

RFWG
II

RESTORATION TEAM MEETING
February 19, 1992
9:00 a.m.

Attendees:

Byron Morris
Art Weiner
Mark Brodersen
Mark Fraker
Ken Rice
Marty Rutherford
Dave Gibbons
Cordell Roy
Carol Gorbics
Pam Bergmann
Jerome Montague
Sandy Rabinowitch
Bob Spies
Tim Steele
Joe Sullivan
Mark Willette
James Hasbrouck
Brian Bue
Don Calkins
Jim Aro

The following recommendations were proposed by Bob Spies, Chief Scientist:

CLOSEOUT

AW1 - recommends as proposed; \$15K

ST1A - recommends that it be funded as proposed; recommends deletion of 1990 and 1991 meiofaunal samples; \$73.3K

ST1B - recommends as proposed; \$16K

ST2A - suggests deleting the analysis of eelgrass habitat in 1991 saving \$30K; \$95K

ST2B - need to look at interpretation of data; would like to see 1990 data reinterpreted; need a final report; PIs need to address concerns of peer reviewers

ST3A - recommends it be funded as proposed; \$29.3K

ST3B - recommends it be funded as proposed; \$46.7K

ST6 - recommends it be funded as proposed; \$15K

ST7 - if analysis is done and the data is available, it should not cost this much; recommends \$45K of \$66K proposed

CH1A - \$2 million is the lowest option; the options provided by the end of the week will analyze what the trade-offs are

CH1B - seems to be high; however, recommends fund as proposed; \$40K

MM1 - recommends it not be funded as field work was completed in 1989

MM2 - has not had a chance to review if the money is justified; seems like alot of money

MM6 - seems like alot of money to close this out; no recommendation yet; should have one by early next week

Arch1 - Forest Service will give up \$20K; \$206K is the minimum; no recommendation yet

FS1 - no recommendation yet

FS2 - no recommendation yet

FS3 - no recommendation yet

FS4A - delete proposed analyses of samples collected during 1990 and 1991; delete temperature experiment; no recommendation yet

FS4B - has not had a chance to review; may have to exempt himself due to conflict of interest; his company is doing part of the work on this

FS5 - recommends as proposed; \$18K

FS11 - some cost reductions are possible; does not have a recommendation

FS13 - cost seems excessive; \$35K of \$93K recommended

B2 - no recommendation at this time

B3 - most data has been analyzed; recommends \$30K of \$125K but will review this again with Carol's recommendation

B4 - most data has been analyzed; recommends \$35K of \$75K

B6 - recommends as proposed; \$18K

B7 - recommends as proposed; \$5K

B8 - recommends as proposed; \$5K

B9 - recommends as proposed; \$18K

B11 - recommends as proposed; \$20K

B12 - unsure of recommendation at this time

CONTINUATION

TS1 - provides support to so many other projects; recommends fund as proposed; \$950K

TS3 - no recommendation at this time; probably will be substantially lower

ST4 - should be coordinated with other subtidal recovery monitoring efforts; a final report should be produced; tentatively recommends \$10K of \$160K

ST5 - a final report is needed to synthesize the available damage assessment data; recommends \$20K of \$80K

ST8 - recommends as proposed; \$175K

TM3 - recommends deferring further field work; need a final report on injury; cost not determined at this point; will record the opposing view

FS27 - defer to Trustee Council for policy decision; no recommendation

FS28 - defer to Trustee Council for policy decision; no recommendation

FS30 - defer to Trustee Council for policy decision; no recommendation

Meeting adjourned at 11:45 and will reconvene at 12:45; Restoration Team remained to discuss policy questions

Dave - attendance at Restoration Team meetings was discussed; it was suggested that meetings be limited to the Restoration Team and not include PIs

Spies - he felt that inclusion of the PIs was somewhat confrontational; he would like to take some time this afternoon to discuss with the Restoration Team the philosophy of restoration monitoring

Mark - PI participation should be limited to avoid confrontations

Meeting reconvened at 1:15

Mark - he suggested delaying the February 27th meeting so that a

more credible product could be provided

Bob - he related his philosophical approach; obviously there are alot of samples to analyze; it is time to take a break and only do the things that really need to be done; there are very few things that need doing every single year; next year should be used to construct a really sensible restoration monitoring plan; he has developed some ideas for field work in 1992 on the following:

1. Murres - it makes sense to do something on some of the colonies this coming season, such as the Barrens, Pulae Bay and Nord Island
2. Pink Salmon - some things need to be hashed out with the PIs and Peer Reviewers
3. Intertidal zone - this should be looked at; injury is continuing; a proposal is expected from the University of Alaska for \$900K
4. Oiled mussel beds

RESTORATION IMPLEMENTATION

R20 - would not recommend

R52 - Trustee Council needs to make a policy call

R53 - Trustee Council needs to make a policy call

R58 - Trustee Council needs to make a policy call

R59 - Trustee Council needs to make a policy call

R73 - need to consider as restoration monitoring; need to defer

R106 - Trustee Council needs to make a policy call

R118 - Trustee Council needs to make a policy call

Dave - he proposes determining where the Restoration Team agrees with Bob and where we need to come back with better figures, then having a discussion with Bob and trying to move forward

		Spies yes/no cost	RT yes/no cost	Comments
DAMAGE ASSESSMENT CLOSEOUT				
AW1	Surface Oil (15K)	yes 15K	agree	
ST1A	Subtidal (100K)	yes 87.3K	agree	
ST1B	Subtidal (16K)	yes 16K	agree	
ST2A	Shallow Benthic (125K)	yes-mod 95K	agree	Do not sort <u>Laminaria</u> PI needs to revise project report with peer review and comment. May approve additional funds (up to 70K) depending on report results
ST2B	Deep water Benthos (80K)	yes-mod 10K	agree	
ST3A	Hydrocarbons (29.3K)	yes 29.3K	agree	
ST3B	Subtidal Hydrocarbon (46.7K)	yes 46.7	agree	
ST6	Rockfish (15K)	yes 15K	agree	
ST7	Demersal Fishes (66.1K)	yes-mod 47.5K	agree	
CH1A	Coastal Habitat (2950K)	yes-mod ?	yes-mod 2000K	RT revisit
CH1B	Coastal Habitat (40K)	yes 40K	agree	
MM1	Humpback (15K)	no 0-\$	agree	
MM2	Killer Whales (35K)	yes-mod 25K	agree	
MM6	Sea Otters (200K)	yes-mod 170K	agree	
Arch1	Archaeology (226.85K)	no recommend.	yes-mod 207K	
FS1	Salmon Spawning (65.6K)	yes-mod 55K	agree	
FS2	Pre-emergent Fry (36.7K)	yes-mod 26K	agree	
FS3	Coded Wire Tags (118.6)	yes-mod 108K	agree	
FS4A	Early M. Salmon (155.4K)	yes-mod 125K	agree	
FS4B	Juvenile Pinks	yes-mod 100K	agree	
FS5	Dolly Varden (18K)	yes 18K	agree	
FS11	Herring	yes-mod	yes-mod 265K?	
FS13	Clams (93.1K)	yes-mod 35K	agree?	Interim report on clam aging for peer review and if injury then fund remaining \$
B2	Boats (60K)	yes-mod 40K	agree	
B3	Murres (125K)	yes-mod 60K	agree	
B4	Eagles (75K)	yes-mod 47K	agree	
B6	Marbled Murrelets (18K)	yes 18K	agree	
B7	Storm Petrels (5K)	yes 5K	agree	
B8	Kittiwakes (5K)	yes 5K	agree	
B9	Pigeon Guillemot (18K)	yes 18K	agree	
B11	Harlequins (20K)	yes 20K	agree	

B12	Shorebirds (18K)	yes-mod 15K	agree
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		Spies yes/no cost	RT yes/no cost	Comments
RECOVERY MONITORING				
R5	Brown Bear (60K)	no		
R6	Sea Otter (687K)	no		
R11	Murre (571K)	yes-mod 200K	?	
R13	Boat Surveys (250K)	no		
R17	Black Oystercatcher (59K)	no		
R60C	Pink Salmon Egg/Fry	yes-mod 350K	agree	Includes component to determine causes of mortality. Budget will be modified after synthesis meeting if appropriate
R82	Killer Whale (177.9K)	no recommend. policy		
R90	Dolly Varden (264.6K)	no		
R101	Subtidal (985K)	?		
R102	Coastal Habitat (700K)	?	no? \$-0?	Defer final decisions pending review of new proposals and peer review
TECHNICAL SUPPORT				
R103	Oiled Mussels (750K) (moved to management action)	yes-mod 750K	agree	Consider river otters, black oystercatchers
R92	GIS (300K)	no recommend.		
MANAGEMENT ACTION				
R20	Bald Eagle (225K)	no		
R52	Rockfish (232.5K)	policy		
R53	Kenai River Reds (634.4K)	policy		

R58	Herring (552.2K)	no
R59	Genetic Stock Struct. (290K)	policy
R60A&B	Pink Salmon (1654.1K)	yes-mod 1300K
R73	Harbor Seal (210.3K)	no
R104	Archaeology (345K)	policy
R106	Dolly Varden/cutthroat (287.2K)	policy
R118	Public Education (180K)	no recommend.

	Spies yes/no cost	RT yes/no cost	Comments
DAMAGE ASSESSMENT CONTINUATION			
TS1 Hydrocarbon (950K)	yes 950K	agree 950K	Dependent upon approved program; 75K FWS and 250K ADNR
TS3 GIS (400K)	yes-mod	agree 325K	
ST4 Fate and Tox (160K)	yes-mod 43K	agree	Final report on data analysis to date; may approve addi- tional funding up to 60K de- pending on results
ST5 Shrimp (80.6K)	yes-mod 20K	agree 20K	
ST8 Mussels (175K)	yes 175K	agree	secondary
TM3 R. Otter & Mink (184K)	yes-mod 60K	agree	
FS27 Sockeye Salmon (524.8K)	defer		
	policy decision		
FS28 Run Reconstruct (474.6K)	defer		
	policy decision by 2/21		
FS30 Database Management (178.7K)	defer		
	policy decision		

RESTORATION PROJECTS

Manipulation Enhancement

*high priority

R37	Paulson Creek
R41	Otter Creek
R45	Montague Island Chum

R105 PWS Restoration * USDA
R113 Red Lake * ADF&G
R114 Red Lake Fishery * ADF&G
R115 Coghill Lake * USDA
R116 PWS Fry
R117 Sport Fish (Pipeline) * ADF&G

Habitat Acquisition

R15 Marbled Murrelet * USDA
R47 Stream Habitat
R71 Harlequin * ADF&G
R96 ID Habitats * USDA

RESTORATION

1. Technical Support
R92
2. Recovery Monitoring
R5
R6 (A-D)
R11
R13
R17
R60C
R82 (A)
R90
R95 (A)
R101
R102
3. Implementation Planning
R45
R105
4. Manipulation/Enhancement
R37
R41
R113
R114
R115
R116
R117
5. Habitat Acquisition/Planning
R15
R47
R95 (B)
R71
R96
R6 (E)
R82 (B)

6. Management Actions

R20
R52
R53
R58
R103
R59
R60 A&B
R73
R104
R106

	RT yes/no	vote	cost	savings
Implementation Planning				
R45 Montague Island (chum) USDA	no	(:2)	0	25.5K
R105 PWS Restoration (ADF&G/USDA)	yes	(6:0)	300K	134K
Habitat				
R15 Marbled Murrelets (USDI/USDA)	yes	(6:0)	359K	0
R47 Stream Habitat (ADF&G)	yes	(6:0)	346K	25K
R95 River Otters (ADF&G)	defer p.m.		139K	
R71 Harlequins (ADF&G/USFWS)	yes	(5:1)	370K	37K
R96 ID Habitats (Multi)	no	(:2)	0	600K
R6E Sea Otters (USFWS)	no	(:2)	0	58.5K
R82B Killer Whales (NOAA)	no	(:2)	0	56.3K
Manipulation				
R37 Paulson (USDA)	no	(:2)	0	9.4K
R41 Otter Creek (USDA)	no	(:2)	0	44.6K
R113 Red Lake (egg take) (ADF&G)	yes	(5:1)	54.2K	0
R114 Red Lake (fishery) (ADF&G)	no	(:2)	0	162K
R115 Coghill Lake (USDA/ADF&G)	no	(:2)	0	184.1K
R116 PWS Pink Fry (ADF&G)	no	(:2)	0	636K
R117 Sport Fish (ADF&G) (Ft. Rich. Hatchery)	no	(:2)	0	1700K

		RT yes/no	vote	cost	savings
RECOVERY MONITORING					
R5	Brown Bear (60K)	no	(:2)	0	60K
R6	Sea Otter (687K) (628.5K)	no	(:2)	0	628.5K
R11	Murre (571K)	yes	(6:0)	200K	371K
R13	Boat Surveys (250K)	no	(:2)	0	250K
R17	Black Oystercatcher (59K)	no	(:2)	0	59K
R60C	Pink Salmon Egg/Fry (199.2K)	yes	(6:0)	350K	0
R82	Killer Whale (119.4K)	no	(:2)	0	119.4K
R90	Dolly Varden (264.6K) (190K)	no	(:2)	0	246.6K
R101	Subtidal (985K)	no	(:2)	0	985K
R102	Coastal Habitat (700K)	no	(:2)	0	700K
TECHNICAL SUPPORT					
R103	Oiled Mussels (750K)	yes	(6:0)	750K	0
R92	GIS (300K)	yes-mod 100K place- holder			200K
MANAGEMENT ACTION					
R20	Bald Eagle (225K)	no	(:2)	0	225K
R52	Rockfish (232.5K)	defer			
R53	Kenai River Reds (634.4K)	defer			
R58	Herring (552.2K) (move salary and boat charter to continuation with final report date)	no		0	552.2
R59	Genetic Stock Struct. (290K)	defer			
R60A&B	Pink Salmon (1654.1K)	yes	(6:0)	1300K	354.1K
R73	Harbor Seal (210.3K)	no	(:2)	0	210.3K
R104	Archaeology (210K monitoring)	no	(:2)	0	210K
	(135K site stewardship)	yes	(6:0)	135K	0
R106	Dolly Varden/cutthroat (287.2K)	defer			
R118	Public Education (180K)	yes	(5:1)	180K	0

RESTORATION TEAM MEETING
February 20, 1992
9:30 a.m.

Attendees:

Byron Morris
Mark Brodersen
Cordell Roy
Ken Rice
Marty Rutherford
Dave Gibbons
Carol Gorbics
Pam Bergmann
Jerome Montague
Bob Spies
Tim Steele
Ray Thompson
Stan Senner
Sandy Rabinowitch
Mark Fraker
Joe Sullivan

Proposals discussed on February 19, 1992 were revisited.

PROPOSED CRITERIA FOR RESTORATION IMPLEMENTATION**I. Selection of Injured Resources and Services:**

- A. Evidence of consequential injury
- B. Adequacy and rate of natural recovery

II. Selection of Restoration Implementation Options:

- A. The effects of any other actual or planned response and/or restoration actions
- B. Potential to improve the rate and/or degree of recovery
- C. Technical feasibility
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits
- F. Cost effectiveness
- G. Consistency with applicable federal and state laws and policies
- H. Potential for additional injury resulting from proposed actions, including long-term and indirect impacts
- I. Degree to which proposed action enhances the resource or service
- J. Degree to which proposed actions benefit more than one resource or service
- K. Importance of starting the project within the next year

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DAMAGE ASSESSMENT CLOSEOUT

Project No.- Air/Water #1

Project Title- Surface Oil Maps

Proposed Cost- \$15,000

Injury- Supports key studies documenting population declines, eg. sea otters

Recovery- N.A.

Prospects for Restoration- N.A.

Work Needed for Project Completion- Completion of final maps documenting oil on water with report.

Unresolved Issues- None

Recommendation- Full Funding

Alternative View-

Recommended Cost- \$15,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #1A

Project Title- Injury to Subtidal Sediments

Proposed Cost- \$100,300

Injury- Supports key studies documenting population declines, eg. subtidal organisms

Recovery- N.A.

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Data analysis and report

Unresolved Issues- None

Recommendation- Defer analysis of 1991 meiofauna samples until next year pending results of analysis of 1989 and 1990 samples.

Alternative View-

Recommended Cost- \$73,300

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #1B

Project Title- Hydrocarbon Mineralization

Proposed Cost- \$16,000

Injury- Provides understanding of fate of oil

Recovery- Helps understand the rate at which oil disappears

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Analyze data and write final report

Unresolved Issues- None

Recommendation- Full Funding

Alternative View-

Recommended Cost- \$16,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #2A

Project Title- Shallow Benthic Communities

Proposed Cost- \$125,000

Injury- Reductions of some populations especially in and near eel grass beds. Data is available from 1990 only.

Recovery- Unknown

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Finish analysis of 1991 samples for *Laminaria* and eelgrass habitats, analyze data and write final report

Unresolved Issues- None

Recommendation- Limit analysis of remaining 1991 samples to eelgrass habitat. Savings of 30K.

Alternative View- Some indications of injury in this habitat in 1990 so important to obtain a second year of data.

Recommended Cost- \$95,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #2B

Project Title- Deep Water Benthos

Proposed Cost- \$80,000

Injury- Some differences between oiled and unoiled bays, however role of natural factors in producing differences is unclear.

Recovery- Uncertain

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Reexamination of 1990 data and revision of the 1991 Progress Report.

Unresolved Issues- Nature of injury

Recommendation- Principle Investigator needs to revise 1991 progress report per peer reviewer comment. All 1991 sample analysis should be deferred until it is clear there was an injury in 1990.

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #3A

Project Title- Bioavailability and Transport of Hydrocarbons in the Near Shore Water Column

Proposed Cost- \$29,300

Injury- Supports key studies documenting effects on early life history stages of fish and also relates to the adult survival of pink salmon.

Recovery- Helps understand the rate at which oil is leaving the water.

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Retrieve caged mussels still deployed in Prince William Sound. Complete analysis of 1991 and 1992 samples. Analyze 1991 and 1992 data. Write final report.

Unresolved Issues- None

Recommendation- Complete as proposed

Alternative View-

Recommended Cost- \$29,300

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #3B

Project Title- Bioavailability and Transport of Hydrocarbons in the Near Shore Water Column

Proposed Cost- \$46,700

Injury- Supports key studies documenting effects on early life history stages of fish and also relates to the adult survival of pink salmon.

Recovery- Helps understand the rate at which oil is being transported off beaches into deep water.

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Retrieve sediment traps currently deployed in Prince William Sound. Complete analysis of 1991 and 1992 samples. Analyze 1991 and 1992 data. Write final report.

Unresolved Issues- None

Recommendation- Fund as Proposed

Alternative View-

Recommended Cost- \$46,700

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #6

Project Title- Injury to Rockfish

Proposed Cost- \$15,000

Injury- Loss of some individual rockfish. Some possible sublethal effects on population.

Recovery- Since population decline has not been established, recovery is uncertain

Prospects for Restoration- Need for restoration uncertain

Work Needed for Project Completion- Analysis of histopathological and chemical data and write final report.

Unresolved Issues- None

Recommendation- Fund as proposed

Alternative View-

Recommended Cost- \$15,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Subtidal #7

Project Title- Injury to Demersal Fishes

Proposed Cost- \$66,100

Injury- Some gill damage to flat fish. Some hydrocarbon exposure documented.

Recovery- Helps to understand the availability of oil to deep water organisms

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Analysis of data and write final report.

Unresolved Issues- None

Recommendation- Partial funding, proposed budget appears to be high for amount of work to be done.

Alternative View- Principle Investigator claims full funding is needed.

Recommended Cost- \$45,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Coastal Habitat #1A

Project Title- Comprehensive Assessment of Coastal Habitat

Proposed Cost- \$2,950,000

Injury- Chronic reductions in populations of intertidal invertebrates and algae.

Recovery- Started but not complete.

Prospects for Restoration- Intertidal monitoring needed. Cost effectiveness and techniques of direct restoration measures are uncertain.

Work Needed for Project Completion-

Unresolved Issues-

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Coastal Habitat #1B

Project Title- Pre-spill and Post-spill Concentrations of Hydrocarbons in Mussels in Prince William Sound

Proposed Cost- \$40,000

Injury- Provides knowledge of increase in bioavailable hydrocarbons as a result of the spill

Recovery- Provides information on loss of hydrocarbons over time from spill area

Prospects for Restoration- Uncertain

Work Needed for Project Completion-

Unresolved Issues- None

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Marine Mammals #1

Project Title- Effects of EVOS on Distribution and Abundance of Humpback Whales in Prince William Sound

Proposed Cost- \$15,000

Injury- No injury, some potential displacement in 1989 from lower Knight Island Passage.

Recovery- N.A.

Prospects for Restoration- Restoration action not needed.

Work Needed for Project Completion- Write final report.

Unresolved Issues- None

Recommendation- No further funding. Field work completed in 1989. Timely use of this information for management purposes has already occurred.

Alternative View- Principle Investigator wants funds to complete photo identifications of whales from Southeast Alaska, do some quality assurance with data and write report.

Recommended Cost- \$0

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Marine Mammals #2

Project Title- Assessment of Injuries to Killer Whales in Prince William Sound, Kodiak Archipelago, and Southeast Alaska.

Proposed Cost- \$35,000

Injury- There was an unnaturally high rate of mortality in AB pod in 1989 and 1990, although the spill area population does not appear to have been greatly affected.

Recovery- The number of whales in AB pod has stabilized in 1991.

Prospects for Restoration- Very little can be done except by the whales themselves.

Work Needed for Project Completion- Final confirmation of photo identifications by contractor. Report completion by principle investigator.

Unresolved Issues- Uncertain if injury was a result of the oil spill.

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Marine Mammals #6

Project Title- Assessment of Magnitude/Extent/Duration of Oil Impacts to Sea Otters

Proposed Cost- \$200,000

Injury- Significant population decline of sea otters in spill zone.

Recovery- No indication that population is recovering. Some indication of continuing injury.

Prospects for Restoration- Must rely on natural recovery. Continued monitoring is necessary to determine if additional protective measures are required.

Work Needed for Project Completion-

Unresolved Issues-

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Archaeology #1

Project Title- Archaeological Survey

Proposed Cost- \$226,850

Injury- Oiling of sites, increased vandalism and erosion of sites.

Recovery-

Prospects for Restoration-

Work Needed for Project Completion-

Unresolved Issues-

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/Shellfish #1

Project Title- Salmon Spawning Area Injury

Proposed Cost- \$65,600

Injury- Increased egg mortality of pink salmon in oiled streams in 1989, 1990 and 1991. Some deformed fry.

Recovery- Injury to eggs continues and worsens.

Prospects for Restoration- Without a demonstrated population injury, the advisability of restoration actions is questionable.

Work Needed for Project Completion- Analysis of the last 3 years of pink salmon escapement data for Prince William Sound and production of the final report.

Unresolved Issues- Analysis of data is necessary to improve pink salmon management practices in Prince William Sound, but there is no established effect of the spill on the wild populations.

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/shellfish #2

Project Title- Egg/Pre-emergent Fry Sampling

Proposed Cost- \$36,700

Injury- Increased egg mortality of pink salmon in oiled streams in 1989, 1990 and 1991. Some deformed fry.

Recovery- Injury to eggs continues and worsens.

Prospects for Restoration- Without a demonstrated population injury, the advisability of restoration actions is questionable.

Work Needed for Project Completion- Some further data analysis is required. Final report needs to be written.

Unresolved Issues-

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/Shellfish #3

Project Title- Coded-wire Tag Recovery and Analysis

Proposed Cost- \$118,600

Injury- Increased egg mortality of pink salmon in oiled streams in 1989, 1990 and 1991. Some deformed fry.

Recovery- Injury to eggs continues and worsens.

Prospects for Restoration- Without a demonstrated population injury, the advisability of restoration actions is questionable.

Work Needed for Project Completion- Prepare final report.

Unresolved Issues-

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/Shellfish #4A

Project Title- Early Marine Salmon Injury

Proposed Cost- \$136,400

Injury- Oil affected the growth of fry in oiled areas in 1989.

Recovery- Effect did not persist in 1990 or 1991.

Prospects for Restoration- Need for restoration is not indicated.

Work Needed for Project Completion- Write final report.

Unresolved Issues- None

Recommendation- Delete proposed analyses of samples collected during 1990 and 1991. Delete temperature experiment.

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/Shellfish 4B

Project Title- Effects of Oil Contamination on Juvenile Pink Salmon in Prince William Sound

Proposed Cost- \$120,000

Injury- Oil affected the growth of fry in oiled areas in 1989.

Recovery- Effect did not persist in 1990 or 1991.

Prospects for Restoration- Need for restoration is not indicated.

Work Needed for Project Completion- Considerable sample analyses are needed to complete this project as well as preparation of a final report.

Unresolved Issues-

Recommendation- Complete analysis of 1989 samples and experiment done last year. Produce final report.

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/Shellfish #5

Project Title- Dolly Varden Injury

Proposed Cost- \$18,000

Injury- Differences in survival for both species and in growth for cutthroat trout between oiled and unoled areas in 1990 and 1991.

Recovery- Population sizes are not being assessed, but differences in growth and survival are persisting.

Prospects for Restoration- Reduction in fishing pressure has occurred.

Work Needed for Project Completion- Production of final report.

Unresolved Issues-

Recommendation- Finish report as requested.

Alternative View-

Recommended Cost- \$18,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/Shellfish #11

Project Title- Herring Injury

Proposed Cost- \$287,000

Injury- Rate of egg mortality and per cent abnormal larvae has been elevated in lightly and moderately oiled herring spawning areas in Prince William Sound.

Recovery- Effects persist through 1990 and 1991, but it is too early to tell if there is a population effect. Chances of measuring a population effect are slight.

Prospects for Restoration- Need for restoration is not indicated.

Work Needed for Project Completion- Numerous sample analyses remain to be completed and a final report needs to be completed.

Unresolved Issues-

Recommendation- Complete final report on injury to eggs and larvae.

Alternative View-

Recommended Cost- Cost reductions appear to be possible.

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Fish/Shellfish #13

Project Title- Clam Injury

Proposed Cost- \$93,100

Injury- Although clams transplanted into oiled beaches grew slower than those transplanted into unoiled beaches, the effects of natural factors has not been evaluated.

Recovery- Injury determination is not yet complete, therefore a determination of recovery is premature.

Prospects for Restoration- Not yet applicable.

Work Needed for Project Completion- Statistical analysis of clam growth data is needed.

Unresolved Issues-

Recommendation- Recommend completion of statistical analysis and production of final report.

Alternative View-

Recommended Cost- \$35,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #2

Project Title- Boat Surveys to Determine Distribution and Abundance of Birds and Sea Otters

Proposed Cost- \$60,000

Injury- Chronic population effects have been demonstrated for otters. Some bird populations have decreased since the last pre-spill surveys.

Recovery- No indications that otters have recovered. Lingering effects are indicated in some bird species.

Prospects for Restoration- Prevent habitat degradation, minimize disturbance and monitor populations.

Work Needed for Project Completion- Analysis of survey data and completion of final report.

Unresolved Issues- None

Recommendation-

Alternative View-

Recommended Cost-

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #3

Project Title- Population Surveys of Seabird Nesting Colonies: Murres

Proposed Cost- \$125,000

Injury- There was a large mortality of murres in several colonies in the Gulf of Alaska. Reproductive failure has been apparent for 3 years in some colonies.

Recovery- The colonies have not returned to pre-spill populations, but recovery may be starting.

Prospects for Restoration- There are some techniques that may be useful in aiding recovery, but they are generally unproven.

Work Needed for Project Completion- Data analysis and final report production.

Unresolved Issues- None

Recommendation- Most of the data analysis has been completed and the 1991 progress report provides the basis for a good final report.

Alternative View-

Recommended Cost- \$30,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #4

Project Title- Assessing the Effects of EVOS on Bald Eagles

Proposed Cost- \$75,000

Injury- There were probably several hundred bald eagles killed by the spill. There was greater reproductive failure in the nests in the oiled areas of Prince William Sound in 1989.

Recovery- Population surveys have not shown a statistically significant decrease in adult eagles in Prince William Sound as a result of the oil spill.

Prospects for Restoration- None indicated

Work Needed for Project Completion- Data analysis and final report preparation.

Unresolved Issues- None

Recommendation- Nearly all of the data has been analyzed and reported in the 1991 progress report. Some additional rewriting and analysis is required to produce a final report.

Alternative View-

Recommended Cost- \$35,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #6

Project Title- Assessment of the Abundance of Marbled Murrelets along the Kenai Peninsula and Prince William Sound

Proposed Cost- \$18,000

Injury- About 600 carcasses were recovered after the spill, which probably represents a small proportion of those killed. Post-spill population numbers are much less than pre-spill population numbers.

Recovery- Uncertain without final analysis of data from Bird #2.

Prospects for Restoration- Protection of upland nesting habitat is essential if this species is to recover.

Work Needed for Project Completion- Further analysis of population data and preparation of final report.

Unresolved Issues- None

Recommendation- Complete as requested

Alternative View-

Recommended Cost- \$18,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #7

Project Title- Assessment of the Effects of EVOS on Fork-Tailed Storm Petrels

Proposed Cost- \$5,000

Injury- Significant numbers of this species were killed as a result of the spill.

Recovery- Uncertain

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Data analysis and preparation of final report.

Unresolved Issues- None

Recommendation- Complete as requested

Alternative View-

Recommended Cost- \$5,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #8

Project Title- Assessment of Injuries to Reproductive Success of Black-Legged Kittiwakes in Prince William Sound

Proposed Cost- \$5,000

Injury- Some reproductive failures in the spill area in 1989, but this often occurs in this species. The effect of the spill is uncertain.

Recovery- Uncertain as population data are not being gathered.

Prospects for Restoration- None

Work Needed for Project Completion- Production of final report.

Unresolved Issues- None

Recommendation- Complete as requested

Alternative View-

Recommended Cost- \$5,000

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DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #9

Project Title- Assessment of Injuries to Pigeon Guillemot Populations

Proposed Cost- \$18,000

Injury- About 600 carcasses were recovered after the spill. Many more were probably killed.

Recovery- Uncertain without further analysis of data from the boat surveys (Bird #2).

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Data analysis completion of a final report.

Unresolved Issues- None

Recommendation- Complete as requested

Alternative View-

Recommended Cost- \$18,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #11

Project Title- Injury Assessment of Hydrocarbon Uptake by Sea Ducks

Proposed Cost- \$20,000

Injury- There has been a reproductive failure of harlequin ducks in western Prince William Sound in 1990 and 1991. There was no pre-spill data on reproduction of this species in western Prince William Sound.

Recovery- There are no indications of recovery.

Prospects for Restoration- If hydrocarbons can be reduce in food sources and stream side habitat can be protected, then this species may begin reproducing in western Prince William Sound.

Work Needed for Project Completion- Completion of data analysis and production of a final report

Unresolved Issues- None

Recommendation- Fund as requested.

Alternative View-

Recommended Cost- \$20,000

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DAMAGE ASSESSMENT CLOSEOUT

Project No.- Bird #12

Project Title- Assessment of Injury to Shorebirds in Prince William Sound and the Kenai Peninsula

Proposed Cost- \$18,000

Injury- There was an effect of oil on reproductive success of black oystercatchers in Prince William Sound. Population data suggest an effect on this species, but pre-spill data were gathered long before the spill.

Recovery- Uncertain

Prospects for Restoration- Uncertain

Work Needed for Project Completion- Some slight modification of the Principle Investigators progress report would be appropriate but most of the work is complete.

Unresolved Issues- None

Recommendation- Partial funding.

Alternative View-

Recommended Cost- \$5,000

DAMAGE ASSESSMENT CLOSEOUT

Project No.-

Project Title-

Proposed Cost- \$

Injury-

Recovery-

Prospects for Restoration-

Work Needed for Project Completion-

Unresolved Issues-

Recommendation-

Alternative View-

Recommended Cost- \$

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DAMAGE ASSESSMENT CONTINUATION

Project No.- Technical Services #1

Project Title- Hydrocarbon Analyses

Proposed Cost- \$950,000

Injury- Supports nearly all injury studies.

Recovery- Not applicable

Prospects for Restoration- Not applicable

Work To Be Done This Year- Almost all 1991 samples remain to be analyzed.

Unresolved Issues- None

Recommendation- Fund as requested with continued review of analytical needs for closeouts.

Alternative View-

Recommended Cost- \$950,000

DAMAGE ASSESSMENT CONTINUATION

Project No.- Technical Services #3

Project Title- GIS Mapping

Proposed Cost- \$400,000

Injury- Supports several injury studies.

Recovery- Not applicable

Prospects for Restoration- Not applicable

Work To Be Done This Year- Production of some analyses and maps for damage assessment closeout and continuation.

Unresolved Issues- None

Recommendation- Budget needs to be further refined and oversight of GIS activities provided by the Restoration Team.

Alternative View-

Recommended Cost- To be determined.

DAMAGE ASSESSMENT CONTINUATION

Project No.- Subtidal #4

Project Title- Fate and Toxicity of EVOS Oil

Proposed Cost- \$160,000

Injury- Residual oil appears to be responsible for some toxicity to subtidal invertebrates.

Recovery- Uncertain

Prospects for Restoration- Uncertain

Work To Be Done This Year- Production of final report.

Unresolved Issues- None

Recommendation- This project should be coordinated with other subtidal recovery monitoring efforts whenever they are done. The subtidal program should be deferred until complete results from current damage assessment studies are available. A final report for the project results to date should be produced.

Alternative View-

Recommended Cost- \$10,000

DAMAGE ASSESSMENT CONTINUATION

Project No.- Subtidal #5

Project Title- Injury to Shrimp

Proposed Cost- \$80,600

Injury- The currently available data do not support a conclusion of injury to this species. The observed population decline had started before the spill.

Recovery- Uncertain

Prospects for Restoration- If injury has occurred, management practices could help in restoration.

Work To Be Done This Year- A final report should be prepared.

Unresolved Issues- It is uncertain whether injury has occurred.

Recommendation- Complete a final report synthesizing the available damage assessment data before seeking approval for additional field work.

Alternative View-

Recommended Cost- \$20,000

DAMAGE ASSESSMENT CONTINUATION

Project No.- Subtidal #8

Project Title- Mussel Tissue and Sediment Hydrocarbon Data Synthesis

Proposed Cost- \$175,000

Injury- Supports completion of damage assessment closeouts.

Recovery- Not Applicable

Prospects for Restoration- Not Applicable

Work To Be Done This Year- Examination, analysis and synthesis of hydrocarbon data from mussels and sediments available from all studies.

Unresolved Issues- None

Recommendation- Fund as requested.

Alternative View-

Recommended Cost- \$175,000

DAMAGE ASSESSMENT CONTINUATION

Project No.- Terrestrial Mammal #3

Project Title- Assessment of the Effects of the EVOS on River Otter and Mink in Prince William Sound

Proposed Cost- \$184,000

Injury- Data indicate the otters in the spill zone have lower condition indexes, forage more widely and spend more time foraging than those in unoiled areas. There is no data on the population sizes.

Recovery- Uncertain

Prospects for Restoration- Uncertain

Work To Be Done This Year- Another year of field work and closeout of all damage assessment activities, including production of a final report, is proposed.

Unresolved Issues- Uncertain if river otter population has been affected.

Recommendation- Defer further field work. Complete final report on injury.

Alternative View-

Recommended Cost- To be determined

DAMAGE ASSESSMENT CONTINUATION

Project No.- Fish/Shellfish #27

Project Title- Sockeye Salmon Overescapement

Proposed Cost- \$524,800

Injury- The closure of the fishery in upper Cook Inlet resulted in about double the escapement goal for the Kenai River and possibly other systems. Smolt production in the Kenai River is extremely low and the 1994 and 1995 sockeye runs may be extremely weak.

Recovery- Uncertain

Prospects for Restoration- Severe reduction in harvest may be necessary to alleviate the threat to the stock.

Work To Be Done This Year- Proposed: Enumeration of smolts, establish age structure of smolts in rearing lakes and during migration, and determine effects on carrying capacity of lakes.

Unresolved Issues- The oil spill was the cause of a third year of overescapement. Should the settlement monies be used for a problem that may have resulted partly from other causes.

Recommendation- Defer to Trustee Council for policy decision.

Alternative View-

Recommended Cost- Recommendation to be based on Trustee Council policy decision.

DAMAGE ASSESSMENT CONTINUATION

Project No.- Fish/Shellfish #28

Project Title- Run Reconstruction

Proposed Cost- \$474,600

Injury- The injury is to the early life history stages of pink salmon. There is no data to support a population level effect of the spill.

Recovery- Early life stage injury recovery uncertain.

Prospects for Restoration- Without a population effect, restoration is not indicated.

Work To Be Done This Year- Proposed: A tagging-recapture study is proposed in order to provide data for building the run reconstruction model.

Unresolved Issues- Should oil spill settlement funds be used to develop management tools for salmon without an indication of an oil spill effect on the adult runs.

Recommendation- Defer to Trustee Council for policy decision.

Alternative View-

Recommended Cost- Recommendation to be based on Trustee Council policy decision.

DAMAGE ASSESSMENT CONTINUATION

Project No.- Fish/Shellfish #30

Project Title- Database Management

Proposed Cost- \$178,700

Injury- Not Applicable

Recovery- Not Applicable

Prospects for Restoration- Not Applicable

Work To Be Done This Year- Proposed: The maintenance of the data base for all salmon and other resource work supported by oil spill funding in ADF&G.

Unresolved Issues- The need for construction and maintenance of a large data base for fisheries has been exacerbated by the spill.

Recommendation- Defer to Trustee Council for policy decision.

Alternative View-

Recommended Cost- Recommendation to be based on Trustee Council policy decision.

DAMAGE ASSESSMENT CONTINUATION

Project No.-

Project Title-

Proposed Cost- \$

Injury-

Recovery-

Prospects for Restoration-

Work To Be Done This Year-

Unresolved Issues-

Recommendation-

Alternative View-

Recommended Cost- \$