Alaska 99802

The Honorable Manuel Lujan, Jr.
Secretary of the Interior
18th and "C" Streets, N.W.
Washington, D.C. 20240

The Honorable Clayton Yeutter
Secretary of Agriculture
14th Street and Independence Avenue, S.W.
Washington, D.C. 20250

The Honorable Robert A. Mosbacher
Secretary of Commerce
14th Street and Constitution Avenue, N.W.
Washington, D.C. 20230



Gentlemen:

Alyeska Pipeline Service Company has received a copy of the draft State/Federal Natural Resource Damage Assessment and Restoration Strategy for the Exxon Valdez Oil Spill and plans to submit comments on it. Given the size and significance of the plan and the breadth of the studies identified in it, Alyeska requests a 30-day extension of the comment period from September 30 to October 30, 1989. As discussed briefly below, the circumstances warrant an extension, and a 30-day extension will not delay the assessment process.

Com.	Topic	Issue	Sug.	Sort
97	4	0200	X	2

In your Notice of Intent to Perform an Assessment, you identify Alyeska as a "potentially responsible party" and invite its participation in the natural resource damage assessment process. The participation of a potentially responsible party in the damage assessment process is consistent with the requirement of 43 C.F.R. § 11.32(a)(2)(iii)(A), which provides that the authorized official "shall invite the participation of the potentially responsible party . . . in the development of the type and scope of the assessment and in the performance of the assessment." The recent court of appeals decision in Ohio v. Department of Interior, and the Department of the Interior's views as expressed in that decision, also expressly contemplate significant opportunities for potentially responsible parties to be involved in the pre-assessment and assessment process.

Com.	Topic	Issue	Sug.	Sort
98	5	0200	X	2

As you know, Alyeska denies that it is potentially responsible or liable in any respect for damages resulting from the M/T Exxon Valdez discharge. Nevertheless, Alyeska accepted your invitation to participate in the assessment process because you have designated it as a potentially responsible party, because Alyeska shares the widespread concern regarding the natural resource impacts caused by the spill, and because Alyeska strongly supports a cost-effective, comprehensive and accurate damage assessment.

Com.	Topic	Issue	Sug.	Sort
99	2	0206	X	2

Thus far, despite the above, Alyeska has been denied any opportunity to participate in the development of the type and scope of the assessment or otherwise to give any input into the assessment process. Alyeska's opportunity to comment on the draft damage assessment plan is its first opportunity to participate in any way. Given the length, complexity and significance of the draft plan and the non-involvement of the "potentially responsible parties" in the development of the plan, it is reasonable to extend the comment period until at least October 30. The regulations expressly contemplate the granting of such an extension. 43 C.F.R. § 11.32(c)(1).

Com.	Topic	Issue	Sug.	Sort
100	3	0206		2

An extension of the comment period will not delay the assessment process. The Department of the Interior has stated that virtually all of the studies outlined in the draft plan are already underway, that field data gathering will cease in mid to

late September, and that data analysis will occur until February 28, 1990. 54 Fed. Reg. 33,618 (Aug. 15, 1989). The requested extension will not impede that process.

We understand that, though the federal and state representatives on the Trustee council approved the draft damage assessment plan on June 23, 1989, its publication was delayed for two months beyond that date to permit further agency review. If the agencies that drafted the plan took two months to review the plan following its completion, the potentially responsible parties--who had no opportunity to participate in drafting the plan--should receive at least that long to comment on the plan.

All parties involved in this process surely share the common goal of a cost-effective and accurate natural resource damage assessment. Alyeska would like the opportunity to comment on the plan with that goal in mind. An extension of the comment period until at least October 30 is reasonable under the circumstances and will not delay the assessment process.

Com.	Topic	Issue	Sug.	Sort
101	4	0202	X	2

Because time is running short, we would appreciate your responding to this request at your earliest opportunity. For your convenience, my telecopy number is (907) 265-8611.

Sincerely,

Alfred T. Smith
General Counsel

lms

xc: Mr. Michael A. Barton
Mr. Steven Pennoyer
Mr. Walter O. Stieglitz
Trustee Council

05

Du Lae

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RECEIVED
JAN 1 1 1994
EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL
ADMINISTRATIVE RECORD

13 September 1989

Trustee Council
Box 20892
Juneau, Alaska 99702

Gentlemen:

RE: DAMAGE ASSESSMENT - EXXON VALDEZ

Pursuant to the Federal Register notice dated 15 August 1989 [54 Fed. Reg. 33618], we attach comments regarding the captioned report dated August 1989.

The comments, as submitted, are critical of the report. However, they are submitted in hopes of providing an industrial balance to the assessment plan.

Very truly yours,

G.H. Holliday

G.H. Holliday Ph.D. P.E., DEE
President

a8906-48

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COMMENTS ON STATE/FEDERAL NATIONAL RESOURCE DAMAGE ASSESSMENT PLAN FOR THE EXXON VALDEZ OIL SPILL - PUBLIC REVIEW DRAFT - AUGUST 1989

By

G.H. Holliday Ph.D., P.E., DEE

INTRODUCTION

There is no question the Clean Water Act [33 USC 1321(f)(5)] authorizes the State to "...act on behalf of the public as trustee of natural resources to recover...costs of replacing or restoring...resources [lost or damaged by oil ...discharged in violation of section(b)(3)...". Nevertheless, the proposed oil spill assessment appears premature. In effect, this instant assessment is the equivalent to assessing the results of an operation before the incision has healed. Additionally, the assessment report is biased toward an a priori establishing the oil spill occasioned harm to all natural resources. Also, the report is written to convey guilt by Exxon. The form of presentation of the various study follows a standard format saying "get Exxon". This is not normal writing form, since typically the topic of the report "Exxon Valdez" would be presented at the beginning of the report but not at virtually every page throughout the report.

Com.	Topic	Issue	Sug.	Sort
1	3	0100	X	2

Furthermore, lack of objectivity is demonstrated by allowing only government employees to participate in process. Participation of knowledge industry scientist provides balance and a broader viewpoint.

Com.	Topic	Issue	Sug.	Sort
2	3	0240	X	2

Comment: We find no restriction in the statute or regulations prohibiting participation by industry.

Specific Comments

1. Page 8, 3rd. bullet, line 2 - Slow response time

The report correctly states: "response equipment was not deployed quickly". However, the report neglects to state the real reason for the delay. First, the dedicated

For remainder of this comment letter ↙

Com.	Topic	Issue	Sug.	Sort
3	3	0109	X	2

To end

barge had been cleared of equipment for barge repairs. Second, Alyeska began loading spill containment equipment. The Coast Guard requested Alyeska remove the containment equipment and load oil lightering equipment. Then, the Coast Guard ordered Alyeska to unload the lightering equipment and then load spill containment equipment. The loading and unloading process approached a Chinese Fire Drill.

Comment The root cause was the indecision of the Coast Guard.

2. Page 8, 5th. bullet, line 1 - Insufficient equipment

The report states "[t]he number and size of booms available were insufficient to contain the spill". First, Alyeska had available all of the boom required by the Contingency Plan. Second, the Contingency Plan had been approved by the State of Alaska as adequate for tanker operations in Prince William Sound. Third, Coast Guard did not permit closing of the boom to encircle the tanker because of the danger of creating a natural gas bubble around the ship. Also, encircling the tanker would have interfered with lightering operations, i.e., ingress and egress of the lightering vessels.

Comment: Thus, placing blame on Exxon is not appropriate.

3. Page 8, 5th. bullet, line 2 - Too little equipment, too late

The report cites: "[f]ew skimmers were put to work during the first 24 hours". The Alyeska Contingency Plan includes a spill scenario almost identical with the spill associated with the Exxon Valdez grounding. The Plan clearly called for use of dispersants on an oil release of this magnitude. Experience shows removing of thousands or millions of gallons of crude oil from water is an impossible task using skimmers. When Alyeska requested agreement to apply dispersant in accordance with the preapproved plan, permission was delayed for days. A severe storm occurred immediately after government approval for use of dispersants. Accordingly, dispersant could not be applied in a timely fashion as prescribed by the State approved Contingency Plan.

Comment: Government interfered with proper oil spill remediation by not following the preapproved plan.

4. Page 8, 5th. bullet, line 3 - No oil recovery barge

The report criticizes Alyeska for not having a barge available to contain recovered oil. In fact, the state approved Contingency Plan did not contemplate skimming such

large volumes of oil. Also, the plan did not require an oil recovery barge, since the plan specifically relied upon dispersing the released oil.

Comment: The government is finding fault with the preapproved spill plan after the fact.

5. Page 8, 6th. bullet, line 9 - Not enough containment equipment

The report states: "there was not enough equipment [spill containment] equipment left to contain the oil or to protect other sensitive areas". The amount of spill containment equipment available at the site was exactly that specified in the State approved Contingency Plan. Most of the available boom was deployed at the grounded tanker. The use of dispersants would have freed booms for other uses and permitted better control and countermeasures.

Comment: It is easy and politically expedient to avoid recognizing a preapproved Contingency Plan existed.

6. Page 9, 6th. bullet, line 2 - Mousse and tar balls

The report discusses "mousse and tar balls". However, the authors neglect to discuss the fact the oil now contains less aromatics and there is much less toxic to fish and wildlife.

Comment: Mousse and tar balls are made to portray a very bad situation.

7. Page 11, Fate and effects of the spilled oil

This section contains many statements of speculation and equivocation. For example:

a. Page 11, last paragraph, line 1 - Intertidal speculation

The report states "[w]hen floating oil or mousse contacts land, it may be stranded in the intertidal zone". (emphasis added) With all of the expertise of the Interagency Shoreline Cleanup Committees [page 11, carryover paragraph, line 5] it appears an unequivocal statement could be made about whether the oil was or was not stranded in the intertidal zone. The entire last paragraph on page 11 contains statements designed to suggest great danger to the environment but without proof or citation of data or references.

Comment: Technical honesty appears to have been forgotten in the Fate and Effects discussion.

b. Page 13, paragraph 1 - Many marine oil spills have occurred

This paragraph discusses oil spills as if the Exxon Valdez was the first occurrence. During the Second World War many tankers and fuel carrying ships were sunk along the East and West Coasts of the United States. We think of these shorelines as pristine today. Yet those same shorelines were contacted by released oil. Additionally, oil seeps exist in many places along the West Coast, for example, Coal Oil Point, California near Santa Barbara. Accordingly, we know the fate and effects of crude oil releases.

Comment: We do not need to rely on speculation.

c. Page 13, last paragraph, line 1 - Cold temperature stability of Hydrocarbons.

The report states "[i]n general petroleum hydrocarbons are more stable in cold climates than in warmer ones". (emphasis added) No support for this statement is offered for the Prince William Sound. The severity of the storms and, in particular, the storm immediately following the oil release indicates a substantial lack of stability of hydrocarbons in the cold climate because of the violent wave action and the high wind speeds which promote evaporation.

Comment: The statement contained in the report appears designed to place the worst possible light on the conditions surrounding the spill.

d. Page 16, paragraph 1, line 7 - The trustee forgets the EIS.

The report at this point discusses exposure of archaeological sites, wilderness areas, National Forests and National Parks to oil spills. This is true. However, this fact was included in the Environmental Impact Statement which State and local government personnel reviewed and accepted. Additionally, Federal, State and public personnel knew the oil would leave Alaska via tankers from Valdez. It is politically expedient but naive to believe there would never be a tanker accident. The tanker accidents on French and American shores, plus the spill in the Strait of Magellan brought possible spills to minds of the public, Federal and State personnel. No one acted before the Exxon Valdez spill. However, many bureaucrats and "public interest groups" reacted violently after the Prince William Sound spill. None of the bureaucrats or "public interest groups" said anything good about the thousands of successful trips made into and out of the loading docks at Valdez.

Comment: The exposure was known, the State prospered financially as never before. In effect, the state accepted the risk for the income.

e. **Page 18, paragraph 4, line 7 - The trustee appears reluctant to follow the regulations.**

The trustees state they "have not decided whether or to what extent, to utilize [type B full-field assessments] ...regulations in conducting the assessment". In effect, the trustees do not feel obligated to follow the law [43 CFR Part II].

f. **Page 20, paragraph 4, line 3 - The trustee proposes a major Federal Act without an EIS**

The study contemplates determining "actual presence of petroleum residues...in tissues of resource organisms". In other words the proposed Natural Resource Damage Assessment Strategy will adversely impact the environment by killing marine organisms. Accordingly, this Federal action must be sanctioned under the National Environmental Protection Act [NEPA] by preparing an Environmental Impact Statement. The magnitude of the fish, animal, bird and organism kills proposed in the name of science can be recognized by reviewing the proposed studies. There are 64 studies proposed costing $35,420,900. The majority of the studies include robbing some critter of its life in the name of science. Such a large Federal undertaking must include an Environmental Impact Statement!

Comment: The magnitude of marine organisms kills mandates preparation of an EIS.

g. **Page 24, paragraph 5, line 6 - Authors show bias**

The bias of the authors of the report is stated clearly by saying "[t]he purpose of the studies are to establish that injury has occurred..." (emphasis added). There appears little consideration that injury has not occurred everywhere.

Comment: The conclusions to be drawn from the assessments are already "set in concrete".

8. Studies

a. **Page 36, paragraph 1, line 4 - Air modelling is not accurate**

The air studies contemplate use of air models. Air dispersion are known not to be accurate. In fact EPA uses air dispersion models to provide worst case results. The

use of know inaccurate models for the instant assessment makes a mockery of the Quality Assurance/Quality Control [Appendix A] praised so highly throughout the report.

Comment: In effect, relying on inaccurate models converts a scientific assessment into a revenue generating project.

b. Page 37, last paragraph, line 3 - Oil spill trajectory models are not accurate

The studies contemplate use of oil spill models. Experience teaches us oil spill models are inaccurate. We use them to guess where the oil will go. However, if a spill occurs, the only reliable method of finding the oil is to ride a helicopter over the spill and establish by observation where the oil goes. Winds and currents are used in developing the models. Winds and currents are not constant in direction, duration and speed. Accordingly, any steady state conditions assumed for modeling results is a grossly inaccurate output.

Comment: Use of models known not to be accurate deny the damage assessment technical validity.

c. Page 42, paragraph 2, line 1 - Alaska Water Quality Criteria is not technically defensible.

The report cites the State of Alaska water quality criteria of 10 ug/liter. Both the State and industry know this ridiculous low value was developed on the basis of assuming chronic health criteria is 1 hundredth of the acute value. The rule of thumb was superseded in 1980 by a rational method of establishing the water quality criteria. Alaska has been formally requested to adopt the new method and resulting criteria values.

Comment" The State has not acted even though they know the present water quality criteria of 10 ug/liter is wrong and by Alaska law should be discarded.

d. Page 46, paragraph 2, line 3 - Air modelling is not accurate.

The report contemplates the use of modelling volatile organic compounds. Modelling is known to be not accurate. The typical error is 250 percent on the high side.

Comment: Accordingly, the use of models to assess damages or penalties on the basis of results recognized to be in error transforms the instant assessment into a revenue generating exercise devoid of scientific justification.

e. Page 48, paragraph 1, line 1 - Trustees claim oil discharged into areas outside of Prince William Sound.

Again, the authors reveal a lack of accuracy in their reporting. The report implies the Exxon Valdez discharged "crude oil" into fisheries at Cordova, Homer, Seward, Valdez, Whittier, Kodiak, and Sandpoint. In reality, the oil was released into Prince William Sound.

Comment: The technical honesty of the instant report does not match the technical honesty implied by the authors.

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Curriculum Vitae

G.H. Holliday

Dr. Holliday holds four engineering degrees including a Ph.D. in Civil Engineering. He worked for Shell Oil Company for 37 years as a Engineer, Drilling Foreman, Production Foreman and Production Superintendent. The last 16 years with Shell were as an Environmental Engineer in E&P. Dr. Holliday retired from Shell in 1986 and formed Holliday Environmental Services, Inc., a full line Environmental Engineering Consulting firm working exclusively for industry.

In total Dr. Holliday has performed more than 500 environmental compliance reviews of E&P facilities, both onshore and offshore. In 1980-81 Dr. Holliday was Distinguished Lecturer on Environmental Conservation for Society of Petroleum Engineers. Also, he is an invited participate at the SPE Forum on Environmental Engineering. Further, he has presented papers or prepared comments at Environmental Conferences such as the Oklahoma University Environmental and Ground Water Institute, and Underground Injection Practices Council. For the last two years he has been on the faculty of the Executive Enterprises E&P Environmental Symposium.

Currently, Dr. Holliday is the Texas State Chairman of the American Academy of Environmental Engineers, a dedicated group of professional engineers. Also, he consults to the Independent Petroleum Producers Association on environmental and occupational safety and health agency issues.

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06

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DON GILMAN
MAYOR

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EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL
ADMINISTRATIVE RECORD

September 13, 1989

Trustee Council
P.O. Box 20792
Juneau, Alaska 99802

Dear Sirs,

The Kenai Peninsula Borough has reviewed the State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill, August 1989, Public Review Draft. Our comments are outlined below.

Comments Regarding the Introduction of the Assessment Plan

One year is not sufficient to fully assess the damage to natural resources since impacts to fish and other resources will not be evident for three or more years. For example, the plan states that the damage to Pacific herring in Prince William Sound will not be known for at least three years.

Com.	Topic	Issue	Sug.	Sort
1	4	0201		1

The responsible party's involvement in the assessment should be limited to providing financial assistance to the Trustee to assure the objectivity of the assessment.

2 C 0207

The chronology of the spill (page 6 to 11) is oriented toward Prince William Sound which lessens the importance of events that occurred in the Gulf of Alaska and Cook Inlet. More emphasis should be placed on the events in the Gulf and Cook Inlet such as the closure of much of the fishing season.

3 3 0100 1

Figure 4 should be updated in the final assessment plan to accurately represent the full extent of the movement of oil. Studies should include all areas impacted by the spill.

4 3 0100 1

The transport and fate of the oil in Cook Inlet is not discussed. There are indications that debris from the spill will accumulate on the west side of Cook Inlet. This should be addressed.

5 3 0100 1

The discussion of impacts to sea mammals and birds impacted in the Gulf of Alaska and Cook Inlet should be discussed in more detail.

6 3 0100 1

7 3 0100 1

Comments Regarding the Injury Determination/Quantification Studies

The areas encompassed by the three geographic regions established for the Coastal Habitat Injury Assessment, (PWS, Cook Inlet and the Kenai Peninsula, and Kodiak and the Alaska Peninsula), are unclear. It is uncertain which of these areas include the west side of Cook Inlet. A figure showing the regions would be helpful.

Com.	Topic	Issue	Sug.	Sort
8	3	0100		2

It is unclear if the Coastal Habitat Injury Assessment will include Upper Cook Inlet or the west side of Cook Inlet. Both of these areas were impacted by the Valdez Exxon oil spill and should be included in the assessment.

Com.	Topic	Issue	Sug.	Sort
9	3	1110		2

The Petroleum Hydrocarbon-Induced Injury to Subtidal Marine Sediment Resources Study (Air/Water Study Number 2) should include sites within Cook Inlet especially the west side of Cook Inlet.

Com.	Topic	Issue	Sug.	Sort
10	3	1220		1

Comments regarding the Fish/Shellfish Assessment are listed in the table below.

Study No.	Comments
6	This study should include Upper and Lower Cook Inlet.
7	This study should include Upper Cook Inlet
8	The areas to be studied are unclear.
9	Cook Inlet and the west side of Cook Inlet should be included in this study.
12	Kamishak Bay and the lower Kenai Peninsula contain herring fisheries that may have been impacted by the oil spill. These areas should be included in the study.
21	Clams are present in Kachemak Bay and the west side of Cook Inlet. These areas should be included in the study.
23	This study should include the Kenai Peninsula and Cook Inlet.

Com.	Topic	Issue	Sug.	Sort
11	3	1360		1
12	3	1370		1
13	3	1380		1
14	3	1390		1
15	3	1420		1
16	3	1510		1
17	3	1530		1

Generally, this assessment is oriented to Prince William Sound (PWS). Although the PWS was severally impacted, the Gulf of Alaska and Cook Inlet are equally important to the State of Alaska and were also impacted by the spill. These areas should be given equal attention during the assessment process.

This assessment plan was written prior to the full impact of the oil spill. The west side of Cook Inlet and Upper Cook Inlet are largely ignored by the assessment plan. The Trustees should re-evaluate the areas to be assessed by the proposed studies with consideration to the entire area affected by the oil spill.

Con.	Tom	Census	Dup.	Sort
18	3	0100		2

The Kenai Peninsula Borough would like to be informed on the progress and results of all studies taking place within the Gulf of Alaska and Cook Inlet.

Con.	Tom	Census	Dup.	Sort
19	6	0100		1

Sincerely,

KENAI PENINSULA BOROUGH

Alice Bullington
Environmental Technician

AB/nj

FRIENDS OF THE SEA OTTER

13

P.O. BOX 221220, CARMEL, CALIFORNIA 93922

1

Trustee Council
P.O. Box 20792
Juneau, AK 99802

September 21, 1989

Dear Trustee Council,

We have reviewed the Public Review Draft of the "State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill, August 1989", and our comments on this document follow. We are a non-profit organization representing over 5000 members concerned about the plight of the sea otter and its habitat.

Com.	Topic	Issue	Sug.	Sort
1	4	0201		1

Of greatest concern to us is the Plan's deadline of February 28, 1990. The Note between p. 28 and p. 29 indicates that funding for all field work and analysis activities through Feb. 28, 1990 is included in the Plan. The implication is that all field work and analysis will cease as of that date unless the Trustees have specifically approved continuation of some studies. Since the oil spill occurred on March 24, 1989, even studies that began as early as the day of the spill would not be "one-year" studies, as the Note suggests they would be. Many, if not most, of the studies described in the Damage Assessment Plan began long after the date of the spill, and some studies have still not been started (e.g. the radio tracking portion of Marine Mammals Study #6). How will studies which continue beyond Feb. 28, 1990 be funded? To achieve the goal of "determin[ing] injury to natural resources" as a result of the spill, studies must continue for years. For instance, if hydrocarbons accumulate in tissues of clams which are ingested by sea otters, there may be a slow accumulation of hydrocarbons in sea otter tissues which may eventually affect reproduction and survival. The Damage Assessment Plan as presented may be sufficient to identify initial, direct damages but it certainly does not address long-term chronic damages, given the time frame allotted. We would like to see a clarification of how vital long-term studies will be handled, for Exxon ultimately should be responsible for these studies, as well. Additionally, please provide us with a list of those studies which you have decided should be funded beyond the Feb. 1990 deadline.

Com.	Topic	Issue	Sug.	Sort
2	0	2300		2

Com.	Topic	Issue	Sug.	Sort
3	6	0100		2

Com.	Topic	Issue	Sug.	Sort
4	6	0100		2

On p. 18 of the Plan, you say that the Trustees are considering having the "responsible parties" participate in the damage assessment. We feel that it is completely inappropriate for the responsible parties to play a role in determining the degree of damage they have caused. Clearly, the responsible parties are biased and predisposed to find as little damage as possible. Damage assessment should be conducted only by independent parties.

Com.	Topic	Issue	Sug.	Sort
5	2	0201		2

Our review of the Plan has focused on all studies that relate

FRIENDS OF THE SEA OTTER

P.O. BOX 221220, CARMEL, CALIFORNIA 93922

directly or indirectly to sea otters. First, the estimate of the number of otters affected by the oil spill does not agree with the population estimates given in the permit application (PRT-740507) submitted by Dr. Tony DeGange of the U.S. Fish & Wildlife Service (USFWS) for studying otters affected by the spill. Dr. DeGange states that there are 7-8000 otters inhabiting Prince William Sound, more than 3000 along the Kenai Peninsula and over 4000 at Kodiak Island. Although Dr. DeGange does not specify how many otters in each population may have been affected by the oil spill, it seems likely that the total affected exceeds the number indicated on p. 14 of the Plan (5000 is implied in the Plan). The fact that 1010 dead otters had been retrieved by mid-Sept. 1989 alone suggests that many thousands of otters probably were influenced by the spill.

Com.	Topic	Issue	Sug.	Sort
6	5	1660		2

We have been supportive of the research on sea otters proposed in Marine Mammals Studies #6 and #7. We are aware of the objectives and methods of these studies, but we have not seen formal proposals for either of them. We, hereby, request copies of the proposals for these two studies.

Com.	Topic	Issue	Sug.	Sort
7	6	1660		2

Marine Mammals Study #6 has as its first objective to "determine the magnitude of injury to sea otter populations". How is injury defined? Injury should include mortality (both direct and indirect), behavioral disruption and decreased reproductive success. In addition to injuries caused by the oil, injuries caused by the cleanup effort also should be considered. Marine Mammals Study #6 is associated with Economic Uses Studies #5 and #7; if subsistence use of sea otters was affected by the spill, Economic Uses Study #6 also should be considered. The numbers of free-ranging otters to be implanted with radio transmitters in Marine Mammals Study #6 is not consistent with the number indicated in the permit application (PRT-740507) submitted by Dr. Tony DeGange of the U.S. Fish & Wildlife Service (USFWS) for this work. Two critical aspects of this important research- monitoring food habits of otters in oiled and unoiled areas and determining the cause of death for otters that die- can only be answered if there is very frequent monitoring of otters from a boat or from land. As we have indicated in letters and phone calls to the USFWS, the level of monitoring of implanted otters needs to be increased to 2-3 times per week instead of the once per two weeks currently established.

Com.	Topic	Issue	Sug.	Sort
8	3	1660		2

Com.	Topic	Issue	Sug.	Sort
9	3	1660		2

Com.	Topic	Issue	Sug.	Sort
10	5	1660		2

Com.	Topic	Issue	Sug.	Sort
11	3	1660		2

We have supported Marine Mammals Study #7 and urge that, as with Study #6, the goal of visual contact with each instrumented otter be increased substantially. The validity of both of these studies rests heavily on the quality of the monitoring of otters tracked over the long-term. The numbers of rehabilitated otters

Com.	Topic	Issue	Sug.	Sort
12	3	1670		2

FRIENDS OF THE SEA OTTER

P.O. BOX 221220, CARMEL, CALIFORNIA 93922

fitted with flipper transmitters and surgically implanted (p. 127) is incorrect in the Plan: the correct numbers are seven and 45, respectively.

The two sea otter studies (Marine Mammals #6 and #7) should be listed as related studies under the following other studies, which investigate sea otter prey: Fish/Shellfish Studies #13, #14, #21, #22, and #26. USFWS should be included as a cooperating agency on all of these studies, as well. The effect of the oil spill on otter prey is crucial to determining the long-term effects of the spill on otters themselves. Results of all of these studies must be shared by the researchers involved to insure a complete ecosystem analysis of the spill's effects on otters and their prey.

Com.	Topic	Issue	Sug.	Sort
13	3	1660		2

The USFWS should be included as a cooperating agency in Restoration Study #1. For natural resources which cannot be restored (e.g. dead sea otters), an alternative recompense should be funding of long-term research to gain as much knowledge as possible about the injuries suffered by otter populations and about their natural recovery process. Based on other major oil spills in which oil has lingered in the environment for a decade or longer, research funds should be committed for a minimum of ten years to study the effects of the oil spill on Alaska sea otter populations. Studying the impact of the spill over the long-term on non-restorable resources must be treated equally in terms of funding with restoration of restorable resources.

Com.	Topic	Issue	Sug.	Sort
14	5	2110		2

Com.	Topic	Issue	Sug.	Sort
15	4	0240		2

The economic valuation of damages is a highly significant aspect of the Plan, and we find the information provided about the Economic Uses Studies insufficient for us to judge the validity of your approach. Economic Uses Studies #5 and #7 and possibly #6 all relate to sea otters, and we request copies of the proposals describing these studies. We would like to have the opportunity to comment on the specifics of these studies. We applaud the apparent intent behind the "Study of Loss of Intrinsic Values due to the Exxon Valdez Oil Spill" (Economic Uses Study #7). The worldwide outpouring of anger and sadness over the oil spill was certainly based on the intrinsic value which people give to pristine wilderness areas replete with wildlife. It is imperative that surveys of intrinsic value be distributed to people throughout the entire United States (and perhaps in foreign countries, as well), because many of us "outsiders", as those who live outside Alaska are known, put a very high value on simply knowing that untouched wilderness areas and wild animal populations exist.

Com.	Topic	Issue	Sug.	Sort
16	2	0140		2

Com.	Topic	Issue	Sug.	Sort
17	6	0100		1

Com.	Topic	Issue	Sug.	Sort
18	1	2270		1

Com.	Topic	Issue	Sug.	Sort
19	6	2270		2

We would like to receive a copy of the draft restoration plan once it is released for public review. We look forward to the chance to comment on the restoration plan.

Com.	Topic	Issue	Sug.	Sort
20	6	0150		1

FRIENDS OF THE SEA OTTER

P.O. BOX 221220, CARMEL. CALIFORNIA 93922

In summary, our major points of concern are: 1) the inadequacy of the study period described in the Plan; 2) the level of monitoring of sea otters fitted with radio transmitters in the two sea otter studies; 3) the need for cooperative analysis of data gathered in the sea otter studies and in the studies of sea otter prey items; 4) the lack of details on specific methods for attributing economic value to natural resources lost or damaged by the spill (specifically, how will you determine how much is each sea otter worth?); 5) the lack of information on how recompense will be made for non-restorable resources that were lost as a result of the spill.

In this letter we have requested copies of: 1) the proposals describing the two sea otter studies; 2) the proposals describing Economic Uses Studies #5, #6 and #7; 3) the draft restoration plan; 4) a list of studies approved by the Trustees to continue beyond Feb. 1990. In addition, we request a clarification of your plans for long-term damage assessment (beyond Feb. 28, 1990).

Com.	Topic	Issue	Sug.	Sort
21	6	0100		1

We appreciate the opportunity to comment on the Damage Assessment Plan, and we look forward to hearing from you on the above matters.

Sincerely,

Susan H. Shane

Susan H. Shane, Ph.D.
Scientific Director

cc: Walt Stieglitz

Pacific Seabird Group

DEDICATED TO THE STUDY AND CONSERVATION OF PACIFIC SEABIRDS AND THEIR ENVIRONMENT

REVIEW OF:

STATE/FEDERAL
NATURAL RESOURCE DAMAGE ASSESSMENT PLAN
FOR THE EXXON VALDEZ OIL SPILL

D. MICHAEL FRY
CHAIRMAN, PACIFIC SEABIRD GROUP

DEPARTMENT OF AVIAN SCIENCES
UNIVERSITY OF CALIFORNIA
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(916) 752-1201

Sept 29, 1989

I. Introduction:

This review, because of the short time provided for public comment, represents the opinions of the Pacific Seabird Group (PSG) Chairman only, completed after limited informal discussions with several members of the PSG. The views here do not represent a formal poll of the PSG membership.

My expertise is in the area of avian physiology/toxicology with an emphasis in seabirds. This review and comment will be confined to studies relating to birds and residue analysis. I will address all my specific comments to Bird Studies 1-14, and Technical Services Studies 1 and 2. I additionally have some general comments on the overall Plan.

II. General Comments:

This document is outlined in a comprehensive way to individually address each component of the ecosystem which has been potentially impacted by the Exxon Valdez oil spill. The structure of the plan, with assessment of each component separately, but with coordination between studies and agencies, appears to be well designed and adequate for the task of environmental assessment. The Technical Services Studies are organized so as to demonstrate that the analytical components of the assessment plan are separate from, but coordinated with, the other aspects of the study.

Com.	Topic	Issue	Sug.	Sort
	3	2		2

1) The time frame of the Damage Assessment Plan is unrealistically short. It will be impossible to make a complete, or even an adequate, assessment of the damage within the time frame proposed. The designated time frame would require most field assessments to have been completed prior to November, when the weather will become quite inclement and preclude any further studies. For many organisms, especially birds, it will not be possible to monitor the extent of mortality until 1990. February 1990 is too early in the year to be able to make any assessment of the returning/rebounding populations.

The policy with regard to field studies should be changed so that all studies should be conducted at least through August 1990, unless there is complete and sufficient data for any individual study to justify earlier termination. Therefore, I disagree fundamentally with the position stated on Page i of the Executive Summary that: "no studies will be conducted after February 28, 1990 unless specifically approved by the Trustees...". I strongly feel that the position should be reversed; that is to say, all studies will continue unless individually terminated by the Trustees.

Com.	Topic	Issue	Sug.	Sort
2	3	2+3		2

2) All of the studies in this report are currently in progress at the time of public review. No information was supplied to reviewers to indicate whether each study was initiated as planned, whether the data planned for collection has been acquired, or whether the study can be completed within the time frame allotted. Much informal information has been "leaked" to this reviewer ndicating that many of the studies were begun months after their lanned initiation, and data was not collected for many parts of several studies. If this is the case, review of this plan cannot be realistic. Why was data of this nature specifically been withheld from independent reviewers?

Com.	Topic	Issue	Sug.	Sort
3		2+3		2

Damage Assessment Studies which exist, in part, only on paper parallel exactly the scenario of the Oil Spill Contingency Plan of Alyeska Pipeline Company. That plan was apparently constructed only to obtain Use Permits, and was not implemented in order to clean up oil. If segments of this Assessment Plan exist primarily on paper, but the studies are not fully conducted, the Trustees will be guilty of the same behavior as the Oil Industry. The time allocated for studies must be extended to allow for adequate completion.

Com.	Topic	Issue	Sug.	Sort
4	4	1+3		2

3) 1989 may have been an atypical, cold water, year in the Gulf of Alaska. If this is the case, an additional year should be studied to be able to make even a "first guess" at the true impact of the oil spill in the context of an atypical year. If the drastically reduced number of seabirds breeding on the Barren Islands, for example, was confounded by a bad year as well as by spilled oil, an accurate assessment should be made.

4) The budgets for analytical chemistry of hydrocarbon residues ppear to be inadequate for complete assessment of damage. Gas hromatography/mass spectroscopy (GC-MS) of aliphatic and

aromatic samples may cost as much as $800-1000 per sample to identify the hydrocarbon profile fingerprint of North Slope crude. Granted that many samples could be analyzed by GC-FID (flame ionization detector) and quantified at somewhat lower cost, but it may be important for purposes of litigation to be able to state the origin of the hydrocarbons in any given sample.

Com.	Topic	Issue	Sug.	Sort
5	1	2208		2

The number of samples to be analyzed for birds tissues alone is in excess of 300. A cursory review of the other studies indicates that several thousand samples must be analyzed for a reasonable damage assessment. $2,300,000 is the total combined budget for both NOAA and USFWS, including travel and equipment. The total budget should probably be increased by 50% to be adequate.

5) Economics Uses Study 7: Study of Loss of Intrinsic Values:

The wording in this study plan is very general, but the public is most concerned that the Trustees take seriously the Federal Appeals Court decision of July 13, 1989 on NRDA and the will of Congress with respect to environmental pollution. This is probably the most critical part of the Damage Assessment Plan for the credibility of the Trustees. The logic and calculations forming the basis of any monetary loss derived from seabirds and sea otters must be completely and publicly delineated. Public review and comment should be required and sought prior to any agreement with the responsible party concerning monetary evaluation of environmental damage.

Com.	Topic	Issue	Sug.	Sort
				2

III. SPECIFIC COMMENTS ON BIRD STUDIES:

STUDY 1: BEACHED BIRD SURVEYS:

This is a very important part of the total evaluation of oil impact to seabirds populations. The study appears well planned, although more beach surveys are required to adequately assess the number of beached birds. Part E cannot be completed from data of 1989.

A thorough examination of beaches was conducted by capture boats employed by the Otter and Birds centers. Although these boats were employed by Exxon for recovery of birds and otters, is that data being integrated with Agency data? To what extent is Exxon derived data proprietary? Did the USFWS make adequate surveys on its own?

Com.	Topic	Issue	Sug.	Sort
5	3	215		2

How will the Trustees estimate the proportion of carcasses to be found on beaches in Part C? Carter and Page (Point Reyes Bird Observatory) have some data, A. Burger in British Columbia has some, but no exhaustive studies have been conducted to evaluate floating times of many of the important species impacted in this spill.

Part D. I question how well the data of man-search-hours

can be integrated into data of former years relative to the intensive searches done in 1989.

This study is critical, and was begun early in the spill cleanup, so that data could be very good, but only if data from Exxon capture boats is included.

BIRD STUDY 2: MIGRATORY BIRD SURVEYS:

Part A must have already been done. Was it done adequately? The timing of aerial surveys is critical for estimates of migratory birds.

Part C cannot be determined without a 1990 census. Furthermore, reduced hatching or fledging success of breeding species will not be able to be evaluated until the 1989 age class returns to breeding colonies, or, for some species, can be evaluated in winter or spring surveys. Age at first breeding is delayed for many species of seabirds, confounding the estimates. Additionally, if a large proportion of adult birds were lost in 1989, the age at first breeding of returning juveniles will be lower than normal, further confounding the data.

Com.	Topic	Issue	Sug.	Sc
9	3	1230	/	2

BIRD STUDY 3: SEABIRD COLONY STUDIES:

Part A cannot be completed without at least a 1990 survey. he aberrant nature of the 1989 breeding year is important. Was the year equally atypical throughout the oiled and unoiled areas? Did unoiled areas serve as adequate controls? Answers to both of these questions cannot in themselves be made without a 1990 census.

Com.	Topic	Issue	Sug.	Sort
9	3	1230		2

Using data from Study 14 to predict sensitivity of birds to oil is not realistic. The experimental portion of Study 14 is not a good study.

The methods and analyses of this study would be adequate if a second year were included in the plan.

BIRD STUDY 4: BALD EAGLES:

This is designed as a complete, well organized study, capable of providing sound data to assess oil spill effects. If executed it will be the best study of the group.

Part A plans to determine a RATE of change of the population and to determine the effect of the oil spill on that rate. If a rate is not already known from historical data independent of the oil spill, the effect of oil on the population change cannot be made.

Part B could have been done with some accuracy. Was it? Was Exxon Eagle Team data integrated with USFWS data? Is Exxon data available?

Com.	Topic	Issue	Sug.	Sort
	3	750		2

Part F was conducted by Exxon Eagle Teams in Prince William Sound and coordinated by USFWS. Is the Exxon data available?

Were 30 adult and 30 fledgling eagles fitted with transmitters? If not, a 1990 survey will have to be conducted to provide alternate data on winter survival.

BIRD STUDY 5: PEREGRINE ASSESSMENTS:

This is also a well planned study, but preliminary data would seem to indicate that very few Peregrines were present in PWS in 1989, preventing completion of parts of this study. Part A could have been done, but Parts B and C could not have been completed, because no Peregrines occupied breeding sites in PWS in 1989.

Com.	Topic	Issue	Sug.	Sort
	5	17		2

A survey will have to be done in 1990 to determine whether more than two Peregrines still exist in PWS.

BIRD STUDY 6: MARBLED MURRELETS:

Marbled Murrelets are a good choice for assessment. uveniles can be counted on the water after fledging, and potentially present a good index of local conditions with respect to alcid breeding and survival. The species may not be indicative of other alcid species, but is important in its own right. Are Kittlitz's Murrelets included in this study?

Com.	Topic	Issue	Sug.	Sort
12	3	7		2

Part A: The patchiness of the Marbled Murrelet population is important to factor into this study. Does good pre-spill data exist for western PWS?

Collection of breeding Marbled Murrelets for contaminant analysis could provide useful data, although most oiled Murrelets would die. Many did this year. Externally oiled murrelets probably would not have bred in 1989. I think it would have been unlikely that birds could have been eating contaminated prey without becoming externally oiled, but data would be useful.

BIRD STUDY 7: FORK-TAILED STORM PETRELS:

The study is well planned and designed. Storm-petrels are a good indicator species, because they can be caught in their burrows and stomach contents sampled without injuring the adults or chicks (if chicks are hand fed to compensate for the loss of food taken from adults). However, according to my informal sources, this study was not conducted as presented. No visits to

the island were made during early incubation.

Com.	Topic	Issue	Sug.	Sort
	—			2

If 1989 was an aberrant year, this study could not provide onclusive data on oil impacts on the population. The population ust be assessed in 1990 against control sites.

Pristane is incorrectly spelled to make it a much cleaner compound.

BIRD STUDY 8: BLACK-LEGGED KITTIWAKES:

Com.	Topic	Issue	Sug.	Sort
		770		2

The study is well designed, and would provide much data on the effects of oil on these birds. The number of censuses are probably adequate to provide good data. Visual examination of birds is possible because they are white. Only their feet and beaks could not be assessed. The program is ambitious; was it conducted as presented?

BIRD STUDY 9: PIGEON GUILLEMOTS:

Com.	Topic	Issue	Sug.	Sort
15	1	770		2

Guillemots are a good study species, because they are burrow nesters and accessible during the breeding season. They do not panic from cliffs as murres and cormorants do. Birds observed from a distance, however, will be very difficult to assess for small amounts of external oil, because their plumage is black. ates of chick feeding can be assessed, and prey type can be dentified in many colonies, because the adults like to show off their catches.

Guillemots would be good indicators of other alcid genera, but only to the extent that other species are breeding in the same areas. Puffins and Murres breed in dense colonies in other areas, and could not be "studied by proxy" by guillemots at these colonies.

In general, I believe guillemots are a good species to monitor for evidence of local oil conditions.

BIRD STUDY 10: GLAUCOUS-WINGED GULLS:

Com.	Topic	Issue	Sug.	Sort
16	3	770		2

This study will probably not provide a good assessment of the impact of oil on Glaucous-winged Gulls. I believe Egg island is too far from the major impacts of oil to provide a good study. The few adult gulls which venture to Green I., Knight, or the Naked Island Group to forage will probably not be a representative proportion of the breeding population. Most breeding gulls would stay nearer to the colony than western PWS. Breeding gulls during the breeding season also do not scavenge to the same extent as during the rest of the year. Immature gulls, however, do not remain in the vicinity of the colony during the reeding season, and they do scavenge. Therefore, most of the

gulls at risk would be immature birds not assessed in this study. I would predict that when the data of oiled gulls is examined, it will be found that most oiled gulls were immature.

BIRD STUDY 11: SEA DUCKS:

This study, because it concerns wintering birds, is one of the few with good potential to be concluded successfully this year. The study is well designed, and apparently can rely somewhat on samples already collected for its initial data base (food habits from stored stomach content samples). If field work can be conducted throughout the winter, time is ample for collections to be made for subsequent analysis. Hydrocarbon analysis, however, will require more time than the February deadline for completion. This study might be completed by April or May. Analysis of duck tissue samples this winter will provide good data on risk of contaminants to hunters, and will provide data on mollusks, especially mussels. The budget might be adequate.

Com.	Topic	Issue	Sug.	Sort
17	3	[illegible]		2

BIRD STUDY 12: SHOREBIRDS:

This is a well designed study with good potential for providing data on the effects of oil on shorebirds.

I doubt that an adequate number of surveys were conducted in PWS and other staging areas during the spring of 1989 to be able o have good data for Parts A, B, and C. Part D probably could ave been completed. Parts F, and G could have been done.

Com.	Topic	Issue	Sug.	Sort
18	3	[illegible]		2

BIRD STUDY 13: PASSERINES:

This study would also have provided much information, but informed sources indicate that it was not conducted, or at best was conducted incidental to other work being done in affected areas.

If samples were collected, they will provide valuable data on secondary contamination by oil, both from histopathology and residue analysis.

Com.	Topic	Issue	Sug.	Sort
[illegible]		[illegible]		[illegible]

BIRD STUDY 14: OIL EFFECTS, EXPERIMENTAL:

This study will be useful from the review of literature only. It is completely unrealistic to conduct experimental studies on oiling of raptors, waterfowl or seabirds for the budget proposed. This study is undesigned, not appropriate, and should not be conducted.

The $10,000 budgeted for this study should be put into a literature review and synthesis, although the budget is too low for an adequate literature review.

Com.	Topic	Issue	Sug.	Sort
20	3	[illegible]		[illegible]

TECHNICAL SERVICES:

STUDY 1: HYDROCARBON ANALYTICAL SUPPORT:

Com.	Topic	Issue	Sug.	Sort
6	3	5[illegible]0		2

This study plan appears adequate and sufficient for the task, with the probable difficulty that the budget is too low for the ambitious amount of work proposed. I feel the design, QA/QC procedures, and coordination are quite good. The analytical chemistry and identified compounds to be searched are adequate to identify oil and its toxicity, but probably not adequate to distinguish North Slope crude from natural seeps in the Gulf of Alaska or Cook inlet oil spilled from platforms.

STUDY 2: HISTOPATHOLOGY:

Com.	Topic	Issue	Sug.	Sort
22	1	2220		2

This is a straight-forward study of the effects of oil on exposed animals with very good potential for excellent results. I hope the USFWS staff at the Wildlife Health Laboratory will examine frozen tissues of oiled birds collected early in the spill when no Agency personnel were collecting samples. The budget should be adequate for a good overview of the problem.

ADLER, JAMESON & CLARAVAL
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October 30, 1989

Trustee Council
P.O. Box 20792
Juneau, Alaska 99802

Re: Comments on Draft Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill

Dear Ladies and Gentlemen:

These comments on the draft assessment plan are filed in behalf of the Alaska Sportfishing Association and others who have filed a class action in behalf of those who recreationally use the area and resources affected by the Exxon Valdez oil spill. That class, referred to as the "Use and Enjoyment Class" in the litigation, seeks creation of an environmental restoration and mitigation fund and does so under both damage and injunctive theories. It does not seek individual recovery for class members. The recreational uses include not only sport fishing, which is a common activity that overlaps many of the recreational uses, but also includes sea kayaking, sailing, motor boating, camping, wildlife viewing, hunting, and similar consumptive and nonconsumptive uses of the geophysical and biological resources impacted by the spill. Therefore, these comments address many of the resources that ar of importance directly or indirectly to those who use and enjoy Prince William Sound and other affected areas.

The Use and Enjoyment Class adopts the comments of the National Wildlife Federation and Wildlife Federation of Alaska, except as added to below.

I. GENERAL COMMENTS

A. The Cut-Off Date

The most glaring inadequacy in the plan is the cut-off of all studies in February 1990 unless further work is authorized. Many of the studies require longer periods of

1 4 0201 2

assessment in order to determine injury and assess damages. Therefore, the plan risks greatly underestimating the actual injuries and damages.

B. Absence of Any Damage Assessment based on Restoration

The plan assesses damages only through assessing the loss of use values and non-use values. This is an incomplete measure of damages and is legally insufficient.

The fundamental objective of the assessment process under CERCLA and the Clean Water Act is restore, replace and acquire the equivalent of the injured resources, both geophysical and biological. The draft plan fails to serve this objective in that it neglects any assessment of damages based on the costs of restoration, replacement and acquisition of equivalent resources, habitats or lands. Instead, the plan only refers to development of a restoration plan and fails to articulate whether costs of restoring, replacing or acquiring will be part of the measure of damages as required.

Com.	Topic	Issue	Sug.	Sort
2	3	0151		2

In Ohio v. Department of the Interior, No. 86-1529 (D.C. Cir., July 14, 1989), the court held that restoration cost is the basic measure of damages plus lost use values. Ohio at 45. The court specifically rejected Interior's regulation requiring that damages be the "lesser of" restoration costs or lost use values. Ohio, at 55.

Nevertheless, the assessment plan focuses exclusively on lost use values as the measure of damages and thus effectively still retains a "lesser of" approach. Lost use is not an inappropriate element; it is simply an incomplete measure. As the sole source of measurement of damage, it does not comply with the Ohio decision.

Therefore, the plan would benefit from an additional study that measures damages in terms of restoration costs, so that total damages would be restoration cost (meaning restoration, replacement and acquisition of alternative habitats) plus lost use values.

Com.	Topic	Issue	Sug.	Sort
19	3	2295		2

The plan says only that a restoration plan will be developed, including cost estimates for restoration projects. This is not the same as a damages assessment based on restoration.

We realize that restoration in a narrow sense may not be feasible for many of the biological resources injured.

Therefore, we urge the trustees to look broadly at acquisition of replacement habitats and resources that bear some relationship to the injuries suffered by the biological resources, the geophysical resources, the services they provide and use and non-use values they provide.

The Use and Enjoyment Class urges that the trustees immediately initiate such a plan and the assessment of damages based on restoration, replacement and acquisition in addition to damages based on lost use and non-use values.

C. Lack of Detail and Public Comment

Most of the study descriptions are so lacking in detail that they frustrate public comment about the design of the studies. The draft plan fails to identify studies already underway, sampling protocols, data collected. Therefore, the Use and Enjoyment Class does not waive any right to make additional or contradictory comments at a later time when more details become available. In addition, we request that the trustees establish a more open process to facilitate further comment throughout the assessment process.

3 3 0102 2

D. Exxon should not participate in the damage assessment.

The plan says that the trustees have not decided whether potentially responsible parties, Exxon and other defendants, should be allowed to participate in the damage assessment. The Clean Water Act and CERCLA both require the trustees to assess damages. 33 U.S.C. 1321(f)(4)-(5); 42 U.S.C. 9607(f). The responsible parties may act only in a ministerial role. Ohio at 73.

4 5 0207 2

E. A regulatory discount rate appears inappropriate in this instance.

The recreational demand for areas affected by this spill has been increasing rapidly in recent years, as ADF&G use figures indicate. Therefore, any measure of damages must take into account the projected increases in demand. If projected increases cannot be estimated without uncertainty, then it only makes sense to adjust or eliminate the assumed discount rate, as permitted by the Ohio, at 69, in its discussion of the authority, 43 C.F.R. 11.84, of the trustees to adjust for uncertainty in assumptions.

5 3 0142 2

F. General Absence of Laboratory Modeling

Most of the biological studies are field surveys. Few laboratory studies are planned to simulate conditions in the field. Where the study design does not permit extensive field work or where only a few sights are used for field survey, we would urge that laboratory simulations be undertaken.

Com.	Topic	Issue	Sug.	Sort
19	3	0240		2

G. Inconsistency in the methods used to model amounts of oil over time.

The air/water studies have the goal of creating an integrated model over time of the fate of the oil, but it is not clear that the studies are consistent with each other in focusing in the parameters of quantity, volume, concentration, distribution, persistence, composition and time. For example, it is not clear that either Air/Water Study No. 2 or the Coastal Habitat Study address the quantity of oil and hydrocarbons that end up in the marine sediment or the intertidal zone, while Air/Water Study No. 1 address the quantity of floating oil. If an inconsistency of focus such as this occurs across these studies and across what should be common parameters, then it may make difficult the job of creating a total model. The Air/Water studies, and also the coastal habitat study should be re-examined to facilitate creating such a model.

Com.	Topic	Issue	Sug.	Sort
6	5	1200		2

H. Absence of Assessment of Damage to Recreation Industry and other businesses outside of the commercial fishing industry.

CERCLA requires that damages measured for purposes of the Clean Water Act and CERCLA must take into account all uses of the injured resource. 42 U.S.C. 9651(c). The assessment plan totally neglects tourist industry uses of the resource. Taxidermists, charter boat operators, water and air taxi services, guides, lodges and similar businesses have suffered from the spill. These damages should be assessed, since they are use values just as much as commercial fishing, recreation and subsistence.

Com.	Topic	Issue	Sug.	Sort
7	3	0111		2

I. Budget for Economic Studies

The absence of a budget breakdown for the economic studies does not facilitate public comment. Among the economic studies, the contingency valuation studies, particularly Economic Uses Study No. 5 (recreation) and Economic Uses Study No. 7 (Intrinsic values) deserve substantial budgets to accomplish the complex survey work

Com.	Topic	Issue	Sug.	Sort
8	3	2200		2

needed. We expect that the budgets for those studies are substantial and that they will not be cut to facilitate studies that provide less prospect for recoveries that will serve the purposes of restoration, replacement and acquisition.
Nevertheless, we urge that all budgets be disclosed.

J. <u>Lack if Attention to Sublethal Effects</u>

Many of the biological studies ignore sublethal effects and focus exclusively on population surveys and causes of mortality. Throughout the biological studies we urge greater attention to sublethal effects, such as mutagenic, reproductive, predation effects arising from the spill.

Com. 9 3 0111 2

II. SPECIFIC COMMENTS

A. Coastal Habitat and Air/Water Studies

The plan would benefit from describing how these studies will be coordinated with the economic uses studies and the restoration plan. These studies obviously form a foundation for estimating long term biological impact. However, the plan should make clear that they also will relate geophysical impact to the economic uses studies -- i.e. that the mere fact of oiled shorelines, habitat aside, is an injury that should be measured in these studies and assessed as part of Economic Uses Study Nos. 5 (recreation) and 7 (intrinsic values). The trustees should be careful to include both biological and geophysical injury determined in these studies in the contingent valuation studies in order to avoid undervaluation.

Com. 10 3 1100 2

Similarly there is no mention in the restoration plan of how these studies will be used to support the restoration plan, including acquisition of habitat. That needs to be addressed.

Com. 11 3 2100 2

The coastal habitat study says it will address toxicity at several different trophic levels, but detail is lacking. Algae, phytoplankton, zooplankton, microbiota and other organisms at the bottom of the food web need to be addressed in these studies.

Com. 12 3 1100 2

B. Fish Studies

These studies are frequently lacking in attention to sublethal effects, such as genetic mutation, reproductive

Com. 13 3 1300 2

failure, behavioral abnormalities, disease, increased predation, deformities. See 43 C.F.R. 11.62. The studies also are limited to species for which there are human use values; they should be expanded to include non-use species in order to avoid underestimating the damage assessment in the intrinsic value study.

Many of these studies cannot be completed by the February 1990 deadline.

Fish Studies 1, 2, 7, 8 would benefit from laboratory control studies to support the impact on eggs and fry.

Fish Studies 3, 4 and 9 would benefit from control studies in simulated laboratory environments to control marine variables, such as natural predation and mortality at sea.

Fish Study 5 (Char and Trout) ignores sublethal effects. This study also seems to ignore the lack of control of exposure in the coastal waters thorough which juvenile and adult char and trout migrate. The study also suffers from few study areas, and would benefit from controlled laboratory simulations.

Fish Study 6 -- more detail should be given; other tissue samples in addition to stomach contents should be taken.

Fish Studies 7 and 8 -- laboratory control studies would benefits these studies, as in nos. 1 and 2.

Fish Study 11 -- Kelp growth should be measured, since there have been reports of reduced kelp growth in oiled areas.

Fish Study 17, 18, 19 -- We adopt NWF comments.

C. Marine Mammal Studies

Marine mammals are tremendously important to the recreationists of the affected areas, yet the plan gives them short shrift, lack of detail in the study designs and lack of budget. Sublethal effects need to be examined more fully. See NWF comments. More attention should be given to prey species. The cut-off date undermines the ability to assess long term effects.

USG
14 3 1600 2

D. Terrestrial Mammals

There is so little money in these studies, little effect will be detected.

Com.				
15	4	1700		1

E. Bird Studies

Again, these studies ignore sublethal effects. These studies focus mostly on immediate effects and reproductive success. Long term effects are neglected.

Bird Study 14 on migratory birds appears grossly underfunded for the work described.

Com.				
16	3	1800		2

In other respects we adopt NWF's comments.

F. Economic Uses Studies

Our focus here is chiefly on economic uses studies 5 (recreation) and 7 (intrinsic values), though a two other comments should be addressed.

Com.				
17	3	2200		2

First, these studies need to be supplemented with a study addressing the market impact the spill has had on tourist businesses and other business outside of the commercial fishing industry. (See General Comments.)

Second, creating bioeconomic models, as in Economic Uses Study No. 3, may be useful for other user classes than just commercial fishing.

Com.	Topic	Issue	Sug.	Sort
20	3	2250		2

Economic Uses Study No. 5 seems to have several problems. First, current users may have existence, option and bequest values in addition to consumer surplus values. Yet, this study focuses only on consumer surplus.

Second, the existence, option and bequest values of actual users may be substantially larger than those of nonusers. However, in ignoring existence, option and bequest values of users, this study effectively lumps those values for users in with the existence, option and bequest values of nonusers in Economic Uses Study No. 7, thereby losing track of these substantially larger values for the recreational use class and thereby underestimating the total value, regardless of whether that value is measured in study 5 or 7. The result is most likely to be an underestimate of damage in Economic Uses Study No. 5.

Com.	Topic	Issue	Sug.	Sort
21	3	2270		2

Third, in Economic Uses Study No. 5 there is no description of how a survey respondent is determined to be a

recreational user or not a recreational user -- i.e., is a respondent who recreated in the impacted area two years before the point of survey still a user? Those with the most diminished consumer surplus may be those who recreated previously and will never again go. How will they be surveyed? One method might be to rely partially on the names of respondents in the raw field creel survey and mail survey data for past years. Those records should be available for past years.

Sincerely,

ADLER, JAMESON & CLARAVAL
By: Geoffrey Y. Parker

See pg 2 for Comment 18
See p 4 for 19
p 7 for 20
p 7 for 21

06

KENAI PENINSULA BOROUGH
144 N. BINKLEY • SOLDOTNA, ALASKA 99669
PHONE (907) 262-4441

DON GILMAN
MAYOR

September 13, 1989

RECEIVED
JAN 1 1 1994
EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL
ADMINISTRATIVE RECORD

Trustee Council
P.O. Box 20792
Juneau, Alaska 99802

Dear Sirs,

The Kenai Peninsula Borough has reviewed the State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill, August 1989, Public Review Draft. Our comments are outlined below.

Comments Regarding the Introduction of the Assessment Plan

One year is not sufficient to fully assess the damage to natural resources since impacts to fish and other resources will not be evident for three or more years. For example, the plan states that the damage to Pacific herring in Prince William Sound will not be known for at least three years.

Com.	Topic	Issue	Sug.	Sort
1	4	0201		1

The responsible party's involvement in the assessment should be limited to providing financial assistance to the Trustee to assure the objectivity of the assessment.

Com.	Topic	Issue	Sug.	Sort
2	0	0207		1

The chronology of the spill (page 6 to 11) is oriented toward Prince William Sound which lessens the importance of events that occurred in the Gulf of Alaska and Cook Inlet. More emphasis should be placed on the events in the Gulf and Cook Inlet such as the closure of much of the fishing season.

Com.	Topic	Issue	Sug.	Sort
3	3	0100		1

Figure 4 should be updated in the final assessment plan to accurately represent the full extent of the movement of oil. Studies should include all areas impacted by the spill.

Com.	Topic	Issue	Sug.	Sort
4	3	0100		1

The transport and fate of the oil in Cook Inlet is not discussed. There are indications that debris from the spill will accumulate on the west side of Cook Inlet. This should be addressed.

Com.	Topic	Issue	Sug.	Sort
5	3	0100		1

The discussion of impacts to sea mammals and birds impacted in the Gulf of Alaska and Cook Inlet should be discussed in more detail.

Com.	Topic	Issue	Sug.	Sort
6	3	0100		1

Com.	Topic	Issue	Sug.	Sort
7	3	0100		1

Comments Regarding the Injury Determination/Quantification Studies

The areas encompassed by the three geographic regions established for the Coastal Habitat Injury Assessment, (PWS, Cook Inlet and the Kenai Peninsula, and Kodiak and the Alaska Peninsula), are unclear. It is uncertain which of these areas include the west side of Cook Inlet. A figure showing the regions would be helpful.

Com.	Topic	Issue	Sug.	Sort
8	3	0100		2

It is unclear if the Coastal Habitat Injury Assessment will include Upper Cook Inlet or the west side of Cook Inlet. Both of these areas were impacted by the Valdez Exxon oil spill and should be included in the assessment.

Com.	Topic	Issue	Sug.	Sort
9	3	1110		2

The Petroleum Hydrocarbon-Induced Injury to Subtidal Marine Sediment Resources Study (Air/Water Study Number 2) should include sites within Cook Inlet especially the west side of Cook Inlet.

Com.	Topic	Issue	Sug.	Sort
10	3	1220		1

Comments regarding the Fish/Shellfish Assessment are listed in the table below.

Study No.	Comments	Com.	Topic	Issue	Sug.	Sort
6	This study should include Upper and Lower Cook Inlet.	11	3	1360		1
7	This study should include Upper Cook Inlet	12	3	1370		1
8	The areas to be studied are unclear.	13	3	1380		1
9	Cook Inlet and the west side of Cook Inlet should be included in this study.	14	3	1390		1
12	Kamishak Bay and the lower Kenai Peninsula contain herring fisheries that may have been impacted by the oil spill. These areas should be included in the study.	15	3	1420		1
21	Clams are present in Kachemak Bay and the west side of Cook Inlet. These areas should be included in the study.	16	3	1510		1
23	This study should include the Kenai Peninsula and Cook Inlet.	17	3	1530		1

Generally, this assessment is oriented to Prince William Sound (PWS). Although the PWS was severally impacted, the Gulf of Alaska and Cook Inlet are equally important to the State of Alaska and were also impacted by the spill. These areas should be given equal attention during the assessment process.

Com.	Topic	Issue	Sug.	Sort
18	3	0100		2

This assessment plan was written prior to the full impact of the oil spill. The west side of Cook Inlet and Upper Cook Inlet are largely ignored by the assessment plan. The Trustees should re-evaluate the areas to be assessed by the proposed studies with consideration to the entire area affected by the oil spill.

The Kenai Peninsula Borough would like to be informed on the progress and results of all studies taking place within the Gulf of Alaska and Cook Inlet.

Com.	Topic	Issue	Sug.	Sort
19	6	0100		1

Sincerely,

KENAI PENINSULA BOROUGH

Alice Bullington
Environmental Technician

AB/nj

Prince William Sound Aquaculture Corporation

P.O. Box 1110
Cordova, Alaska 99574
Phone: (907) 424-7511
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A regional non-profit organization for the enhancement of salmon.

07

DuLac

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EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL
ADMINISTRATIVE RECORD

September 12, 1989

Trustee Council
P.O. Box 20792
Juneau, AK 99802

Dear Sirs:

The Damage Assessment Plan for the Exxon Valdez Oil Spill arrived at our office on August 25, 1989. I am supposing that most of the field work included in the Plan has been completed. Therefore, I am uncertain as to the value of my comments.

For the record;

1. Coastal Habitat Study Number 1: The oiling and persistence of oil on shorelines adjacent to pink and chum salmon known rearing locations should be considered as a factor which might drive fish away from those traditional areas. The result might be reduced early ocean survival.

Com.	Topic	Issue	Sug.	Sort
1	3	1110		2

2. Fish/Shellfish Study Number 3: Will the tag/recovery project be allowed to continue long enough to assess relative survivals of pink, chum, and coho salmon released from hatcheries in 1988, 1989, and 1990? This must be done.

Com.	Topic	Issue	Sug.	Sort
2	4	1330		2

3. Fish/Shellfish Study Number 4: This study should go farther than comparing presence and condition of rearing salmon in oiled and non-oiled areas. Based on available information, the early marine rearing locations of pink salmon fry at the Armin F. Koernig Hatchery is known. The description of these areas should enable researchers to find similar locations at other hatcheries and major spawning streams. The presence/absence of young salmon in these locations might help determine if young salmon have been forced out of traditional rearing areas in oiled locations.

   This study could also improve the description of preferred rearing conditions, for future forecasting studies.

Com.	Topic	Issue	Sug.	Sort
3	3	1340		2

Alternatives for restoration of lost use should not be confined to locations now producing fish. If restoration is in order, consideration should be given to the diversification of hatchery production to include early run stocks for release at as yet undetermined locations.

Com.	Topic	Issue	Sug.	Sort
4	4	0102		2

4. I believe that current and tide flow studies should have been included in this impact assessment plan. This information is available for coastal British Columbia, but yet the state and federal government choose to ignore the potential of this information in the well traveled, inside coastal waters of Alaska. Current and tidal direction and transport around and between islands and passages are needed to properly assess the actual distribution of oil from the Exxon Valdez spill, which in turn would provide a greater understanding of the actual volume of water which was subject to pollution. These data would also aid in the response to future spills.

5. In 1977, Ralph Pirtle published an Alaska Department of Fish and Game, Technical Data Report (number 35) titled "Historical Pink and Chum Salmon Estimated Spawning Escapements from Prince William Sound, 1960-1975." In that report, Ralph states that there are about 680 streams in Prince William Sound, and most are used to some extent by spawning salmon. The same report includes a sequential list of 871 designated salmon streams for Prince William Sound. He also stated that aerial surveys were conducted on only 200 of these streams annually, and 94 index streams were ground surveyed each year. Something seems wrong to me with interpreting and using data which is derived from a percentage of a percentage.

Com.	Topic	Issue	Sug.	Sort
5	2	0103		2

Fish/Shellfish Study Number 1 proposes to document the physical extent of oil distribution on intertidal spawning areas and to achieve four other objectives dealing with injury to salmon spawning areas, and therefore salmon, in Prince William Sound. The study proposes to do this by surveying "a statistically significant number of (tentatively 100)" of the 211 aerially surveyed index streams in the Sound.

Comment: It seems to me that this Study avoids the opportunity to improve the baseline information on the productivity of Prince William Sound salmon streams, along with lost opportunity to develop a stream catalog of this information. In my estimation, this oversight results in the continued underestimation of the value of Prince William Sound's salmon resource.

Com.	Topic	Issue	Sug.	Sort
6	03	1310		2

6. Economic studies: I question whether these studies will be conducted, since no lead agencies or budgets have been designated.

Com.	Topic	Issue	Sug.	Sort
7	4	2200		2

Why is the damage assessment restricted to natural resources? Family disruptions, shortages of food and supplies, increased business uncertainties, and unavailability of housing are but a few of the variables that should be factored into damage assessment calculations for the Prince William Sound area.

7. General Comments: By what method will the Trustee Council and Management Team periodically review each project to ensure that it is proceeding toward successful completion?

Com.	Topic	Issue	Sug.	Sort
8	3	0100		1

May I obtain a list of the principle people, by agency, who are working on each Prince William Sound fish study? I believe it is likely that some project leaders are assigned too much responsibility, to the extent where individual projects and staff/public interactions may be negatively impacted or unnecessarily restricted.

Com.	Topic	Issue	Sug.	Sort
9	6	0100		1

When will study results be released to the public? Will I be able to review and comment on the study results before reports are finalized?

Thank you for considering these comments.

Sincerely,

John McMullen
Special Projects Manager

DoLAC

08

Natural Resources Defense Council

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Washington, DC 20005
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EXXON VALDEZ OIL SPILL
TRUSTEE COUNCIL
ADMINISTRATIVE RECORD

September 14, 1989

Trustee Council
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Don W. Collinsworth
Commissioner
Alaska Department of Fish and Game
P.O. Box 3-2000
Juneau, Alaska 99802

re: Request for Extension of Time to Comment on State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill

Dear Trustee Council:

This letter is filed on behalf of the Natural Resources Defense Council, the National Audubon Society, Trustees for Alaska, the Sierra Club Legal Defense Fund, the Wilderness Society, Defenders of Wildlife, the Environmental Defense Fund, and the National Wildlife Federation. These groups represent a combined membership of millions of Americans who are concerned about the adequacy of the damage assessment and restoration plans for the Exxon Valdez oil spill.

We hereby request a three-week extension of the deadline for filing comments on the State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill (August 1989 Public Review Draft) ("Draft Plan"). Under this extension, comments would be received on or before October 23, 1989.[1]

Com.	Topic	Issue	Sug.	Sort
1	4	0204		1

[1] Three weeks from September 30, 1989 falls on a Saturday. October 23, 1989 is the next business day,

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Natural Resources Defense Council
212 Merchant St.
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808 533-1075

This extension is justified for a number of reasons. First, because the plan was printed and released in Juneau, and because the small initial supply that was shipped to Washington, D.C. was depleted within one day, it took as long as one week for many of our groups to obtain copies of the Draft Plan. In addition, we distributed copies of the plan to a number of additional reviewers around the country, many of whom did not receive their copies until as much as two weeks after the plan was released.

The Draft Plan covers a wide range of disciplines, and proposes a large number of studies that require detailed review by scientific and economic experts. In order to provide meaningful, constructive comments on the draft plan, we are working with experts all over the country. Coordinating these reviews and combining them into useful comments cannot be accomplished by the September 30, 1989 deadline.

In addition, all of the signatory groups are working together to review all key aspects of the Draft Plan in a coordinated fashion. This will avoid highly repetitive comments, and consequently facilitate the Council's review. Hopefully, this will make the comments more useful to the Council, and shorten the Council's response time.

It is not our intention to delay any studies or other activities that are essential to a complete and adequate damage assessment or restoration program. However, it is our understanding that any studies that need to be conducted now are ongoing, and that the requested three-week extension will not affect these or other important planned or ongoing activities.

Given the short time before the current public comment deadline; we ask that you respond to this request as soon as possible, and no later than Friday, September 22, 1989 (which is only one business week before the current deadline). In fact, we would appreciate your response by telephone as soon as it is available (Bob Adler - 202-783-7800; Erik Olson - 202-797-6887; or Sarah Chasis - 212-727-2700), in addition to formal written notice.

Thank you very much for considering this request.

Very truly yours,

Robert W. Adler

Robert W. Adler
Senior Attorney

08

List Attachments A & B of Sanders Comments in reference material

COMMENTS

OF

THE NATURAL RESOURCES DEFENSE COUNCIL, INC.

ON THE

STATE/FEDERAL NATURAL RESOURCE DAMAGE ASSESSMENT PLAN

FOR THE EXXON VALDEZ OIL SPILL

(PUBLIC REVIEW DRAFT, AUGUST 1989)

October 27, 1989

Sarah Chasis
Senior Attorney
NRDC Coastal Project

Robert W. Adler
Senior Attorney
NRDC Clean Water Project

Expert Comments By:

Anne McElroy, PhD
Patricia A. Lane, PhD
Howard L. Sanders, PhD
Michael Kavanaugh, PhD
Howard Liljestrand, PhD
D.K. Button, PhD
Steven Wright, PhD
Kim Hayes, PhD
Timothy Vogel, PhD

Legal Intern

John Smeltzer

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Comments of Dr. Howard L. Sanders
Comments of Dr. Michael Kavanaugh
Comments of Dr. Howard Liljestrand
Comments of Dr. D.K. Button
Comments of Drs. Steven Wright, Kim Hayes and Timothy Vogel

APPENDIX (Studies referred to in the comments of Dr. Patricia A. Lane)

Crowell, M.J. and P.A. Lane. The Effects of Crude Oil and the Dispersant COREXIT 9527 on the Vegetation of a Nova Scotia Saltmarsh: Impacts After Two Growing Seasons.

Lane, P.A., 1989. Environmental Effects Monitoring: Pitfalls and Possibilities in Relation to Offshore Oil Development.

Lane, P.A., 1989. Synopsis for Environmental Effects Monitoring: Pitfalls and Possibilities in Relation to Offshore Oil Development.

Lane, P.A., 1988. Reference Guide to Cumulative Effects Assessment in Canada, vol. I.

Lane, P.A., M.J. Crowell, D.G. Patriquin and I. Buist, 1987. Use of chemical dispersants in salt marshes. Environmental Studies Research Funds Report No. 070. Ottawa. 100 p.

Lane, P.A., 1985. Ecological Risk Analysis in Regard to Offshore Oil Development at Hibernia.

INTRODUCTION

The Natural Resources Defense Council, Inc. (NRDC) submits the following comments on the Public Review Draft of the State/Federal Natural Resource Damage Assessment Plan for the Exxon Valdez Oil Spill (August 1989) (hereafter "Draft Plan" or "Draft Assessment"). NRDC has more than 120,000 members and supporters nationwide many of whom use and enjoy areas affected by the Exxon Valdez oil spill.

The overriding concern of NRDC and its members is that the environment of Prince William Sound and other areas of Alaska affected by the spill be restored to the maximum extent possible to the highly pristine, productive state that existed before the accident, and that to the extent this is not possible, replacement habitat be acquired to compensate the American public for these losses. This goal requires an adequate damage assessment plan and restoration plan; yet neither are provided here. By arbitrarily limiting the assessment plan to one year of studies, and by otherwise limiting severely the scope of the assessment plan, the Trustees may seriously underestimate the nature and extent of damage caused by the spill. Moreover, there has been almost no serious planning on ways to restore the long-term productivity of the areas affected by the spill, or to acquire replacement habitats where full restoration is not possible.

Com.	Topic	Issue	Sug.	Sort
1	4	0201		2

NRDC appreciates this opportunity to comment on the draft plan. The opportunity provided, however, is only of extremely limited value. NRDC and other environmental groups have

distributed the plan to a large number of experts around the country qualified to comment on all aspects of the plan. The initial responses of those experts has been virtually unanimous: The Draft Plan is so vague that it is not amenable to serious review by outside experts. The Draft Plan omits important details on all of the proposed studies, making it difficult or impossible to comment intelligently on the merits of the studies.

Com.	Topic	Issue	Sug.	Sort
2	3	0102		2

NRDC's comments on the Draft Plan fall into two classes. Our initial comments address broad legal and policy concerns related to the Draft Assessment. In addition, we summarize some of the major points raised by our outside experts. Attached to these comments are specific critiques prepared by nine outside experts on particular aspects of the Draft Plan. Resumes are included for each of these experts. These critiques should not be considered an "appendix", but rather constitute the heart of NRDC's comments on the technical merits of the proposed assessment plan. In order to ensure that the scientists and economists conducting the studies have the benefit of these comments, we ask that all the technical critiques be circulated to each of them.

NRDC's experts focused on broad, ecosystem-wide studies proposed in the Draft Plan, such as the Coastal Resources and Air and Water Pollution Studies. Studies designed to evaluate the effects on individual species are evaluated as they relate to these broad concerns. Where we do not comment specifically on individual assessment proposals, this implies neither agreement

nor disagreement with the proposal. Other environmental groups are working with experts on other specific aspects of the Draft Plan (such as birds, marine mammals and terrestrial mammals).

I. THE ASSESSMENT LACKS ADEQUATE DETAIL TO ENABLE MEANINGFUL TECHNICAL REVIEW

All the technical reviewers that NRDC consulted stated that there was not enough detail provided in the draft plan to permit adequate peer review.[1] Dr. McElroy says that: "The level of detail in the study plan, methods and analyses given and budgets presented would be completely unacceptable in any kind of peer-reviewed grant or contract application." Dr. Lane states: "Although it is clear that many of the main environmental components have been identified for study, it is not so clear that the studies are designed well enough to provide the needed information to quantify damages rigorously. In particular, there is very little information given on sampling design and methods of data analysis and interpretation during the post-collection phase." Dr. Liljestrand noted that the level of detail provided in the Draft Plan would not suffice to pass scrutiny had this plan been submitted by a private party for government agency approval. Dr. Kavanaugh and our other experts reached the same conclusion with respect to other scientific and economic studies.

We appreciate the haste with which the study plan was put together and the tremendous pressures the Trustees and their

Com.	Topic	Issue	Sug.	Sort
3	4	0102		2

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1 Obviously more detailed information on most of these studies could have been provided since when the Draft Plan was made available most of the studies were already underway.

staffs were under. However, we believe it is in the Trustees' interests, and ultimately in the public's interest, to ensure the most rigorous and effective study regime is adopted, particularly in light of the scrutiny to which the results will be subject in any litigation that will eventually result. Thorough scientific and technical peer review of the study plan in advance is one of the best ways to ensure that the study results are sound and stand up in court.

Ironically, we understand that at the same time that comments on this extremely vague plan are due, far more detailed research proposals are being prepared for circulation to peer review scientists around the country. If true, in essence the public is being excluded from participation in the more important and meaningful opportunities to comment on the assessment.

To this end, we urge the Trustees to provide the opportunity for further peer and public review of the studies proposed to be performed this next spring and thereafter. We formally request that the following steps be taken to ensure proper public input to this process:

1. Copies of these comments, including the specific attached comments of outside experts, should be circulated to all government scientists and economists (including contractors) who are developing and conducting the actual studies;

2. Meetings should be scheduled to allow our outside experts an opportunity to discuss their concerns directly with

the government (or contractor) scientists and economists who are actually developing and conducting those studies;

3. Information on the results of studies to date and detailed proposals for additional research should be circulated to the experts who helped NRDC and other groups review the Draft Plan at the same time they are circulated to other outside experts;[2] and

4. As explained in detail below, the public should be given an opportunity to participate formally in future decisions to continue or discontinue damage assessment studies, and in the development of the restoration plan.

II. THE RESTRICTION OF ASSESSMENT STUDIES TO ONE YEAR IS ARBITRARY AND NOT IN ACCORDANCE WITH LAW.

A. The One-Year Limitation on Assessment Studies Is a Violation of the Trustees' Duty to Recover Restoration Costs

The federal and state trustees for natural resources affected by the Exxon Valdez oil spill are under an obligation to recover costs for the restoration of damaged natural resources in and around Prince William Sound. Section 311(f)(5) of the Clean Water Act provides that designated federal and state officials "shall act on behalf of the public as trustee of the natural resources to recover for the costs of replacing or restoring such resources." 33 U.S.C. §1321(f)(5) (emphasis added). Section 107(f)(1) of CERCLA states that sums recovered be used to

Com.	Topic	Issue	Sug.	Sort
4	4	0201		2

[2] In essence, we ask that our experts be incorporated in the scientific peer review process that the Trustees apparently are conducting anyway.

restore, replace or acquire the equivalent of the damaged resources. 42 U.S.C. §9607(f)(1). To recover such costs and restore the environment, the Trustees first must assess the full extent of injury. An underestimation of injury will lead to an underestimation of restoration or replacement costs, an inadequate recovery from Exxon, and an inadequate restoration of the environment.

The Trustees violate their statutory duties by arbitrarily restricting assessment studies to a period of less than one year. The Executive Summary states: "The damage assessment document is essentially a one-year plan. No further studies will be conducted after February 28, 1990, except those approved by the Trustees upon recommendation of the Trustee Council and scientific and legal review groups as being necessary to promote restoration and to support assessment of legally recoverable natural resource damages." (p. i). However, as the Draft Plan itself states the spill will have long-term effects not discernible within one year. The Draft Plan recognizes that "oil and its complex breakdown products are expected to linger in some areas for many years," (Draft Plan at 1), acknowledges the "possibility of delayed population effects in some species," id. at 15, and states with respect to at least one species that the "full effect of the spill may not become evident this year." Id. at 15.[3] As the comments of Drs. McElroy, Lane, Sanders,

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[3] Elsewhere, the Plan states: "Oil and its complex breakdown products will persist for a long time; the nature and degree of (continued...)

Kavanaugh, Vogel, Wright, Hayes and Button (attached) attest, a responsible damage assessment cannot be done in one year.

Due to the magnitude of the Valdez spill, the unique properties of the affected ecosystem and the virtually certain possibility of long-term and delayed biological injury, a study of at least several years duration is necessary to adequately ascertain the extent of injury and the costs of restoration. The planned termination of data analysis on February 28, 1990, requiring the termination of data gathering in September of this year, bears no rational relationship to the duration of study required to assess damages from the spill and will prevent full recovery of restoration costs.

We understand that all prior drafts of the plan were for 5 years of study and that it was only at the last minute that federal officials in Washington, D.C. ordered that the government commit to only one year of study. That decision is an arbitrary one, driven by political concerns, rather than one justified by science or the public interest.

B. The One-Year Limit On Assessment Studies Is a Violation of the Trustees' Duty to Assess Long-Term Effects

Subordinate to the Trustees' duty to recover restoration costs is an explicit statutory duty to assess natural resource damages. Section 107(f)(2)(A) of the Comprehensive Environmental Response and Liability Act (CERCLA), states that natural resource

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[3](...continued)
toxicity of that oil will vary over time, and will require considerable study to determine its ultimate fate and effects." Id. at 237.

trustees "shall assess damages for injury to, destruction of, or loss of natural resources" for purposes of recovering restoration costs. 42 U.S.C. §9607(f)(2)(A). This provision is made expressly applicable to the oil spill liability section of the Clean Water Act. Id. The duty to assess natural resource damages is violated by the Trustees when they restrict studies in a manner that will result in a failure to ascertain long-term injury.

CERCLA specifically provides that long-term injuries are to be studied. In a section requiring the Department of Interior to draft regulations governing natural resource damage assessment, CERCLA mandates that such regulations include provisions designed to "determine the type and extent of short- and long-term injury." 42 U.S.C. §9651(c)(2). The legislative history of CERCLA demonstrates that Congress was aware of the problem of long-term injury and intended such injury to be addressed. A report by the Senate Committee on Environment and Public Works indicates that the committee received testimony that injuries of long duration do result from spills of oil and other hazardous materials. See S. Rep. No. 848, 96th Cong., 2d Sess. at 84 (1980), and acknowledges that damage assessment includes "evaluation of long-term or delayed impacts on biological systems." Id. at 87. Moreover, in addressing assessment regulations, the report reiterates that provisions governing large or "unusually damaging" spills are to contain "protocols

for field assessment of the type and extent of short- and long-term damage." Id. at 86 (emphasis added).

The regulations ultimately promulgated by the Department of Interior for natural resource damage assessment reflect the statute's focus on the long-term. First, the regulations direct trustees to consider, inter alia, the "duration, frequency, season and time of the discharge or release." Natural Resource Damage Assessments, 43 C.F.R. §11.64(a)(4)(ii) (emphasis added). Second, "injury" is defined as a "measurable adverse change, either long-term or short-term, in the chemical or physical quality" of a natural resource resulting "directly or indirectly" from exposure to oil or hazardous materials. 43 C.F.R. §11.14(v). Finally, the regulations specify various methods for determining injury to biological resources that cannot be performed effectively in a data-gathering period of less than one year. The regulations recognize inter alia, "cancer," "genetic mutations" and "physiological malfunctions (including malfunctions in reproduction)" as categories of injury, §11.62(f)(1)(i). In order for injuries of this nature to be statistically observed, more than one year of study is necessary. For example, for reproductive malfunctions, a growth period of at least one reproductive cycle is essential.

The February 28 termination date for studies restricts field data gathering to a period of six months, since field studies must end before the onset of the Alaskan winter. In this period of time researchers will be unable to obtain statistical data on

delayed population effects and many types of indirect injury that will occur.

As discussed in the comments of Drs. Lane, McElroy, Sanders, Vogel, Wright, Hayes and Button, there are many significant long-term impacts that will not become evident in the first year. Through processes such as bioaccumulation and biomagnification and through the successional stages in benthic infauna described by Dr. Sanders, population impacts will be felt years after the original contaminant release. Dr. Button describes the potential for long-term changes in water chemistry that will persist for long periods, referring to the decade to century life times of hydrocarbons and their products.[4]

By cutting off studies after the first year, it will also be impossible to analyze two related factors that could not possibly be addressed in the initial year. First, it is not possible to study natural resource damages caused by the various <u>responses</u> to the oil spill, including first year cleanup and assessment activities. Given the massive deployment of resources and the tremendous potential for environmental disruption caused by this presence, these effects may be quite dramatic. Exxon and other PRPs are liable for these impacts as well as those caused by the spill itself. Relatedly, failure to continue studies in subsequent years will render it impossible to determine the actual effectiveness of activities conducted in year one.

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[4] Drs. Vogel, Wright and Hayes agree that one-year studies cannot examine water quality phenomena that have longer time scales.

To ignore such impacts and to have decisions about which studies to continue based solely on whether there have been observed effects in the first year would lead to a serious underestimate of the spill's impacts. To cut off studies prematurely not only will preclude full recovery from Exxon in this case, but will prevent a full scientific understanding of both the short- and long-term effects of a major oil spill, an understanding which has been seriously lacking to date and which would help inform future public policy debates. By failing to provide studies to adequately assess such injuries, the Trustees violate both the statute and regulations governing natural resource damage assessment.

C. <u>The Trustees' Violation of Their Statutory Duty To Adequately Assess Damages Is Not Cured By the Provision in the Assessment Plan Allowing for An Extension of Studies</u>.

The need for assessment studies of longer than one year's duration is evident <u>now</u>. Thus while the Assessment Plan proposed by the Trustees provides for an extension of studies after February 28 if "approved by the Trustees upon recommendation of the Trustee Council and scientific and legal review groups as being necessary to promote restoration and to support assessment of legally recoverable natural resource damages," (Draft Plan at 26), this provision does not satisfy the Trustees' duty to ensure that damages are properly assessed and the full costs of restoration are recovered. This extension provision does not obligate the trustees to formally consider extension in any manner and isolates any such consideration from public notice and

review. It thus gives no guarantee that necessary studies will be performed. The recovery provisions of the Clean Water Act and the assessment provisions of CERCLA mandate that the Trustees adopt a reasonable duration for assessment studies before the assessment plan is approved. Piecemeal decisions to extend a particular study here or there cannot replace the function served by a comprehensive, coordinated long-term assessment plan.

Com.	Topic	Issue	Sug.	Sort
5	4	0200		2

III. THE TRUSTEES MUST PROVIDE PUBLIC NOTICE AND COMMENT ON ANY DECISION TO TERMINATE OR EXTEND ASSESSMENT STUDIES AFTER FEBRUARY, 1990.

If the Trustees retain the February, 1990 deadline for assessment of natural resource damages resulting from the Exxon Valdez Oil Spill, they must provide an opportunity for public participation at the time this deadline is reviewed. The Draft Plan currently provides that the Trustees may extend studies beyond the deadline after consultation with "legal and scientific review groups" and upon a determination by the Trustees that extensions are "necessary to promote restoration and to support assessment of legally recoverable natural resource damages" (Draft Plan at 26). No opportunity for public participation is included in this review process.

However, public participation in the development and amendment of the Draft Plan is required under both the Administrative Procedure Act (APA) and the Department of Interior

(DOI) regulations governing damage assessment.[5] The APA requires federal agencies to give public notice and solicit public comment in connection with any "rule making." 5 U.S.C. §553. "Rule making" is defined as the process of "formulating, amending, or repealing any rule," 5 U.S.C. §551(4), while "rule" is broadly defined to include any "agency statement of general or particular applicability ... designed to implement, interpret, or prescribe law or policy." 5 U.S.C. §551(5) (emphasis added). The Draft Plan is a "statement of particular applicability designed to implement law" that has substantive impact on the rights and duties of affected parties and thus is subject to the APA notice and comment procedures.

The Draft Plan is subject to regulatory notice and comment procedures under 43 C.F.R. §11.32. This section of the DOI assessment regulations provides that any assessment plan or significant modification of an assessment plan must be made available for public comment for 30 days prior to the plan taking effect. 43 C.F.R. §§11.32(c), 11.32(e)(2).

Any decision to terminate or extend assessment studies beyond February 28, 1990 will constitute an amendment or significant modification of the assessment plan. The duration of studies is a critical element of the plan, directly linked to the type and extent of injury that will be detected and the amount of damages that will be assessed. The final decision with respect to termination or continuation of studies, therefore, will

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5 Sections 101(e) of the Clean Water Act and 117 of CERCLA also evidence a congressional concern for ensuring public participation in the development of plans of this type.

significantly affect the character of the plan. The public must be involved in such an important decision at the time it is made.

To provide meaningful public review, the Trustees should do three things:

1. Provide the public with information regarding the results of studies performed this past summer since those results bear upon the direction of further studies;

2. Provide greater detail on the studies proposed to be performed for upcoming seasons than does the draft plan (which, as the experts state, provides inadequate information to enable proper scientific review); and

Com.	Topic	Issue	Sug.	Sort
6	4	0200		2

3. Allow early enough opportunity for public input so that the public comments can be useful in the design and conduct of the studies that are performed (again in contrast to the process followed in the draft plan where the field studies were completed before there was any public comment).

IV. THE ASSESSMENT NEEDS TO HAVE MORE OF AN ECOSYSTEMS FOCUS.

Com.	Topic	Issue	Sug.	Sort
7	3	0111		2

One of the most serious criticisms noted by the scientists who reviewed the draft plan was the lack of an ecosystems approach to studying the effects of the spill. As Dr. Pat Lane observed in her comments:

> All natural populations exist in ecosystems and although many key populations are of interest because of their direct commercial value, studying them in isolation usually will not produce a true representation of total environmental deterioration. Many populations are predators, competitors, or prey in regard to their interactions with other species in the terrestrial and marine foodwebs that exist in and around Prince William Sound. Indirect changes will come about not only from the sublethal and life history changes in the individual populations that inhabit the ecosystems, but also from the altered ecological interactions and foodwebs. A predator population can

> decline not only from the direct effects of oiled feathers or ingested oil, but also from the lack of a critical prey species that was killed previously by the oil spill. There is no evidence that an ecosystem approach will be taken to examine and quantify foodweb effects related to the oil spill. This is exceedingly unfortunate for two reasons. First, from an ecological point of view in the final analysis it is the long-term persistence of the ecosystems of the planet that are of main concern, not just the few species that are associated with direct monetary benefits today. Secondly, focus on populations gives too narrow a definition of damage and must a priori lead to further underestimates in damage assessment.... Thus, if the guilty party were made to pay only for the number of birds or mammals directly killed by the oil spill, for example based on a carcass count, the amount of true damage could be underestimated by orders of magnitude. (emphasis supplied).

Dr. Lane recommends the use of appropriate models at both the population and ecosystem levels to predict multi-generational effects and cites to work she has done previously (copies attached) of both population and ecosystem level risk analyses.

Dr. McElroy also stated this same concern:

> The plan focuses on assessing damage to each resource as an individual unit with emphasis placed on quantification of exposure to oil components, stock size, and in some cases reproductive fitness. Very little effort has been placed on assessing impact on system wide, or interactive processes. For example, how oiling may effect productivity in a given area which in turn may affect species composition and or food resources. Investigation of each resource species as an individual component is extremely costly and may miss subtle effects caused by interactions between species. If species A is severely affected, its former prey may become more abundant which may deplete food resources of species B. In this case the two species don't interact directly, but effects on one can lead to significant effects on the other. In order to get a complete picture of damage to the ecosystem, a comprehensive damage assessment plan should focus on individual species as well as their interactions and functioning of the ecosystem as a whole.

Com.	Topic	Issue	Sug.	Sort
8	3	0100		2

The persistence of hydrocarbons in the sediments and the resulting alterations in benthic communities also are crucial

areas of study. Dr. Howard Sanders, who did pathbreaking work on this issue in connection with the Florida barge spill off West Falmouth, comments on the importance of studying these effects and understanding the threats to fish and shellfish populations dependent on these communities. He recommends methods of study that will allow proper understanding of these effects.

Drs. Liljestrand and Button raise similar concerns regarding the effects of hydrocarbons in the air and water. For example, Dr. Liljestrand comments that the effects of air contaminants must include the dry flux of organic air pollutants onto vegetation (which may affect the plants and result in subsequent intake by plant foragers). Dr. Button notes that the studies seem to ignore long-term chemical changes induced by the hydrocarbons introduced by the spill, and their effect on global as well as regional water chemistry.

Com.	Topic	Issue	Sug.	Sort
9	3	2040		2

All these comments point to the need for an expanded ecosystems scope which will provide a fuller and more complete assessment of injury than the draft plan proposes.

V. EXXON SHOULD NOT PLAY A MAJOR ROLE IN THE DAMAGE ASSESSMENT AND RESTORATION PLAN DEVELOPMENT OR IMPLEMENTATION.

The Draft Assessment leaves open the question of the role of Exxon and other potentially responsible parties (PRPs) in conducting the damage assessment, and in developing and implementing the restoration plan. In particular, the Trustees "have not decided whether, or to what extent, potentially responsible parties should participate in the damage assessment." Draft Assessment at iii. We object strongly to the possibility

Com.	Topic	Issue	Sug.	Sort
10	3	0207		2

that Exxon and other PRPs will be given a significant role in these tasks.

We do not, of course, object to any requirement that Exxon fund damage assessment and restoration efforts by the Trustees or their agents, as we believe is required by CERCLA and the Clean Water Act, so long as Exxon has no control (outside of the normal public process) over how the funds are spent and how the studies and restoration are conducted. In fact, because it is apparent that many of the problems identified in these comments relate directly to inadequate Trustee resources to conduct the assessment,[6] the Trustees should strongly consider filing a cost recovery action <u>immediately</u> against Exxon and the other PRPs as a means of financing immediate, ongoing damage assessment costs.

However, as explained below, we object on both policy and legal grounds to further involvement by Exxon in the damage assessment and restoration processes.

A. <u>It is Bad Policy to Allow Exxon to Participate in the Damage Assessment and Restoration</u>

Given the potential liability and other consequences faced by Exxon and other PRPs (and the oil industry as a whole) as a result of this oil spill, it is completely unrealistic to expect

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[6] For example, we hear disturbing reports that numbers of samples may be cut back drastically due to financial constraints. This could severely undercut the validity of data and conclusions drawn from those data. Similarly, due to the high cost of fractionizing water samples, only a very small percentage of the samples is being taken for specific fractions; the rest are analyzed for total hydrocarbons. This limits severely the Trustees' ability to determine concentrations of individual hydrocarbon fractions, such as benzene, ethylbenzene, toluene, xylene and other constituents.

that these parties can participate in the assessment and restoration from an objective perspective.

Allowing PRPs to participate in the assessment process is akin to asking the fox how many chickens it ate. Because Exxon is financially liable for any natural resources destroyed or damaged due to the spill or the spill cleanup, it clearly has little incentive to document the full magnitude and severity of those damages. In fact, Exxon has a direct pecuniary incentive to minimize any proof of the damages caused by the spill.[7]

This conflict of interest is far from purely theoretical. Exxon now has been sued by a large number of parties, including NRDC and other environmental groups, commercial interests, and by at least one of the Trustees.[8] Thus, a direct adversarial interest already exists related to the specific issues that will be addressed by the damage assessment and restoration plan.[9] It is completely untenable to give Exxon direct control over matters that are likely to be contested in court between Exxon and the Trustees.

Com.	Topic	Issue	Sug.	Sort
11	3	0201		2

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[7] Information collected by NRDC and other groups demonstrates that where PRPs participated in Superfund remedial investigations, treatment options (as opposed to containment or other less permanent remedies) were chosen only 38% of the time, compared to 61% where EPA or states took the lead in remedy selection. This demonstrates the high potential for PRP bias in this type of activity.

[8] We fully expect that suits will be filed by the federal Trustees as well, if the Trustees are to fulfill their public trust responsibilities under CERCLA and the Clean Water Act.

[9] This adversarial relationship was exacerbated by Exxon's recent lawsuit against the State of Alaska. Conceivably, Exxon could use information collected during the damage assessment in its case <u>against</u> one of the Trustees.

Even aside from the formal conflict of interest related to Exxon's potential financial liability, Exxon clearly has an interest in minimizing the public's awareness of the actual extent of the damages caused by the spill. From the outset, Exxon seems to have been concerned first and foremost about the public relations implications of the spill. We expect that this will continue to guide Exxon's activities. These concerns could jeopardize the objectivity and adequacy of the assessment and restoration. One major factor driving Exxon's behavior, we suspect, is the desire of the oil industry to drill in the Arctic National Wildlife Refuge and other frontier areas of Alaska and the Outer Continental Shelf. It is in the long-term interests of the industry as a whole to attempt to minimize the public's view of the damage caused by this highly visible event.

Com.	Topic	Issue	Sug.	Sort
12	3	0207		2

One might argue that while the concerns discussed above apply to the damage assessment process, they should have little bearing on Exxon's ability to develop and to conduct the restoration plan. Here too, however, Exxon has a direct conflict of interest that may jeopardize the conduct of an adequate restoration effort. Exxon has an interest in deciding whether or how to conduct any given portion of the restoration based purely on whether it will reduce their ultimate liability by a sufficient amount.[10] Indeed, since as confirmed by the State of Ohio decision restoration cost is one measure of Exxon's

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[10] Exxon's possible attitude in this regard may be anticipated based on the company's callous refusal to commit to return next summer to continue the cleanup effort.

liability, Exxon has a direct incentive to minimize restoration costs.

While this type of cost balancing may be appropriate for a private corporation, it is completely inappropriate for purposes of the public decision on the appropriate restoration of Prince WIlliam Sound. This critical public decision should be based entirely on biological factors. All feasible efforts should be made to restore the environment of the Sound to as close an approximation of pre-spill conditions as possible.[11]

Allowing the responsible parties to participate in the damage assessment and restoration would be particularly ironic and inappropriate in this case, where the malfeasance or nonfeasance of Exxon, Alyeska and other responsible parties was so directly responsible for the accident, the almost complete failure to contain the accident, and the extremely ineffective cleanup to date. Exxon's poor response to date, which has focused on public relations to the detriment of sound environmental response, renders them completely inappropriate for a significant role in the damage assessment and restoration.

Finally, it may be true that Exxon (and its consultants) have more personnel than the Trustees to devote to the damage assessment and restoration. This does not mean, however, that Exxon should participate directly in these efforts. As explained above, Exxon can and should be required to pay the Trustees, in

Com.	Topic	Issue	Sug.	Sort
13	3	0207		2

[11] As discussed elsewhere in these comments, the Clean Water Act establishes a preferred hierarchy of restoration, rehabilitation and acquisition of replacement resources. While Exxon might decide that acquisition of replacement resources is cheaper than restoration, the Trustees are not free to make this choice. If restoration is feasible, it must be the preferred approach.

advance where necessary, to retain the necessary consultants and other personnel to conduct a completely independent assessment and restoration.

B. It Would Be Illegal to Allow Exxon to Participate Extensively in the Assessment Plan and Restoration

These policy arguments clearly suggest that Exxon should be given no major substantive role in the assessment and restoration. We also believe, however, that even after State of Ohio, assigning Exxon this role under these circumstances would be illegal.

The Clean Water Act imposes a specific trust duty on the Trustees to conduct the damage assessment and restoration. CWA section 311(f)(5) provides:

> The President, or the authorized representative of any State, shall act on behalf of the public as trustee of the natural resources to recover for the costs of replacing or restoring such resources. Sums recovered shall be used to restore, rehabilitate, or acquire the equivalent of such natural resources by the appropriate agencies of the Federal Government, or the State Government.

(emphasis added). This language indicates that the Trustees have the responsibility to conduct the damage assessment and restoration effort, and prohibits the delegation of this trust duty to an outside party,[12] particularly outside parties with a direct adverse interest.[13]

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[12] We do not suggest that specific portions of the assessment or restoration cannot be performed by independent outside contractors, who have no interest in the outcome, and who are under the direct supervision of the Trustees.

[13] With respect to restoration, the Conference Report on the 1977 Clean Water Act Amendments, which added sections 311(f)(4) and (5), confirms that the "measure of liability is the reasonable costs actually incurred by Federal or State authorities in replacing the resources or otherwise mitigating the damages." H. (continued...)

Similarly, section 107(f)(1) of CERCLA provides:

> The President, or the authorized representative of any State, shall act on behalf of the public as trustee of such natural resources to recover for such damages. Sums recovered by the United States Government shall be retained by the trustee ... for use only to restore, replace, or acquire the equivalent of such natural resources. Sums recovered by a State as trustee under this subsection shall be available for use only to restore, replace, or acquire the equivalent of such natural resources by the State.

(emphasis added). CERCLA section 107(f)(2)(A) and (B) proceed to elaborate that the assessment of natural resource damages must be performed by federal and state officials, respectively, designated by the President and the Governor of the affected state.

Section 104 of CERCLA does authorize the President to allow a PRP to conduct removal or remedial action, when the President determines that such action will be done properly and promptly. The definitions of "'remove' or 'removal'" and "'remedy' or 'remedial action'" (CERCLA sections 101(23) and (24)) describe cleanup tasks, as distinct from natural resource damage assessment or restoration activities. By contrast, the natural resource damage assessment and restoration provision (section 107(f), uses the terms "restore, replace, or acquire the equivalent of such natural resources." Thus, even if Congress intended to allow the PRP to conduct a cleanup, it did not intend to allow PRPs to conduct the damage assessment or restoration.

This distinction makes perfect sense. The PRP may have a direct interest in conducting a prompt and adequate cleanup, so

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[13](...continued)
Conf. Rep. 830, 95th Cong. 1st Sess. 92 (December 6, 1977) (emphasis added).

as to minimize potential liability for natural resource and other damages. But as explained above, the PRP has a direct conflict of interest with respect to the natural resource damage assessment and restoration.

Despite this statutory distinction, the State of Ohio decision (we believe incorrectly) allows the Trustees flexibility to delegate purely ministerial duties related to the damage assessment to PRPs. The Court made it clear, however, that such duties must be supervised closely by the Trustees, and only consistent with a lawfully-developed assessment plan. For the policy reasons discussed above, we do not believe that the Trustees should exercise this flexibility in this case.[14] Exxon has not proven itself sufficiently reliable and objective to serve the public interest in these tasks.

Equally important, because of the extremely vague nature of the assessment plan, implementation of all or any part of the plan by Exxon would be more than purely ministerial. The plan gives little or no guidance on such critical issues as location of sampling, size and numbers of samples, analytical techniques, data preservation methods, quality control procedures, and other issues which severely affect the results of the studies. To delegate such decisions to Exxon would seriously compromise the study effort and give them major rather than ministerial responsibilities in conducting the assessment. Given the magnitude and complexity of this damage assessment, we doubt

Com.	Topic	Issue	Sug.	Sort
14	2	0100		2

[14] The Trustees note repeatedly that no decisions have been made on whether to follow the Interior Department assessment rules, in whole or in part.

whether sufficient guidance can be provided to render Exxon's role purely ministerial.

Also because of the extremely vague nature of this assessment plan, allowing Exxon or other PRPs to participate directly in the damage assessment and restoration would violate the due process and public participation rights of NRDC and other parties who have a strong interest in the adequacy of these processes. The Trustees' decisions on appropriate remedial action, the monetary value of the resources lost or damaged due to the accident, and on the appropriate restoration, replacement or acquisition actions, are formal administrative decisions subject to the Administrative Procedure Act, section 101(e) of the Clean Water Act, section 117 of CERCLA, and relevant provisions of state law. Particularly if the plan remains as vague as it is now, the parties who actually conduct the assessment and restoration will end up making important decisions, <u>without public input</u>, on how the assessment and restoration will be conducted. Allowing Exxon or other PRPs such a direct role in decisions related to the conduct of the damage assessment and restoration gives one set of interested parties a clear preference and advantage in this public process. This would violate fundamental tenets of due process and public participation in agency decisions.

Com.	Topic	Issue	Sug.	Sort
15	2	0207		2

VI. THE TRUSTEES SHOULD PROCEED QUICKLY WITH THE DEVELOPMENT OF A COMPLETE RESTORATION PLAN.

Com.	Topic	Issue	Sug.	Sort
16	3	2110		2

Although the cover letter to the draft plan indicates that the document includes both a draft natural resource damage

assessment plan and a draft restoration strategy, no actual proposed restoration strategy is included in the document.[15] Instead, the document includes only an extremely brief discussion of how the proposed restoration plan will be developed in the future. This brief discussion provides no information on the direction the Trustee Council is considering for a restoration plan, or even possible options. Nor does the discussion even include a precise schedule for the development of such a plan.

The draft plan should have included a far more detailed discussion of this issue. In particular, as required by the State of Ohio decision, the total damages assessed against Exxon must include the cost of restoration or replacement, to the extent possible, and to the extent restoration or replacement is not possible, the cost of acquiring replacement resources or habitat. Thus, the restoration plan has a direct relationship to, and therefore should be prepared as a part of, the natural resource damage assessment plan.

But given that the plan announces an intent to seek substantial additional public comment as it proceeds with the development of a restoration plan (we agree this additional opportunity for comment is legally necessary), we urge the Trustees to proceed with the development of the restoration plan as quickly as possible. While we recognize that some elements of the restoration plan require a more detailed assessment of what resources were lost or damaged due to the spill, development of

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[15] We use the term "restoration" to include restoration, replacement, and acquisition of replacement resources and habitat. As discussed extensively below, the Trustees should ensure similar inclusive terminology.

the restoration plan does not have to be put completely on hold while this information is collected. With respect to some types of resources, sufficient information is available now to prepare at least an initial draft of a restoration plan. This plan can be revised as more complete information becomes available.[16]

Moreover, given that an entire year of data collection has already occurred for most of the studies included in the draft restoration plan, it is unclear why certain aspects of the restoration cannot begin next summer. We recognize that the Trustees must balance the goals of conducting a detailed damage assessment and conducting restoration activities that may obscure the damage assessment process. We also understand that, in some cases, initiation of restoration work may have to await additional information on the nature and extent of damage.

The overriding objective, however, must be to restore the affected environment as quickly and completely as possible. Therefore, well-considered restoration work should begin next year wherever possible, particularly where success will be improved if restoration begins more quickly.[17] As a corollary, since the public must have a fair opportunity to comment on proposed restoration activities, a proposed restoration plan must

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[16] With respect to resources for which even less information is available, the Trustees could at least scope out the components of the restoration plan that need to be developed.

[17] This is not to say that the Trustees should rush to implement restoration procedures that may be ineffective or counterproductive. See comment 4 below.

be prepared this winter, at least with respect to those activities that may begin next year.[18]

When the restoration plan is developed, it should incorporate the following concepts, at a minimum:

1. The restoration plan must include full consideration of restoration, replacement, and acquisition of replacement resources and habitat. Currently, for example, the draft plan includes no reference to acquisition of replacement resources or habitat. See Draft Plan at 27-28.[19]

Proper consideration of all of these strategies is essential for a number of reasons. First, as noted by many of the experts who commented on the draft plan, complete restoration of the environment of Southcentral Alaska is not possible. Therefore, replacement or acquisition will be necessary to compensate the American public and the environment fully for the damage caused by the spill.

Second, currently the studies identified in the damage assessment plan do not focus on the full range of restoration, replacement or acquisition strategies. For example, no study specifically aims to identify the types of habitat that may be priorities for additional acquisition, and to identify potential

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[18] Our concern that an opportunity to comment might postdate the actual work is well-founded, since this is precisely what occurred with respect to the first year of field data collection on the damage assessment studies.

[19] As discussed above, cleanup, which involves removal of oil and other contaminants, should not be confused with restoration, which focuses on the biological functioning of the affected environment. Thus, "bioremediation" techniques, while potentially desirable cleanup methods, do not constitute restoration.

target acquisition areas not currently under public ownership, or that are not currently protected. Similarly, no studies address specifically such issues as the feasibility of restocking populations, or the feasibility of restoring polluted benthic habitat. The draft restoration plan must address these issues.

Third, the restoration plan should identify replacement and, in particular, acquisition opportunities that might be time-limited. For example, the Trustees may elect to protect additional habitat in Prince William Sound by repurchasing timber leases or by cancelling pending timber sales in the Chugach National Forest, and by recommending more areas of the forest with important fish and wildlife habitat for wilderness designation.[20]

Similarly, should the Trustees decide that additional marine habitat should be protected to compensate for habitat lost due to the spill, opportunities for acquisition must be identified quickly. Viable opportunities include repurchasing existing oil and gas leases in Bristol Bay or other areas of Alaska, which would protect critical habitat for many of the species affected by the spill, or the creation of a Prince William Sound Memorial Marine Sanctuary in areas that are currently subject to logging, oil and gas or other development pressures.

2. The restoration plan must consider all aspects of the environment of the affected area, and not just commercially important or other commonly-recognized species. Instead, the

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[20] Decisions on some pending timber sales have been postponed due to the spill. Obviously, these sales must be reconsidered in any event to account for the major new biological stresses caused by the spill.

restoration plan must be designed to restore, replace, or acquire replacement habitat for all affected species, and all affected environmental qualities. In short, the goal is restoration or replacement of the total environment, and the environmental productivity and diversity that existed before the spill.

3. The restoration plan should focus on qualitative as well as quantitative environmental measures. For example, a restoration plan that focuses only on numbers of species and numbers of organisms might supplant the affected environment with a somewhat modified ecosystem, in lieu of true restoration. Thus, the plan should consider not only numbers of species, but the specific types and distributions of species in the region before the spill. Similarly, the plan should focus not only on population size, but also on the relative size of various populations that interact in the environment. This will ensure that the affected environment is returned to as close a condition as possible as existed before the spill.

In addition, the restoration must focus on wilderness and other aesthetic values, in addition to purely biological factors. Prince William Sound, Kenai Fiords National Park, Katmai National Park and Preserve, Kodiak National Wildlife Refuge and other affected areas are recreational resources for thousands of people, and were intended to be preserved in their pristine, natural state for future generations. National parks and other conservation system units in particular were created by law

specifically for wilderness and other recreational purposes.[21] These purposes, as set forth in relevant organic legislation, land use and conservation plans, and other documents should be reviewed as part of the restoration planning process. For example, to the extent that the full wilderness values of an affected national park cannot be "restored", these values should be replaced through acquisition of other areas.[22]

4. Extreme care should be taken with artificial "restoration" and "rehabilitation" techniques.[23] While we encourage the Trustees to consider the full range of restoration and replacement options, and to employ options that are promising, some "restoration" techniques may do more harm than good, depending on the circumstances, location, and intensity of use. For example, salmon hatcheries may increase the local salmon population and harvest, at the expense of the integrity of wild salmon stock. Other efforts, such as restocking of wild populations, may require considerable time and resources, with limited success. The same resources may be spent more effectively by acquiring replacement habitat to support remaining local populations while the affected regions recover naturally. While we do not intend to choose particular options at this time,

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[21] For example, the entire coast of Katmai National Park, much of which was affected by the spill, is designated wilderness.

[22] Obviously, this determination is relevant to the final damage assessment to the extent that funds are needed to acquire additional land resources.

[23] We do not consider techniques such as "bioremediation", which uses nutrients to encourage bacteria growth as a means of removing oil, to constitute "restoration". These techniques are properly considered cleanup activities.

we urge the Trustees to consider the full costs and effects of all possible restoration strategies before particular strategies are selected.

5. As with the damage assessment, the restoration plan must provide, to the maximum extent possible, for the renewal of the long-term productivity and diversity of the affected environment, and not just for the elimination of short-term, chronic effects. For example, it is not sufficient simply to eliminate acute toxicity in the environment and to replace the most obvious species to their original numbers. Efforts must be made to ensure that the structure, function and productivity of the food chain and other aspects of ecosystem function are restored to the greatest extent possible. Similarly, attention must be given to sublethal effects, such as the reproductive success, growth potential, and overall health of individuals, as well as direct mortality.

6. The restoration plan must address damages caused by the cleanup and other response activities conducted this summer, as well as damage caused by the spill itself.

VII. THE TRUSTEES MUST DECIDE WHAT ASSESSMENT STANDARDS AND PROCEDURES WILL BE USED IN THE ASSESSMENT, AND ALLOW PUBLIC INPUT INTO THOSE DECISIONS.

The Draft Assessment repeatedly notes that no decisions have been made on such critical decisions as whether the Interior Department damage assessment rules will be used, in whole or in part, and what measures of damage will be used in the process.

Com.	Topic	Issue	Sug.	Sort
17	3	2209		2

These statements ignore two critical factors. First, the State of Ohio decision set forth critical guidance on what

aspects of the rules may or may not be used, and on what basic economic valuation principles must be used in the assessment process.[24] For example, the decision makes clear that the Trustees may not employ the "lesser of" concept in Interior's rules, or any variant on that principle. Rather, restoration cost must be considered the preferred approach unless restoration is technically impossible or grossly disproportionate to the value of the resources. Conversely, the decision makes clear that the measure of damages must exceed restoration costs; the lost use and nonuse values also must be assessed in order to make the public and the environment whole. In such cases, the Court explained that additional damages should be used to acquire replacement resources or habitat. Finally, the Court noted that lost use values should not be based exclusively on "market factors." All reliable means of calculating the value of the resource must be employed.[25]

The draft assessment must be revised in light of the decision in State of Ohio to expand the economic studies to evaluate the costs of restoring, replacing or, where neither is possible, acquiring equivalent resources elsewhere. The economic studies described in the draft plan, however, emphasize lost use values to the exclusion of restoration. The comments of economist Mike Kavanaugh (attached) make clear the need to expand

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[24] Economic issues are addressed in greater detail in the attached comments of Michael Kavanaugh.

[25] The Draft Assessment continues to obfuscate this issue by indicating that lost use values will be considered in the assessment, without defining the types of uses that will be considered and the methods of valuing those uses.

the scope of analysis; in addition, he suggests ways to improve the proposed studies assessing lost use values.

Second, the standards and procedures that will be used in the damage assessment will have a critical effect on the results of the analysis. As such, the public has an <u>absolute right</u> to comment on these decisions. Moreover, since the procedures and economic methods that will be used to value the resources lost or damaged due to the spill may affect the types of scientific studies that are conducted, or vice versa, it is not sufficient to allow public participation on this issue after all of the scientific studies are completed. Public input into these decisions should be allowed, therefore, as soon as possible.

VIII. THE TRUSTEES SHOULD INCORPORATE THE VIEWS OF A BROADER SCOPE OF EXPERTS AND RESEARCHERS.

As noted above, we request that NRDC's experts play a role in the formal peer review process being used by the Trustees. We also believe, however, that other legitimate views may be excluded from the ongoing damage assessment process.

For example, the role of the National Park Service is not spelled out in the Draft Plan, leaving it unclear whether their views are properly being considered. Extremely important national park lands were affected by the spill, yet only the U.S. Fish and Wildlife Service (FWS) is listed as the Interior Department's Trustee representative. This role should be shared between FWS and NPS, to ensure that the interests of valuable park lands are protected, and to take full advantage of the data collected by NPS during and after the accident.

Com.	Topic	Issue	Sug.	Sort
18	3	0200		2

Similarly, the Draft Plan appears to ignore entirely the fact that much independent research and information collection is being conducted in the areas affected by the spill. This ranges from formal scientific research by independent scientists, to coordinated or anecdotal efforts by citizens to identify carcasses, oiled beaches and other readily-identified effects of the spill. The assessment plan should discuss a formal effort to collect and use, as appropriate, this information collected by outside sources.

CONCLUSION

The Draft Assessment Plan fails to provide sufficient detail to allow serious public comment on the conduct of the Exxon Valdez damage assessment and restoration planning processes.

Nevertheless, it is apparent from the information provided that the plan contains serious flaws that may jeopardize both the damage assessment and the restoration plan. Most notably, the general proposal to limit the plan to one year of studies will seriously underestimate the natural resource damages caused by the spill. Moreover, the Trustees' failure to initiate serious restoration planning calls into question their commitment to a comprehensive, long-term restoration of the affected environment, or to purchase replacement resources and habitat where full restoration is not possible.

We urge the Trustees to correct the violation of our public comment rights by allowing additional opportunities to comment on all future key decisions related to the damage assessment and restoration. More important, the Trustees should broaden the scope and duration of the damage assessment plan, and initiate

careful restoration planning immediately, consistent with these comments and the attached comments of our experts.

ATTACHMENTS - COMMENTS OF EXPERT REVIEWERS

Comments of Dr. Anne McElroy

Comments of Dr. Patricia A. Lane

Comments of Dr. Howard L. Sanders

Comments of Dr. Michael Kavanaugh

Comments of Dr. Howard Liljestrand

Comments of Dr. D.K. Button

Comments of Drs. Steven Wright, Kim Hayes and Timothy Vogel

APPENDIX (Studies referred to in the comments of Dr. Patricia A. Lane)

Crowell, M.J. and P.A. Lane. The Effects of Crude Oil and the Dispersant COREXIT 9527 on the Vegetation of a Nova Scotia Saltmarsh: Impacts After Two Growing Seasons.

Lane, P.A., 1989. Environmental Effects Monitoring: Pitfalls and Possibilities in Relation to Offshore Oil Development.

Lane, P.A., 1989. Synopsis for Environmental Effects Monitoring: Pitfalls and Possibilities in Relation to Offshore Oil Development.

Lane, P.A., 1988. Reference Guide to Cumulative Effects Assessment in Canada, vol. I.

Lane, P.A., M.J. Crowell, D.G. Patriquin and I. Buist, 1987. Use of chemical dispersants in salt marshes. Environmental Studies Research Funds Report No. 070. Ottawa. 100 p.

Lane, P.A., 1985. Ecological Risk Analysis in Regard to Offshore Oil Development at Hibernia.

COMMENTS AND RESUME

OF

ANNE McELROY, PhD

COMMENTS ON THE DRAFT STATE/FEDERAL NATURAL RESOURCE DAMAGE ASSESSMENT PLAN FOR THE EXXON VALDEZ OIL SPILL RELEASED IN AUGUST 1989, PREPARED SEPTEMBER, 1989

Anne McElroy
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Environmental Sciences Program
University of Massachusetts-Boston

Scope of Review:

As stated in the Federal Register, public comments are being requested to ensure that:

1) important resource concerns are not omitted,
2) the methodologies receive independent review,
3) that appropriate methodologies are chosen for assessment, and
4) that the costs of the assessment are reasonable.

The Register notice also states that additional work will only be done if such study is required to support legal recovery of damages for harm to natural resources if such studies are justified scientifically and are consistent with the objective of restoration of the ecology of the effected area.

As noted in the Register, to expedite damage assessment, all studies were begun prior to publication of the Assessment Plan. Indeed, according to the plan all data collection should be finished by mid September 1989, prior to the receipt date for comments. Data analysis will continue until February 28, 1989. Comments at this point can only serve to criticize the Draft Plan and make suggestions for additional work in the future. Without any preliminary data, suggestions will be speculative. Considering the huge expenditure of funds (35 million) committed to this plan, independent review prior to commencement of study should have been obtained.

Com.	Topic	Issue	Sug.	Sort
19	3	6200		2

To purpose of the plan is to determine the extent and magnitude of injury to natural resources of Prince William Sound and the adjacent Gulf of Alaska in support of the development of a restoration plan to promote the long-term recovery of natural resources and to support damages to be claimed for the loss of services.

The plan focusses on assessing damage to each resource as an individual unit with emphasis placed on quantification of exposure to oil components, stock size, and in some cases reproductive fitness. Very little effort has been placed on assessing impact on system wide, or interactive processes. For example, how oiling may effect productivity in a given area which in tern may affect species composition and or food resources. Investigation of each resource species as an individual component is extremely costly and may miss subtle effects caused by interactions between species. If species A is severely affected, its former prey may become more abundant which may deplete the food resources of species B. In this case the two species don't interact directly, but effects on one can lead to significant affects on the other. In order to get a complete picture of damage to the ecosystem, a comprehensive damage assessment plan should focus on individual species as well as their interactions and functioning of the ecosystem as a whole.

The goals of the major sections of the plan are summarized below:

Part I: Injury Determination/Quantification:

Coastal Habitat: to measure spill-related changes in supra-, inter- and subtidal zones.

Air/Water: to determine the distribution and composition of petroleum hydrocarbons in water, sediments, and living resources (ie. determine the dose).

Fish/Shellfish: to quantify numbers and effects in major fisheries species.

Marine Mammals: quantify deaths, pathology and toxicology as well as number and distribution.

Terrestrial Mammals: quantify damage to coastal species which would consume contaminated aquatic species and run laboratory experiments to assess effects on mink as a model.

Migratory birds: quantify mortality, population census, reproductive success.

Technical Services: Provide the expertise and coordination to ensure accurate and verifiable measurements of hydrocarbons in all samples, histopathological measurements in tissue samples, and mapping of results obtained.

Part II: Development of the Restoration Plan and Implementation Plan:

Part III; Damage Determination: Economic Value of Resource Use

In the summary statement at the beginning of the plan, the following criteria were given for choice of the studies included into the plan:

1) likely validity of impact hypothesis,
2) soundness of scientific approach,
3) cost-effectiveness, and
4) coordination with related work.

From the information presented in the plan, it is very difficult to assess how well each study met these criteria. Considering the extent of the spill, it is likely that all of the resources under investigation would be affected in some way. Therefore the hypothesis of impact is a moot point. The individual studies only justified the importance of the specific resource under investigation, not the soundness of the scientific approach. In many cases an adequate description of what will actually be measured is absent. Details of sampling and analysis are also sparse, making analysis of the approach and particularly the cost-effectiveness impossible.

I have gone through the details of the Coastal Habitat, Air/Water,

Fish/Shellfish, and Technical Services portions of the proposal, have made specific comments on each, and prepared a brief overall summary statement.

GENERAL COMMENTS ON THE PORTIONS OF THE PLAN REVIEWED

In all cases it is impossible to tell if the budgets are appropriate because no details are given on sample size, number of man-hours needed, specific equipment, or anything else. The level of detail in the study plan, methods and analyses given and budgets presented would be completely unacceptable in any kind of peer-reviewed grant or contract application.

Com.	Topic	Issue	Sug.	Sort
140	5	0102		2

In most of these studies, it is also impossible to tell if the methods to be used are appropriate, again due to lack of information presented. The QA/QC plans given in Appendix A and B for chemical analysis and histopathology analysis indicate field sample collectors and analysts will all be properly trained and that appropriate blanks and standards will be run, and that periodic inspection and intercalibrations will be conducted. No similar description of QA/QC is given for the other measurements described in the plan. A large concern is the speed at which this study was undertaken, and the early date at which it is to be completed (2/28/90). Judging by the dates attached to the signatures on the QA/AC plans, much of this work was already in progress before this document, or standard analytical procedures were agreed upon.

Considering the magnitude of the task, it is impossible to believe that these analyses will be completed by March, 1990. If not, when will the information be available. No time-lines for interim reports or data coordination are given. This will be essential to damage assessment and making informed decision on what portions of this study, or addition work may need to be done in subsequent years. Almost no information is given about coordination, specifically when each of these studies will be done, if different portions will be coordinated temporally, who will be responsible for coordinating sampling, analysis, and data transfer. Formation of the Analytical Chemistry Group and the Histology Technical Group to oversee all QA/QC, and I hope coordinate data evaluation, is a step in the right direction. Similar coordination and oversight groups should be developed for the other types of data to be generated.

Com.	Topic	Issue	Sug.	Sort
141	5	0201		2

Com.	Topic	Issue	Sug.	Sort
142	0	0100		2

The studies as presented appear to be mostly descriptive, in some cases grossly over-sampling specific habitats or species. There is a tremendous amount of information available about the effects of oil on organisms (NRC, 1985). Information obtained from other similar spills should also be utilized (e.g. the Amoco Cadiz which grounded near a rocky coast in temperate waters). This work should not be repeated, rather the information from these studies should be utilized. Short-term efforts should be focused on clearly documenting the extent of oiling and effects on key resource species. This is adequately, and in some cases excessively covered in the plan. However, additional study should focus and measuring and predicting the reservoirs, movement and availability of oil which remains in the system, and in quantifying long-term effects on resource populations and community function and structure. Possibly monetary damages could be assessed in two phases, immediate and continuing.

Com.	Topic	Issue	Sug.	Sort
20	3	0108		2

Com.	Topic	Issue	Sug.	Sort
21	4	0100		2

Assessment of short-term effects on these species will generate data needed to calculate immediate monetary damages. In addition, provisions must be made to assess the economic values of long-term, more subtle damages. For example, persistent changes in benthic community structure or productivity might represent a significant enough change in food resources to cease to support a given commercial species in a given area. If the coupling between community productivity and decomposition is significantly disturbed, anoxic conditions could develope which would render the area unsuitable for many species. Determination of the movement, persistance and availability of oil in the benthos is essential to the prediction of long-term effects. Information of this type will be more useful to understand the fates and effects of oil in this system and predict future fates and effects of the oil from the Exxon Valdez as well as other spills which will undoubtedly occur in the area.

Ecosystem function parameters have been largely left out of this study. Community structure will be evaluated in the Coastal Habitat Study, and in some of the fish studies the age/size distribution of individual species will be documented, but little effort has been made to access the functioning of the ecosystem. Particulary in the near-shore estuarine habitats primary and secondary productivity as well as system respiration and organic mater decomposition should be assessed in selected areas. In the Amoco Cadiz petroleum degradation by microbes was significant, and researchers felt that the relative decrease in abundance of hydrocarbon metabolizing bacteria with time was a good indicator of recovery. Investigation of oil degrading microbes is absent from the plan of study. Similarly, structural and functional analysis of micro and macro plant and algal communities appears to be left out of the study plan. Coastal and submerged plants and algae should be included in the study, as these species can be important habitat in themselves and form the basis of the food chain.

Com.	Topic	Issue	Sug.	Sort
22	3	0100		2

Another aspect that could be better addressed concerns the fate of persistent oil components. Analysis of hydrocarbons in the sediment and pore waters should be documented for years. Twenty years after the oil spill near West Falmouth in Buzzards Bay, MA, oil was found in marsh sediments (John Farrington, pers. comm.). In the Amoco Cadiz spill oil migrated down through beach sands and cobble to the beach/water table interface. Movement through subsurface waters has not been addressed here. Oil buried in beach sediments may be quite persistent and would be re-released during winter storm events. The magnitude of this annual re-infusion of relatively unweathered oil should be assessed. As mentioned above, the air-sea interface also seems to have been neglected.

Com.	Topic	Issue	Sug.	Sort
23	3	2010		2

Study of the Amoco Cadiz oil spill for 20 months demonstrated the persistance of oil in nearshore sediments, and the persistance of alterations in benthic community and coastal marsh habitats. Indeed these later two parameters should little evidence of recovery during this period. Considering the colder waters of the arctic, recovery may be much slower. Clearly portions of these studies must be continued for at least several years, with some analyses continued even longer. The damage assessment plan presented, if conducted properly, should be able to support calculation of the immediate monetary damages associated with the Exxon Valdez spill, but some provisions must be made for careful study to assess long-term damages.

COASTAL HABITAT INJURY ASSESSMENT

Overall goals are to determine:

1) abundance of intertidal and subtidal organisms used as food by resource species,
2) contamination of these food resources by oil,
3) quantification of injury over the entire 600 mile affected area, and
4) recovery of various habitat types after clean-up treatments.

Although not specifically stated in goals, attempts will also be made to assess potential impacts of clean-up efforts on the above. This portion is mostly aimed at looking at food chain effects, both for lack to food items and food chain transfer of oil.

Study 1: Comprehensive Assessment of Injury to Coastal Habitats

Description:

Phase 1: categorize coastline into 5 representative coastal habitat types, with representatives of each with low, med, and high oiling. Selection of sites will be "statistically valid" and ground-truthed through a reconnaissance survey. Study design will allow extrapolation to entire 600 mile affected area. Initial selection will be based on exiting coastal morphology scheme and shoreline impact survey maps prepared by Technical Services Study 3#. Ground-truthing will establish approx. 150 study sites.

Phase 2: assess changes in critical trophic levels and interactions, and assess changes in terms of quantity (biomass, productivity) and quality (vigor and utility to other trophic levels) and composition (community composition, diversity and standing crop of key species).

These data will be used to:

1) assess injury to beach sediment and soils,
2) establish response of these parameters to oiling and clean-up,
3) estimate rate of recovery and potential for restoration, and
4) provide linkages to other studies.

Methods:

Phase 1: using GIS pick 3 rep. sites, for each of 45 categories (3 regions x 5 habitat types x 3 degrees of oiling) plus extras = 150. Visit to check and photograph sites, establish boundaries, and describe sites.

Phase 2: study 4 vertical transects through all 3 tidal zones at each site. Chemical analysis of sediment will include hydrocarbon composition as well as determination of volatile organic compounds. The percent of sediment covered with oil, depth of oiled sediment, salinity and soil/sediment texture will also be determined. Biological analyses will include community composition, cover, and standing stock for each trophic level measured. Dominant producing and prey organisms will be designated as key species and estimates of quantity and quality made to assess their contribution to energy flow in the habitat. Amphipod LC50 bioassays will be done to assess sediment toxicity. Samples of

key species will be analyzed for hydrocarbon content. Additional species may be investigated to support other projects. It appears that some of these parameters will be followed over time, as changes over time are mentioned.

Comments:

As described, this study could provide extremely valuable information as to the effect of oil on benthic community structure, the extent of contamination by various oil components in the coastal zone of the entire effected area, and some estimate of how the oiling of benthic communities may affect species feeding on these organisms either due to lack to food (due to death of prey organisms) or food chain transfer of hydrocarbon contaminants (based on the hydrocarbon content in key prey items observed).

Com.	Topic	Issue	Sug.	Sort
24	1	1110		2

It is impossible to tell from the information given how well these objectives will be realized. Measurements will be made along 4 transects at each of 150 sites. No information is given about how many of each type of measurement will be made along these transects, or what methods will be used. No mention of the time scale for sampling is given. Will some of these be visited just post spill, and others only at the end of the summer? The only way to really assess damage to these habitats and predict recovery or plan recovery strategies would be to revisit a representative number of sites on an annual basis for at least several years, with less frequent sampling at multi-year intervals for a least a decade. On the recent 20 year anniversary of the West Falmouth oil spill in MA signs of oil were still present in subsurface sediments.

Com.	Topic	Issue	Sug.	Sort
25	3	1110		2

Although alluded to, no specifics are given on how the success of the beach steam cleaning operations will be assessed. Paired measurements between beaches that were manually cleaned and those which were left alone could determine whether or not these efforts had any long-term effect on the removal of oil and toxicity to organisms. It is quite likely, in my opinion, that steam cleaning may have done more harm than good. This would be a perfect opportunity to assess this before any more "steaming" is done next year.

Com.	Topic	Issue	Sug.	Sort
26	4	2120		2

In principle this study, if adequately carried out and scaled down to a manageable number of sites, would be a good start to assess coastal habitat damage. In addition to the chemical analysis of sediment and biota, species abundance and composition analysis, and sediment toxicity bioassays proposed, plants and algae should be included in the abundance censuses and be analyzed for hydrocarbon content. As the basis of the food web and important habitats in themselves, the effects of oil on these species should definitely be quantified.

It would be helpful to get an estimate of community function in coastal habitats. Primary and secondary productivity should be assessed in the intertidal and nearshore water column and benthos. This will mean analysis of phytoplankton, submerged vegetation and macroalgae as well as determination of organic carbon and hydrocarbon turnover by microbes. Benthic community respiration rates might also yield useful relative information about impacted and control habitat function.

Com.	Topic	Issue	Sug.	Sort
27	3	2120		2

AIR/WATER RESOURCES INJURY ASSESSMENT

WATER RESOURCES

Overall goals are to:

1) map the extent and persistance of floating oil (slick, mouse, tar balls) over the study area, and verify that this material came from the Exxon Valdez,
2) quantify the geographic and temporal distribution of dissolved and particulate oil in the water column, and
3) document levels of petroleum hydrocarbons in subtidal and deep water sediments and biota

Study #1: Geographical Extent and Temporal Persistence of Floating Oil from the Exxon Valdez

Summary: This is primarily a mapping project which will utilize exiting aerial photographs following the progression of the spill, and apply mathematical models to predict coastal impact, and amount of floating oil. Satellite imagery will also be employed. Samples of floating oil will be analyzed for hydrocarbon content and distribution to "fingerprint" the oil in the hope of assigning it to that carried by the Exxon Valdez.

Comments: Use of aerial and satellite images over time should be very useful to map surface oil movement, and document all shore areas impacted. Fingerprinting the oil (particularly before had weathered significantly should help to implicate the Exxon Valdez).

Com.	Topic	Issue	Sug.	Sort
28	1	1210		2

Study #2: Petroleum Hydrocarbon-Induced Injury to Subtidal Marine Sediment Resources

Summary: This study will analyze total petroleum hydrocarbons (TPH) by gas chromatography (GC) and polycyclic aromatic hydrocarbons (PNA) by GC-mass spectrometry with selective ion monitoring (SIM) in subtidal and deep sediments as well as sediment grain size and organic carbon content in offshore areas known or expected to have been oiled and nearshore sites in coordination with the intertidal sampling sites established by the Coastal Habitat study. Site selection will be based on areas likely to have received oil, sensitive areas (hatcheries and estuaries), and areas near to oiled coastal habitats. Sampling will be done in Prince William Sound, Kenai Fiords, the Kodiak Island area and additional locations extending to the Aleutian Chain. In Prince William Sound a manned submersible will be used to visually check areas for the presence of oil. Hydrocarbon analysis will be done on the top 2 cm of the sediment. If preliminary screening indicates the absence of oil, GC-MS will be omitted.

Comments: This study should give an accurate picture of how much and what components of the oil are contaminating surface sediments in deep and nearshore areas. The analytical methods should be appropriate, but again, no indication is given of exactly how many samples will be analyzed. If these data are to support the coastal habitat study, the same sampling and chemical methods must be used. Since hydrocarbon concentrations in the sediments of some of these areas should be high, it would be very useful to also measure

Com.	Topic	Issue	Sug.	Sort
29	3	1220		2

these compounds in pore waters, as this will allow better estimates of what may be available to biota, and what may be easily remobilized from the sediment. Another informative exercise would be to bring representative samples of these sediments into the laboratory. Relatively simple microcosm experiments would generate data on the actual flux of hydrocarbons out of the sediment and its bioavailability to marine organisms. This information would greatly assist modeling the long-term fate of these compounds in subtidal sediments.

Study #3: Geographic and Temporal Distribution of Dissolved and Particulate Petroleum Hydrocarbons in the Water Column

Summary: This project will analyze volatile aromatic hydrocarbons, TPH by GC and PNA by SIM in water samples already collected at 1,3,5, and 9 depths by a number of groups at "numerous" stations in Prince William Sound, Kenai Fiords and Katmai National Parks. In addition, mussel cages will be deployed at 12 sites in the sound and 18 sites outside the sound to serve as sentinels of water column concentrations of these compounds. Tissue burdens of petroleum compounds will be analyzed in mussels. Additional water samples (including bottom water) will be collected and analyzed as described above at a selected number of sites.

Comments: These parameters need to be measured in water column samples. However, no mention is given in the methods of how or what size of water samples were collected. Due to the low concentrations which would be found in most samples except those taken in the immediate vicinity of the slick, these measurements are very difficult. In order to get really accurate numbers (ie. detectable levels), extremely large volumes (up to many gallons) of water must be collected using clean techniques. In the summary, they speak of determining dissolved and particulate concentrations, yet no mention of this is given in the methods. Due to the high partition coefficients of some of these compounds, it is very important to analyze dissolved and particulate fractions separately. Unless it was clearly specified that all groups had collected water samples in exactly the same way, I would also worry about results being comparable.

Another portion of the water column which seems to have been ignored is the sea surface microlayer. This interface is well known to be a location for locally high concentrations of hydrocarbons. It is also the home of floating eggs and larvae, and a location of photochemical reactions which are likely to alter the chemistry and toxicity of petroleum compounds in this layer.

Use of caged mussels as sentinel organisms is a good idea, but again, evaluation of this portion of the project is hampered by lack of information. How long will the cages be deployed, and at what depths? Hydrocarbon concentrations in mussel tissues tend to be lowest in the late summer just after spawning. Will the same compounds be quantified and mussel tissue and water column samples? How many replicate mussels per cage, and cages per area? There is a large amount of data in the literature on accumulation and depuration of hydrocarbons from caged mussels. Placing caged mussels at so many stations may be unnecessary.

Com.	Topic	Issue	Sug.	Sort
30	3	1230		2

Project #4: Injury to Deep Water (>20 meters) Benthic Infaunal Resources from Petroleum Hydrocarbons

Summary: This study plans to collect benthic samples by Van Veen grab for analysis of community structure at sites (and at the same time) of deep water sediment sampling. Samples will be archived waiting results of sediment analyses, and some undetermined subset would eventually ba analyzed for infaunal species composition, abundance, and biomass. Sediments will also be analyzed using "microbial techniques."

Comments: This study stands out for the lack of information presented. No specifics are given as to the number of grabs per station, nor the level of enumeration to be achieved. The statement about "microbial techniques" is meaningless by itself. Since no information is given about the frequency of sampling it is impossible to say how the results of this study would determine the persistence of injury to benthic resources studied. One of the justifications for this study is that is these species serve as food sources to resource species, and that this study will quantify the extent of contamination of these food resources. Monitoring species composition and biomass will determine if these dietary resources have been destroyed, but unless samples of these organisms are evaluated for hydrocarbon content, it will not be possible to determine the potential for food chain transfer of hydrocarbons from benthic infauna to marine resources.

Once water column concentrations of oil have dissipated. The sediments and infaunal organisms will serve as the long-term source of hydrocarbons to the water column and species resident or migrating through the entire area. Investigation of these processes should not be omitted.

Com.	Topic	Issue	Sug.	Sort
31	2	1240		2

Study #5: Injury to the Air Resource from the Release of Oil-Generated Volatile Organic Compounds

Summary: This study will measure the volatile organic compounds (VOC) concentrations coming off fresh and weathered oil, and model these data into existing air dispersion models and wind vector data to predict what concentrations of VOC would have been over time and space and model toxic exposure probabilities to organisms encountering contaminated air.

Comments: I don't know much about this area, but if the models are accurate they could predict the extent of toxic concentrations in the atmosphere which may have caused injury to any birds and marine mammals which were there at the time. The need for this study to access resource damage does not seem compelling to me. This study would have more utility in predicting atmospheric toxic exposures from future events.

Com.	Topic	Issue	Sug.	Sort
32	3	1250		2

Overall Comments Coastal Habitat Assessment:

Despite the lack of detail in the study descriptions, components of all of these studies are essential to document the extent of oil in the water column and benthos (sediment and organisms) and any immediate changes in populations observed. I would strongly suggest that the number of sites visited could be reduced in favor of more detailed analyses at some of the sites. Continuation of sampling in subsequent years will be essential to determine the long-term impacts, plan remediation strategies, and document recovery. In my opinion, the additional measurements and experiments suggested would help to better

Com.	Topic	Issue	Sug.	Sort
34	3	1100		2

document effects of oil on the habitats and provide information that could be used to model and predict the fate and effects of oil in these areas.

FISH/SHELLFISH INJURY ASSESSMENT

Overall goals:

Each species was evaluated as a separate resource with species selection based on value as an indicator organism or role in major fisheries. For each resource evaluated, abundance and mortality of larvae, juveniles, and adults in oiled and non-oiled areas was assessed. Through the use of the Technical Services Program, tissue concentrations of petroleum hydrocarbons in resource species in some of these studies will also be evaluated.

These studies will be reviewed in groups containing all studies related to a particular species, or studies related to similar species. Each study in the group will be briefly described, followed by comments on the entire group.

Study #1: Injury to Salmon Spawning Areas in Prince William Sound

This portion will visually inspect all known spawning streams in the Sound directly affected by oil, photograph each area and document the extent of oiling including penetration of oil into the substrate. Approximately 100 streams will be surveyed by counting numbers of live and dead salmon by species, location in river, stage of spawning, evidence of prespawning mortality, tide stage and visibility.

Com.	Topic	Issue	Sug.	Sort
35	D	1310		2

Study #2: Injury to Salmon Eggs and Preemergent Fry in Prince William Sound

Forty-six of the streams studied in #1 will be selected for preemergent fry studies. Historical data is available on approximately half of these streams. In each stream 4 zones upstream will be samples for numbers of live and dead eggs and live and dead preemergent fry by species. This will be done 2 times in April and once in autumn.

Com.	Topic	Issue	Sug.	Sort
36	D	1320		2

Study #3: Salmon Coded-Wire Tag Studies in Prince William Sound

Salmon fry or smolt will be tagged prior to release from five hatcheries in the Sound. Two of which received heavy oiling. Marine abundance, survival and harvest of tagged fish will be assessed, as well as the extent of straying of returning salmon into outlying areas.

Com.	Topic	Issue	Sug.	Sort
37	D	1330		2

Study #4: Early Marine Salmon Injury Assessment in Prince William Sound

This study will evaluate some of the tagged fish from Study #3 collected at various points as they migrate through oiled areas for tissue hydrocarbon content and histopathology. Abundance, growth, feeding habits, and behavior of juvenile salmon from both oiled and un-oiled areas will also be assessed. Any fish kills observed will be documented. Pairwise comparison between oiled and control areas will be made for all parameters measured.

Com.	Topic	Issue	Sug.	Sort
38	D	1340		2

Study #7:Injury to Pink/Chum Salmon Spawning Areas Outside Prince William Sound

Numbers and locations and species of live and dead spawning salmon will be determined in at least 4 locations in 109 streams outside Prince William Sound where historical information on fry density is available.

Com.	Topic	Issue	Sug.	Sort
39	0	1370		2

Study #8: Injury to Pink and Chum Salmon Egg and Preemergent Fry in Areas Outside Prince William Sound

Preemergent fry and egg sampling will be done in the fall and spring (Spring, 1990?). Counts of live and dead eggs and fry by species will be done at each of 10 digs at 4 locations in each stream studied. All 109 streams will be assessed for preemergent fry and approximately 80 steams examined for eggs.

Com.	Topic	Issue	Sug.	Sort
40	0	1380		2

Study #9: Early Marine Salmon Injury Assessment for the Kenai Peninsula and Kodiak/Shelikof Strait

This study will repeat many of the measurements made in Study 4 on juvenile salmon in locations more distant from the site of the oil spill, but which were impacted by the slick at a later date.

Com.	Topic	Issue	Sug.	Sort
41	0	1390		2

Comments Studies #1-4:

Together these studies will generate a picture of the how badly the salmon spawning habitat was affected by oil, the impact on eggs and fry, and the success and relative health of this year's crop of released fry and smolt as well as their exposure to petroleum hydrocarbons. Portions of the study should be continued to document re-capture of tagged fish returning from the ocean in subsequent years to quantify any long-term effects of the spill on these species. Again, the number of sites to be studied seems excessive. Certainly a good picture of the effect of oil on spawning salmon and their eggs and fry could be documented with many fewer sites.

Com.	Topic	Issue	Sug.	Sort
42	3	1300		2

Comments Studies #7-9:

These studies repeat in lesser detail some of the work done on salmon species within Prince William Sound. As these fisheries probably were exposed to oil of different concentration and composition from that experienced in the Sound, their study seems justified in the complete assessment of the effects of the spill to fisheries in the area. Once again, the number of sites seems excessive, and to really document effects on these fisheries, some areas should be revisited in subsequent years.

Com.	Topic	Issue	Sug.	Sort
43	3	1300		2

Study #5: Injury to Dolly Varden Char and Cutthroat Trout in Prince William Sound

This study will investigate the effects of the spill on two recreational fisheries species with fairly narrow habitat ranges utilizing streams and lakes which communicate with the Sound. These species migrate annually in and out of overwintering lakes down streams into the estuary to feed, and then migrate back again. Weirs will be placed on four streams to catch and tag individuals from the spring emigration. All fish caught will be counted. Weirs will be placed on two additional oiled and un-oiled rivers to count all

Com.	Topic	Issue	Sug.	Sort
44	0	1350		2

smolting, overwintering and spawning Dolly Varden char and cutthroat trout. Two of these streams have oiled estuaries, two do not. Survival of the tagged fish will be assessed through the capture of tagged fish in the recreational fishery described in Study #6 and recapture in this study (no date given).

Study #10:Injury to Dolly Varden Char and Sockeye Salmon in the Lower Kenai Peninsula

This study basically expands the work done on Dolly Varden char in the Sound as part of Study #5 to four areas in the Lower Kenai Peninsula (2 oiled and 2 control). Sockeye salmon are also found at two of these sites.

Comments: Compared to the salmon studies, this one seems much more manageable. Pairwise comparisons will be made between replicate oiled and un-oiled stream/estuary systems. Although the fate of some of the tagged fish will be assessed as part of the Sport Fishery Harvest Effort (Study #6), it would also make sense to place weirs on the river to document the number of fish (both tagged and untagged) returning to the lakes to overwinter. These fish will have spent the summer feeding in areas impacted by oil, and therefore should best demonstrate any effects. Samples of fish on both the downstream and upstream migration would be taken for hydrocarbon analysis and histopathology. Measurements should also be taken of length and weight to document any sublethal effects of oil on growth during the summer feeding period.

Com.	Topic	Issue	Sug.	Sort
45	3	1400		2

Study #6: Prince William Sound and Gulf of Alaska Sport Fishery Harvest and Effort

This study will survey the sport fishery harvest of salmon, rockfish, halibut, cutthroat trout, and Dolly Varden char by interviewing anglers from 7 locations from May 1 through September 15. Information on the sport catch from anglers using sea planes will be obtained through logbooks maintained by fishing guides. Some fish caught will be examined for (visual I presume) signs of oil contamination. Although not stated, I would assume the study would document the location of capture of tagged fish.

Comments: By comparison with historical data on the sport fishery catch, this information should determine whether or not in the first season post spill sport fisheries have been affected. This project should generate information directly applicable to the impact of the spill on sport fisheries, should relatively cheaply gather information on fish abundance independent to that collected directly as part of this study, and by involving the sport fishing populace should generate public enthusiasm for the restoration efforts.

Com.	Topic	Issue	Sug.	Sort
46	R	1360		2

Study #11: Injury to Prince William Sound Herring

Spawn deposition surveys will be conducted in up to 160 randomly selected transects through areas of herring spawn by divers and non-size selective harvesting of spawning adults. This information will be used to estimate herring abundance, egg densities, spawning bed dimensions and fecundity. The ratio of live to dead herring eggs in oiled and non-oiled areas will be assessed every four days until hatching. Eggs will be collected for hydrocarbon analysis. 180 batches of spawn collected from oiled and non-oiled

Com.	Topic	Issue	Sug.	Sort
47	D	1410		2

areas will be reared in the laboratory where survival of eggs, larvae, size, weight and presence of visible abnormalities will be assessed. Data will be compared with historical information.

Study #12: Injury Assessment to Kodiak and Alaska Peninsula Herring

This study appears to repeat some of the work done in Study #12 in two other areas. Laboratory exposures will be conducted to experimentally determine the lethal and sublethal effects of oil on herring eggs, larvae and adults. Data collected from the field will be compared with historical information.

Comments on Studies #11 & 12: Studies #11 & 12 are aimed primarily at determining the effect of oil on fecundity and survival of herring in and outside of the Sound. Study #11 appears to be a comprehensive approach to assessing abundance and reproductive success in this species. 160 transects seems excessive, but no information is given on the size of the area to be surveyed. Study #12 is extremely vague about what will actually be done, but it appears that different kinds of laboratory investigations will be conducted in these two studies. Better integration is clearly warranted. The effects of water soluble fractions of oil on fish larvae have been well studied by others. Repeating these as part of this study does not seem appropriate.

Com.	Topic	Issue	Sug.	Sort
48	3	1410		2

Com.	Topic	Issue	Sug.	Sort
49	3	1420		2

Study #17: Injury to Prince William Sound Rockfish

This study will assess rockfish populations at 10 reefs in the Sound (6 oiled, 4 non-oiled). Fish will be collected with long-line gear in May and again in August and tissues from fish collected for hydrocarbon analysis. Live fish collected with hook and line. Dead fish on the surface will also be collected. Dead fish will be necropsied, and live fish sampled for hydrocarbon content. The number and distribution of rockfish collected will be compared with historical surveys.

Study #23: Injury to Rockfish, Halibut, and Lingcod Along the Lower Kenai Peninsula

This study will essentially repeat that described in study #17 at several locations in oiled and non-oiled water in and near Resurrection Bay. The species list investigated will be expanded to include halibut and lingcod. Sites selection will be based on areas known to have supported sport fisheries in these species in 1988.

Comments Studies #17 & 23: These fish occupy a habitat not previously well studied, so their examination is justified. Although not specified, I would assume numbers caught during a standardized fishing effort as well as size and size will be quantified. Fish should also be examined for parasites, oiled stomach contents, and general condition. Efforts should be made to determine the age of the fish caught (otolith analysis). This will determine what proportion of the population is being counted and demonstrate if any age-dependant effects are being observed. Organoleptic testing (taste tests for tainting) for hydrocarbons is proposed in this study. This makes sense as these fish are consumed by humans, and oily taste would lessen their value. Why has organoleptic testing been omitted from the other studies? Regardless, standard hydrocarbon analysis should also be done on these fish. Hydrocarbon

Com.	Topic	Issue	Sug.	Sort
50	3	1470		2

Com.	Topic	Issue	Sug.	Sort
51	3	1480		2

analysis methods used on tissues taken in any of these studies should be comparable.

Study #13: Injury to Prince William Sound Clams

This study will assess populations of clams (cockle, littleneck, clam, and butter clam) at three sites each which received no, moderate and heavy oil contamination. At each site three transects will be set up and clams sampled at seven tidal heights along each transect. Live and recently dead specimens will be collected, identified and counted. At each site an additional transect will be set up to determine numbers of dead shells deposited on the shore. For each species three samples will be collected per transect for hydrocarbon analysis and histopathology. Growth and age estimations will be made on 100 littlenecks collected from each transect at each site. One of the heavily oiled sites will be monitored biweekly from May through September. If sudden changes in the proportion of dead clams appear, all other sites will be revisited at that time. If this does not occur, all sites will be revisited once during the fall. The repeat sampling will be used to monitor growth and relative abundance in young-of-the-year clams.

Study #21: Injury to Clams Outside Prince William Sound

This study repeats the analyses in Study #13 at ten locations in Resurrection Bay, lower Cook Inlet, Kodiak Island/Shelikof Strait, and the Alaska Peninsula. At each location an oiled and a nearby non-oiled beach will be selected. In addition to the species enumerated above, the razor clam will also be investigated. Five of the locations (which ones is not clear) will be revisited to document changes in growth rates and recruitment between oiled and non-oiled beaches.

Study #16: Prince William Sound Oysters

Mortality, growth, condition and hydrocarbon content will be followed monthly from April-September in marked individuals from three oyster farms in the Sound. One was in the spill, one near it, and I presume one was relatively unaffected. Parameters measured will be evaluated with respect to degree of oiling received and historical data from pre-spill years.

Study #25: Injury to Scallop Resources in Kodiak Waters

Mortality, growth, and condition factors of wild pink, spiny, and weathervane scallops at one oiled and one non-oiled site in the Kodiak area will be monitored monthly. Tissue samples for hydrocarbon analysis will be collected every over month following the spill through October.

Comments on Studies #13,21,16,25: The clam studies (#13 & 21) appear to be well designed and should unambiguously document the short-term effects of oil on mortality and growth in 4 different bivalve populations. However, it is not clear from the project description how growth will be documented, nor how examination of growth parameters and the abundance of bivalves two to four years old will give information about temporal changes in growth rates and recruitment between oiled and non-oiled beaches. Condition (although not stated I assume they are referring to a body condition index(volume of soft tissue to total volume of organism)) should also be measured on a subset of

Com.	Topic	Issue	Sug.	Sort
52	3	1430		2

Com.	Topic	Issue	Sug.	Sort
53	3	1510		2

individuals from the clam studies to provide information comparable to that obtained in the other bivalve studies.

Will the bivalves be allowed to depurate (void) their gut contents prior to analysis for hydrocarbons? The presence of hydrocarbons in material in the gut can dramatically alter whole body levels analyzed. There are good arguments for and against depuration. However, the same approach should be used in all studies if comparable information is to be obtained.

Using marked individual the oyster study (#16) should give better information about growth and age dependent mortality. However, care should be taken to adequately assess effects on oysters of different ages (younger ones may be more sensitive). The scallop study (#25) is very poorly defined. One of the justifications for conducting this work is the cooperative mariculture feasibility and demonstration project at Kodiak, yet no further mention is given of assessing scallops from the projects. Following only one oiled and non-oiled site monthly over time seems insufficient. A better design would utilize multiple oiled and non-oiled sites visited less frequently if necessary. Also no mention is given as to how the scallops will be sampled to ensure adequate representation of the area. How will age-dependent mortality be assessed? Considering the relatively large budget assigned to this particular project ($2.2 million), a better study design is certainly warranted.

Com.	Topic	Issue	Sug.	Sort
54	3	1460		2

Com.	Topic	Issue	Sug.	Sort
55	3	1550		2

Study #14: Injury to Prince William Sound Crabs

Levels of hydrocarbons will be measured in Dungeness crab samples collected immediately after the spill and again in the autumn prior to egg hatch at eight sites (4 each oiled and control). Fecundity and egg condition will be determined from examination of the adults. Ovigerous crabs will be held in the laboratory until larval release for estimation of larval production. Similar measurements will be made on brown king crab collected in August. Samples of both species will also be taken for histopathology. Observations will be correlated with leveled of hydrocarbons in the sediments at the location of crab collection as determined in the air-water studies. Incidence of leg loss and abnormalities in shells of newly molted crabs will also be assessed.

Study #22: Injury to Crabs Outside Prince William Sound

This study will repeat the fall sampling on Dungeness crab described in Study #14 at some number of oiled and non-oiled sites in Cook Inlet and near Kodiak Island.

Comments on Studies #14 & 22: Study #14 is very well designed. Comparing hydrocarbon levels in these crabs just post-spill and just prior to spawning will give information about speed of depuration from this species as well as short term effects on the adult and on reproductive success. Since female crabs carry eggs on their pleiopods, adults, eggs and larvae can be examined relatively easily in this species. I would suggest that hydrocarbon content of eggs and larvae also be determined. At relatively little additional cost, this will provide useful information to estimate impacts on larvae (the effects of oil on a number of crab larvae have been well documented) as well as provide more information on potential food chain transfer of hydrocarbons.

Com.	Topic	Issue	Sug.	Sort
56	3	1440		2

Study #22 is very poorly described. Although investigating effects on crab outside the Sound is important, from the description provided in study #22 it's impossible to tell what they are going to do. Since crabs live in intimate content with the sediment and scavenge for food, they should be good long-term indicators of oil remaining in the sediments of these areas. Components of this study should definitely be continued in subsequent years.

Com.	Topic	Issue	Sug.	Sort
57	2	520		2

Study #15: Injury to Prince William Sound Spot Shrimp

Spot shrimp will be collected from oiled (Unakwik Inlet, Port Wells, Culross Passage) and non-oiled (adjacent to Eleanor, Knight, and Green Island) areas. Catch (in up to 264 pots) will be enumerated by number, weight, size, sexual stage, and fecundity for each species. Samples will be taken for hydrocarbon analysis. A stratified sampling plan by depth and location within oiled areas will allow statistical comparisons between relative abundance, fecundity, stage of egg development, size frequency distribution, sex ratios, species catch composition, and hydrocarbon content to be made.

Comments: This study appears to be well designed. From the information given it's impossible to tell if the sample size is appropriate. If possible, egg hydrocarbon content and survival should be assessed.

Com.	Topic	Issue	Sug.	Sort
58	3	1450		2

Study #18: Prince William Sound Trawl Assessment

This study will assess the bottom fishery within the Sound. Surveys will be conducted from Mid-May to mid-June and again in August enumerating species abundance and collecting otoliths for age determination in primary groundfish species. These surveys will document the abundance of all species of groundfish caught and age class composition for primary species. At eight locations (4 oiled, 4 clean), tissue and organ samples of fish and shellfish will be collected for hydrocarbon analysis and physical injuries, and stomach analysis for tar balls in ground fish.

Study #24: Shellfish and Groundfish Trawl Assessment Outside Prince William Sound

This study will conduct parallel surveys to those conducted in Study #18 in June and August in lower Cook Inlet (Kachemak and Kamishak Bays), bays along the Alaska Peninsula, and coastal waters of the Aleutian Islands. Species abundance and age composition will be determined as described above. Stomach, muscle, liver, and bile samples will be collected and analyzed for indication of exposure to oil and potential reproductive damage.

Comments on Studies #18 & 24: The post-spill survey should determine any immediate impacts of oil on the fisheries of all these species. The fall survey should provide information on missing year classes, and provide a baseline for future impairment of these stocks due to longer-termed effects of the oil. Hydrocarbon levels in tissue would indicate any human risk from consuming these species. There appears to be some discrepancies between the methodology to be used between the two studies. Stomach contents will be analyzed in #18, but not in #24. Study 24 states that it will analyze bile for the presence of PAH metabolites. This is an excellent idea because these species can rapidly metabolize petroleum hydrocarbons. Therefore tissue levels of unmetabolized PNA would not be appreciable unless the fish were

Com.	Topic	Issue	Sug.	Sort
59	3	1480		2

Com.	Topic	Issue	Sug.	Sort
60	3	1540		2

still being exposed to hydrocarbons. No mention of bile analysis is given in study #18. "Biochemical analyses" will be used to assess reproductive damage in the fish caught in study #24. These methods should be clarified. Due to my knowledge there are no "standard" biochemical analyses to assess reproductive damage. Regardless, the same methodologies should be utilized in all fish studies.

Study #19: Injury to Larval Fish in Prince William Sound

Potential damage to larvae in the water column will be assessed in this study. According the draft report, there is virtually no historical data on larval distribution or abundance in Prince William Sound. Larvae will be collected using Tucker trawl nets with 0.5 and 1.0 mm mesh sizes and the MOCKNESS multiple open and closing net system once per month from March through October. Larval densities will be recorded. Although not explicitly mentioned, it appears that for some species, larval size and weight will be recorded.

Comments: This study should generate very useful information about larval resources in the Sound. However, several important factors were either not mentioned or were left out. No specifics are given as to the number of trawls in oil and un-oiled areas or the depths at which larval collections will be made. Abundant or important larvae should be examined for physical deformities, and hydrocarbon content. Nowhere in the entire plan of study have I seen any reference to enumeration of phytoplankton or zooplankton abundance or species distribution. In addition to fish larvae, zooplankton caught in these nets should be enumerated. These species serve are food for many of the larvae, and have been shown to be sensitive to oil. Running small meshed next behind the nets already being towed in this study would also allow enumeration of phytoplankton. Again, for little additional cost another component of the food chain could be assessed in this study.

Com.	Topic	Issue	Sug.	Sort
161	3	1490		2

Study #20: Undersea Observations

Remotely operated vehicles (ROVs) will be used to visually assess the extent of submerged sediment oiling in up to 1,500 m depth in Prince William Sound and the northwestern Gulf of Alaska. These observations will support designation of paired oiled and un-oiled areas for the trawl surveys.

Comments: The utility of using ROVs to locate oiled and un-oiled deep water sites in support of the fisheries surveys is well justified. Actual proof of oiled sediments will be based on the sediment surveys conducted in other sections. Sixty days of ROV time are requested. This seems excessive if they are really being used primarily to support these other studies and not merely to photograph the entire seafloor in Prince William Sound and the northwestern Gulf of Alaska. Documentation of how ROV use will be coordinated with the other studies it is to support should be presented.

Com.	Topic	Issue	Sug.	Sort
62	1	1500		2

Study #26: Injury to Impacts on Sea Urchins off Kodiak Island

Urchins from four oiled and four non-oiled areas off Kodiak Island will be examined. At each site five transects will be surveyed at high tide in September and November during the egg maturation period. Transects will be picked so that at least three traverse kelp beds (prime urchin habitat). At

one meter intervals from mean high water to a depth of 20 m and out to a distance of 3 m of either side of the transect, data will be collected on the numbers of live vs. dead and oiled vs non-oiled kelp. Every urchin encountered will be assessed for viability, sex, diameter and position. Along each transect a random sample of ten mature females will be assessed for roe weight as a proportion of total weight and size. At each sample location, roe from ten random individuals will be taken for histological examination and three random composite samples of ovaries collected for hydrocarbon analysis. In addition, twenty live urchins will be shipped to the laboratory for bioassay of toxicity of oil to urchin larvae.

Comments: Compared to most others, this study was very clearly described. The data collected should give valuable information on direct mortality of adults, reproductive effects on adults, eggs pathology, viability of larvae, and success of young of the year urchins. The hydrocarbon analysis of roe will also help to quantify exposure and help to assess risk of human consumption. Noting the presence of alive and dead and oil and un-oiled kelp will not along help to assess exposure to the urchins, but document direct impact on another important resource, the kelp itself. Assessment of effects on coastal and submerged vegetation and micro- and macroalgae is largely absent from the study plan. In addition to visually noting the presence of oil, samples of kelp should be taken for hydrocarbon analysis.

Com.	Topic	Issue	Sug.	Sort
63	3	1560		2

TECHNICAL SERVICES

Study #1: Hydrocarbon Analytical Support Services and Analysis of Distribution and Weathering of Spilled Oil

This section and the details presented in Appendix A describe the framework under which hydrocarbon analysis will be conducted.

Comments: This component is the most critical of the entire study, as accurate and comparable determination of the quantity and composition of petroleum hydrocarbons in all samples is essential to tying any effects measured to the spill, predicting future effects on biota, and monitoring restoration of the environment through either natural processes or human intervention. This section and the supporting documents in Appendix A indicate that the hydrocarbon analysis will be conducted in an appropriate manner. However, since the QA/QC plan was signed in many cases after many of the samples were collected for this study, one has to wonder whether or not all the steps to ensure the quality and comparability of the analytical measurements will or has been adequately carried out. Results from intercalibration exercises and data on field and analytical blanks should be reported in the documents resulting from this study. The formation of the Analytical Chemistry Group to oversee all these efforts is an excellent idea.

Com	Topic	Issue	Sug.	Sort
64	3	2010		2

Chemical analysis should be comparable between the different studies. Some studies neglected to mention what chemistry would be done, some indicated analyses not mentioned in others. Only in one investigation was the analysis of PNA metabolites discussed. Metabolites should be assessed in all fish sampled for routine hydrocarbon analyses. In the Amoco Cadiz oil spill dibenzothiophenes (sulfur containing aromatic hydrocarbons) were found to be a persistent indicator of oil contamination whereas levels of PNAs were sometimes high even in control samples due to the widespread distribution of

these compounds in the biosphere. Analysis for dibenzothiophenes should be included in the study plan.

Study #2: Histopathology: Examination of Abnormalities in Tissues from Birds, Mammals, Finfish, and Shellfish Exposed to the Spilled Oil

This section and the details presented in Appendix B describe the framework under which examine of tissue samples for histopathology will be conducted.

Comments: Histopathological analysis can give very clear and comparable evidence of the effects of oil on aquatic organisms. The description of the methods and the QA/AC plans sounds adequate, although this is not my area of expertise. However, no mention of exactly how preserved tissues will be sampled is given. More effort should be placed on documenting histopathological responses which may lead to long-term affects such as genetic abnormalities. I would like to note that lack to overt histopathology should not necessarily be taken to mean that the organisms were unaffected.

Com.	Topic	Issue	Sug.	Sort
65	3	2020		2

Study #3: Mapping of Damage Assessment Data and Information

All data will be computerized and maps will be prepared to document the extent of oiling in the area, upon which effects noted can be superimposed.

Comments: The initial maps documenting the extent of oiling of water and shoreline over the entire region will be prepared by June 19, 1989. These will be useful to in development of the Coastal Habitat, and fish and Shellfish assessment studies. Adapting a computerized format to collate and display the information generated by this study is critical to proper evaluation of results and the early identification of trends and areas which will require further study. The initial maps should have been included in the Study Plan. Furthermore, a time-table for generation of subsequent maps and their distribution should be included in the plan.

Com.	Topic	Issue	Sug.	Sort
66	3	2080		2

PART II DEVELOPMENT OF THE RESTORATION PLANS

Comments: Basically all this section says is that a restoration plan will be developed for $500,000. No information is given about the types of strategies which may be considered. It appears that little though has been given to how to approach restoration.

Com.	Topic	Issue	Sug.	Sort
67	2	2110		2

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