AIR/WATER STUDY NUMBER #1 Damage Assessment Close-out

Study Title: Geographic Extent and Temporal Persistence of Floating Oil from the *Exxon Valdez*

Lead Agency: ADEC

Cost of Proposal: $15,000

Project Summary

This project documents the extent of floating oil on water following the *Exxon Valdez* oil spill. Frequent aerial surveys were conducted by several agencies after the spill to track movement of the oil. The information from those flights was collated each day into a map to display the extent of the oil on the surface of the water. Information was collected throughout the spill area for several months until most oil was no longer floating on the water surface. Some work is needed to complete the maps and prepare a final report. The information provided by this project is important to other studies to determine oiling conditions at individual study sites.

AIR/WATER STUDY #1
Alaska Department of Environmental Conservation

Duration of Project: March 1, 1992 through August 30, 1992

100	Salary	13.5
200	Travel	0.0
300	Contractual	0.5
400	Commodities	1.0
500	Equipment	0.0
		15.0

Study Title: Petroleum Hydrocarbon-Induced Injury to Subtidal Marine Sediment Resources.

Study ID Number: Subtidal Study Number 1

Project Leader: Stanley D. Rice
Charles E. O'Clair

Lead Agency: NOAA/NMFS/Auke Bay Laboratory

Cost of Proposal: 100K

Study Dates: March 1 1992 - February 28 1993

Project Justification

The primary goal of Subtidal Study Number 1 is to determine the spatial and temporal distribution of oil in subtidal sediments in Prince William Sound and the Northeastern Gulf of Alaska (NEGOA). As of June 1990 subtidal sediments were contaminated by oil at no fewer than 15 sites within the Sound. Hydrocarbon contamination of sediments had reached a depth of 20 m at at least 8 sites. In or near two heavily contaminated bays petroleum hydrocarbons were detected in sediments at a depth of 100 m. There is also evidence suggesting a trend for petroleum hydrocarbons to move from the intertidal region to greater depths (3, 6, and 20 m) between May and November 1989 at Sleepy Bay. At Northwest Bay and Herring Bay there appeared to be a tendency toward an increase in contamination of the 6 and 20 m depths between July 1989 and June 1990. At least 7 sites along the Kenai and Alaska Peninsulas showed contamination of subtidal sediments by hydrocarbons. Petroleum hydrocarbons were detected below a depth of 6 m at three of those sites.

These results are based on a small number of samples because of delays associated with hydrocarbon analysis. In early fall 1991 we received the results of the hydrocarbon analysis of 894 of the 1820 samples submitted to date (data from 153 samples had been previously returned. These data are currently undergoing the final stages of quality control. Analysis of the data from all these samples should provide a reasonably complete picture of contamination by the oil spill of subtidal sediments in Prince William Sound. A less complete summary will be available for NEGOA. This proposal supports analysis of the data on these samples and writeup of the results of that analysis.

This study supports other studies requiring documentation of hydrocarbon contamination of subtidal sediments such as those studies of impacts on benthic communities as well as specific fish and invertebrate species. Results of the University of Alaska

Fairbanks on the responses of hydrocarbon degrading bacteria in subtidal sediments appear to be consistent with our hydrocarbon results indicating contamination to a depth of 100 m at a minimum of two sites in Prince William Sound. Both the deep benthos and the microbiological components of Subtidal Study 1 are heavily dependent on the results of the sediment hydrocarbon analyses.

Project Statement Summary

The principal goal of Subtidal Study #1 has been to document the extent to which subtidal sediments in Prince William Sound were contaminated by oil from the EXXON Valdez oil spill. In the three years following the EXXON Valdez spill a total of 3,127 sediment samples were collected from the intertidal and nearshore subtidal regions of Prince William Sound and the northeastern Gulf of Alaska under Subtidal Study Number 1 (formerly Air/Water Study Number 2). These sediment samples were collected from 32 locations inside Prince William Sound and eight locations outside the Sound.

Within Prince William Sound subtidal sediments were contaminated by oil at no fewer than 15 sites by June 1990. Hydrocarbon contamination of sediments had reached a depth of 20 m at at least 8 sites by June 1990.

The highest level of total hydrocarbons (defined as the sum of the total aromatic hydrocarbons, total alkanes and unresolved complex mixture) reached 507 µg/g (ppm) wet weight in a sediment sample collected at about 0 m (mean lower low water) at Northwest Bay in July 1989. This sample contained a concentration of total aromatic hydrocarbons (14 ppm) about 50-100 times the concentration of aromatics found in pre-spill, 0-tide level sediments. The greatest concentration of total hydrocarbons found in sediment samples from June 1990 was 220 µg/g at 0 m at Block Island. Although analytical data from 1990 are to date limited concentrations of total hydrocarbons exceeding 100 µg/g have been shown to occur only at Block Island (0 and 6 m) and Northwest Bay (3-20 m) in June 1990.

Preliminary examination of temporal changes in the contamination of sediments by oil at Sleepy Bay in 1989 revealed that there may have been a trend for petroleum hydrocarbons to move from the intertidal region to greater depths (3, 6, and 20 m) between May and November 1989. Northwest Bay and Herring Bay showed some tendency toward an increase in contamination of the 6 and 20 m depths between July 1989 and June 1990.

Outside Prince William Sound at least 7 sites along the Kenai and Alaska Peninsulas showed contamination of subtidal sediments by hydrocarbons. Petroleum hydrocarbons were detected below a depth of 6 m at three sites in 1989.

Budget

Budget for Oil Spill Year 4

ITEM	DETAIL	PROJECT COST	OY4/ FY92	OY4 FY93
SALARIES				
	Principal Investigator: GS-12; 0.40 FTE	31100		
	Research Fish. Biologist: GS-09; 1.0 FTE	32500		
TRAVEL				
	2 RT JNU-ANCH MEETING $500 + $196/D Per Diem, 3d	2064		
	2 RT JNU-SEA MEETING $550 + $103/D Per Diem, 3d	1718		
CONTRACTS				
	Meiofauna sample sorting	26520		
EQUIPMENT				
	Computer hardware	3812		
SUPPLIES				
	Computer supplies and software Reference material	2600		
TOTAL COSTS		100314		
Percentages		100%		

SUBTIDAL STUDY #1 Damage Assessment Close-out

Study Title: Hydrocarbon Mineralization Potentials and Microbial Populations in Sediment

Lead Agency: ADEC (UAF)

Cost of Proposal: $16,000

Project Summary

The final report is currently being completed. All of the field and laboratory work has been completed on this project. Results are available for 6 cruises from 1989 through 1991 which are being analyzed and summarized into a final report.

Preliminary results show that microbial numbers and activity in sediments are good indicators of previous exposure to hydrocarbon contamination. In addition, these measurements yield information on the mobilization of oil to deeper sediments over time. Microbial activity, even in 1991, remains high at some sites presumably where relatively fresh oil is still present. The information collected in this project promises to be useful in linking other NRDA studies together and possibly for prioritizing sediment hydrocarbon samples for analysis.

This information is being linked with other studies. For example, sites where microbial populations would indicate exposure to hydrocarbons in deeper depths (e.g. 40m) seem to be the same sites where invertebrate populations show disturbance.

SUBTIDAL STUDY 1B
Alaska Department of Environmental Conservation

Duration of Project: March 1, 1992 through June 30, 1992

A. SALARIES/WAGES	
1. Principal Investigator 110 hr.	$3,960
3. Technician 320 hr.	$6,400
B. TRAVEL	$1,573
C. SERVICES Photocopying, Communications, Graphics	$ 900
D. SUPPLIES	$ 500
E. EQUIPMENT	0
F. TOTAL DIRECT COSTS	$13,333
** G. OVERHEAD 20% of Total Direct Costs	$2,667
TOTAL COSTS	$16,000

** Less amount reserved by the University of Alaska Fairbanks for claim through the CERCLA process (Comprehensive Environmental Response, Compensation and Liability Act of 1980) ($4,000)

PROJECT: Injury to Shallow Subtidal Communities PROJECT LEADER: Steve Jewett

PROJECT NO: ST2A ADF&G Budget LOCATION: UAF-Fairbanks PHONE: (907)474-7841

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	33.7	67.3	101.0
72000	0.0	0.0	0.0
73000	24.0	0.0	24.0
74000	0.0	0.0	0.0
75000	0.0	0.0	0.0
TOTAL	57.7	67.3	125.0

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

DESCRIPTION/JUSTIFICATION:

Oil spills have three phases of impact to communities of bottom dwelling organisms: Phase 1 is characterized by a short-term toxic effect in which there is a large-scale mortality; Phase 2 is characterized by an invasion of opportunistic organizms that feed on the abundance of dead organic matter that resulted from Phase 1; Phase 3 is recivery and return to normal. This project began in fall 1989, focusing on sites of less than 20m depth. The study sites were in biologically important areas where eelgrass (Zostera) or brown algae (Laminaria) predominate. There has been injury or death to the plants within eelgrass beds affected by oil, a reduction in some shallow-bottom invertebrates, and an increase in scavenger species. Based on experience elsewhere, it can be expected that dead organic material will be consumed by bacteria and opportunistic animals over a period of 3-5 years, during which time, normal communities can be expected to reestablish themselves. The significance of oil impact to shallow subtidal communities lies in the effects on the food chain: normal food species fed on by fish, otters, etc. may no longer be present in adequate numbers, and hydrocarbon contaminants may be passed to higher level organisms. It is within the shallow areas where species such as sea ducks, sea otters, and river otters forage. The present project will continue to analyze the samples that were taken in 1991 and will conclude the damage assessment portion of the subtidal research program with a final report late in 1992. This project complements the deep benthic project.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
		Principal Investigator	3.0	Fairbanks		
		Fish Ecologist	2.0	Fairbanks		
		Lab Supervisor	3.0	Fairbanks		
		Lab Tech	4.0	Fairbanks		
		Lab Tech	4.0	Fairbanks		
		Lab Tech	4.0	Fairbanks		
		Student Assistant	3.0	Fairbanks		
		Student Assistant	3.0	Fairbanks		
		Student Assistant	3.0	Fairbanks		
		Student Assistant	3.0	Fairbanks		
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 2.7

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	Coastal Resources Associates	24.0	0.0	24.0
73300 Communication		0.0	0.0	0.0
73400 Transportation		0.0	0.0	0.0
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding		0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	24.0	0.0	24.0

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies		0.0	0.0	0.0
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

PROJECT: Injury to Deep-Water Benthos PROJECT LEADER: Howard Feder

PROJECT NO: ST2B ADF&G Budget LOCATION: U of A-Fairbanks PHONE: 474-7956

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	70.0	70.0
72000	0.0	1.6	1.6
73000	0.0	7.2	7.2
74000	0.0	1.2	1.2
75000	0.0	0.0	0.0
TOTAL	0.0	80.0	80.0

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

DESCRIPTION/JUSTIFICATION:

Oil spills have three phases of impact to communities of bottom-dwelling organisms: Phase 1 is characterized by a short-term toxic effect in which there is large-scale mortality: Phase 2 is characterized by an invasion of opportunistic organisms that feed on the abundance of dead organic material that resulted from Phase 1; Phase 3 is recovery and return to normal. Because this project did not begin until July 1990, more than a year after the oil spill, Phase 1 had been completed except in certain limited areas. There was, however, considerable evidence that Phase 2 was present in 1990 and continued into 1991. Based on experience elsewhere, it can be expected that dead organic material will be consumed by bacteria and opportunistic animals over a period of 3-5 years, during which time, normal communities can be expected to reestablish themselves. The significance of oil impact to deep subtidal communities lies in the effects on the food chain: normal food species fed on by fish, otters, etc. may no longer be present in adequate numbers, and hydrocarbon contaminants may be passed to higher level organisms. The present project will continue to analyze the samples that were taken in 1991 and will conclude the damage assessment portion of the subtidal research program with a final report late in 1992. This project compliments the shallow benthic project.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
		Principal Investigator	1.5	Fairbanks		
		Lab Supervisor	1.0	Fairbanks		
		Lab Technician	4.0	Fairbanks		
		Statistician	0.3	Fairbanks		
		Lab Technician II	4.5	Fairbanks		
		Lab Technician II	4.5	Fairbanks		
		Student Assistant II	1.0	Fairbanks		
		Student Assistant II	1.0	Fairbanks		
		Student Assistant II	1.0	Fairbanks		
		Student Assistant II	1.0	Fairbanks		
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 1.6

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel	2 Round Trips ANC-FBKS	0.0	0.6	0.6
72300 Conventions/Meeting Travel	Hotel (ANC) (4 days @ $100)	0.0	0.4	0.4
72360 Moving/Relocation Expenses	Ground Travel	0.0	0.1	0.1
72500 Per Diem	Per Diem (4 days @ $40)	0.0	0.2	0.2
Other	Overhead (20%)	0.0	0.3	0.3
	SUBTOTAL	0.0	1.6	1.6

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	Data Management	0.0	1.5	1.5
73300 Communication		0.0	0.0	0.0
73400 Transportation		0.0	0.0	0.0
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Publications	0.0	3.0	3.0
73600 Public Utilities Services	Phone, Fax, etc.	0.0	0.2	0.2
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment	Equipment Rental	0.0	1.4	1.4
73900 Other Expenditures & Services	Overhead (20%)	0.0	1.2	1.2
		0.0	0.0	0.0
	SUBTOTAL	0.0	7.2	7.2

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	Lab/Office Supplies	0.0	1.0	1.0
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies		0.0	0.0	0.0
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER	Overhead (20%)	0.0	0.2	0.2
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	1.2	1.2

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

Study Title: Bioavailability of hydrocarbons in caged mussels

Study ID No.: Subtidal Study Number 3

Project Leader: Jeffrey W. Short
Patricia Rounds

Lead Agency: NOAA/NMFS/Auke Bay Laboratory

Cost of Proposal: $ 29.3 K

Study Dates: March 1 1992 - February 28 1993

Project Statement Summary

The goal of the NOAA component of project Subtidal Study #3 is to document petroleum hydrocarbon loading in near shore waters impacted by the Exxon Valdez oil spill. In 1989, hydrocarbon loading was monitored by direct sampling of seawater in Prince William Sound (PWS) and in 1989, 1990, and 1991 by deployment of hydrocarbon free mussels along the oil spill trajectory for exposure periods of 1 to several months.

In 1989, chemical analysis of the seawater samples shows the presence of aromatic hydrocarbons of petroleum origin. Total aromatic hydrocarbon concentrations range up to about 8 µg/l (ppb) at the most heavily contaminated sites 8 days after the spill, but after 6 weeks decline to below detection limits. Although significantly higher than concentrations reported by Exxon field studies, these concentrations are still lower than those known to cause detectable adverse effects on biological marine resources following relatively short-term exposures.

Caged mussels are more sensitive indicators of oil in seawater, because they effectively contact larger volumes of seawater, and selectively filter and ingest organic particulates. In 1989, both aromatic and aliphatic hydrocarbons of petroleum origin were detected in tissue of caged mussels at concentrations ranging up to 100 µg/g wet tissue (ppm), and were detected at all stations and depths inside PWS along the spill trajectory. Outside the Sound, although hydrocarbon concentrations were generally low and highly variable among replicates, mussels exposed at Tonsina Bay and Chignik showed moderate levels of contamination. Oil contamination levels in the caged mussels declined after May 1989 and approached control levels by Fall 1989. In 1990, oil contamination levels that were significantly above control levels were low and sporadic.

These results from the caged mussels indicate that biologically available hydrocarbons from the Exxon Valdez oil spill were generally pervasive in the upper water column along the spill trajectory inside PWS during the summer of 1989. This biological availability may result from association of petroleum

hydrocarbons with particulate organic material in the seawater column that can be ingested by larval herring and juvenile salmon, thus providing a mechanism for the adverse effects observed in these fish (see Fish/Shellfish studies).

The Alaska Department of Environmental Conservation (ADEC) component of project Subtidal Study #3 involved the deployment of sediment traps at selected locations within PWS. Results indicate that petroleum hydrocarbons associated with near-shore sediments or organic particulates can migrate to greater depths. In 1991, caged mussels were deployed with the sediment traps to determine the biological availability of hydrocarbons trapped. These results will help to evaluate addition damage to biological resources caused by these migrating hydrocarbons. Results from the caged mussels deployed in 1991 are not yet available.

Project Justification

The goal of the NOAA component of project Subtidal Study #3 is to determine amounts and persistence of petroleum hydrocarbons in near-shore subsurface waters impacted by the Exxon Valdez oil spill. Although this study does not determine direct damages to biological resources, it provides evidence for the plausibility of damages observed in other studies that are focused on specific subtidal biological resources, and it provides indications of where and to some extent how to look for these damages. In particular, preliminary results from the caged mussel deployments of this project indicate widespread availability of petroleum hydrocarbons inside Prince William Sound that are probably associated with food particles of various fish species. Such an association makes plausible (1) the damages to fish observed in the Fish/Shellfish studies, and (2) the hydrocarbon exposures indicated by the bile analyses of fish at substantial depths and distances from the Sound. The analysis and interpretation of these results should be completed and published, because they suggest that toxic effects of oil pollution in general to biological resources via ingestion of contaminated food have not been fully appreciated: the toxicity of ingested petroleum hydrocarbons to marine organisms has not been examined much experimentally, yet ingestion appears to be the most significant route of exposure.

Budget

Budget for Oil Spill Year 4

ITEM	DETAIL	PROJECT COST	OY4/ FY92	OY4 FY93
SALARIES				
	Principal Investigator: GM-13; 0.17 FTE	11900	5950	5950
	Fish. Biologist GS-9; 0.36 FTE	15200	10600	4600
TRAVEL				
	1 RT PWS, 2 people, March 92 Spring pick up of sediment traps and mussels	1200	1200	
	1 RT JNU-ANCH MEETING $500 + $196/D Per Diem, 3d	1032	0	1032
CONTRACTS		0		
EQUIPMENT		0		
SUPPLIES		0		
TOTAL COSTS		29,332	17750	11582
Percentages		100%	60.5%	39.5%

SUBTIDAL STUDY NUMBER #3B Damage Assessment Close-out

Study Title: Bioavailability and Transport of Hydrocarbons in the Near Shore Water Column

Lead Agency: ADEC

Cooperating Agency: NOAA

Cost of Proposal: $46,700

Project Summary

The goal of the ADEC portion of Subtidal Study #3 is to determine the mobility of petroleum hydrocarbons in the near shore. Sediment traps are used to capture the particulates settling out of the water column, which are then analyzed for hydrocarbon chemistry. The study will show whether hydrocarbons are present in the particulate matter utilized by filter-feeding organisms in the water column (mussels) and whether there is a continuing input of petroleum hydrocarbons to the subtidal in these settling particulates. Additional sediment grain size data will provide information relating particle size to hydrocarbon chemistry which is important since many filter feeders show a preference for certain particle size ranges. Data from sediment cores in the vicinity of the traps will add knowledge of hydrocarbons due to mixing and bioturbation. Besides providing a connection between oiled particulates and uptake into the food chain, the sediment traps present an opportunity to investigate the continued mobility and transport of petroleum hydrocarbons from shorelines where surface or subsurface oiling remains into subtidal areas. The analysis and interpretation of the data collected from 1989 through 1992 from this study should be completed and published, since, 1) this represents the longest monitoring of settling particulates after a major oil spill; 2) the study provides a potential connection between shoreline and subtidal oiling and uptake by marine organisms; and, 3) because the results may shed light on questions remaining regarding the efficacy and environmental benefit of shoreline treatment. Results to date found significant quantities (200 ppm TPH) two years after the oil spill at several of the study sites where there is a continued presence of subsurface shoreline oiling.

SUBTIDAL STUDY 3B
Alaska Department of Environmental Conservation

Duration of Project: March 1, 1992 through August 30, 1992

100	Salary			16.5
	Env. Spec. II	3.5 months		
	Env. Spec. II	0.3 months		
	Env. Spec. III	0.3 months		
200	Travel			4.4
	Air fare	2.8		
	Per diem	1.6		
300	Contractual			25.1
	Professional Services		4.0	
	Printing and Binding		0.5	
	Maintenance		0.4	
	Vessel Charter		20.2	
400	Commodities			0.7
500	Equipment			0.0
			TOTAL	46.7

PROJECT: Injury to Rockfish - close-out PROJECT LEADER: Andrew Hoffmann

PROJECT NO: Sub-tidal #6 LOCATION: Anchorage PHONE: 267-2238

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	8.0	8.0
72000	0.0	1.0	1.0
73000	0.0	5.0	5.0
74000	0.0	1.0	1.0
75000	0.0	0.0	0.0
TOTAL	0.0	15.0	15.0

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the typ[illegible] information needed.

COMMENTS:

The NRDA Sub-Tidal study # 6 (F/S # 17) was conducted from May of 1989 through September of 1991. Lethal and sub-lethal injuries were documented. No field studies are planned for 1992, although sampling for histopathological evaluation could be conducted at two or three year intervals to document recovery or persistence of injury to these species. Close-out for this project will entail completion of a final report for publication as a Sport Fish Division, Fisheries Data Series or in a referred fisheries publication. Preparation of a final report is contingent upon receipt of various analyses from contract laboratories for hydrocarbon data and histopathologic evaluations. These analyses are not anticipated to be completed until June or July of 1992, based on previous turn around times. Additional analysis of stomach contents on samples collected in 1990 and 1991 could be done to compliment information from other studies. Therefore, close-out activities will not begin until August or September.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11-4208	16 F	Fisheries Biologist II	1.0	Anchorage	Hoffmann	Hepler
new	14 D	Fisheries Biologist I	1.0	Anchorage	Vacant	Hoffmann
			0.0			
			0.0			
			0.0			
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			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 0.2

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel	Commercial air travel	0.0	1.0	1.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.0	1.0	1.0

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	Sample analysis, Stomach conten	0.0	5.0	5.0
73300 Communication		0.0	0.0	0.0
73400 Transportation		0.0	0.0	0.0
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding		0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.0	5.0	5.0

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	office supplies	0.0	0.5	0.5
74520 Professional/Scientific Supplies	supplies for otolith aging	0.0	0.5	0.5
74560 Data Processing Supplies		0.0	0.0	0.0
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	1.0	1.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

Statement of Justification for Subtidal 7, OY4

Project Justification:

Subtidal Project 7, Injury to Demersal Fish, has generated a large quantity of data showing that substantial portions of the populations of flatfish in areas in or near the path of the EVOS have been, and apparently continue to be, exposed to petroleum products. Moreover, some shoreline species, such as Dolly Varden char. were substantially exposed during the first months following the spill, but exposure had declined markedly by 15 months after the spill. The funding proposed for OY4 is specifically aimed at putting all of these data into a context of how this exposure has been changing with time, and what the implications of such exposure might be. For example, some indications of reproductive changes and histopathological alterations have been noted in the studies funded under Subtidal 7. An examination in detail of all data collected, together with review of available scientific data from 1) other EVOS NRDA studies and 2) previously published studies of the effects of oil exposure in fish, will allow for a balanced interpretation concerning the potential impact of the EVOS on demersal fishes.

Project Statement Summary:

Beginning in late spring of 1989, Subtidal 7 (earlier designated as Fish/Shellfish 24), has systematically evaluated the exposure of several fish species to petroleum hydrocarbons both in Prince William Sound and at numerous sites along the path of the EVOS, to Kodiak Island and beyond. Both shoreline and demersal species have been studied. In addition to assessing exposure, reproductive parameters have been measured in Dolly Varden char and yellowfin sole, and histopathological structure has been examined in most species. To date, petroleum exposure has been assessed in over 1400 fish, and indicators of reproductive function has been evaluated in about 400 adult female fish.

The analyses of fish sampled in 1989 showed that Dolly Varden, Pacific halibut, salmon and three species of flounder (yellowfin sole, rock sole, and flathead sole) had been exposed to petroleum-derived compounds. The degree of exposure was found to have decreased in 1990 in some species (Dolly Varden), but to have remained constant in three benthic species. Preliminary evidence of histopathological alteration of gill epithelium in rock sole was observed. By 1991, exposure to petroleum-derived compounds had generally decreased in all fish species, but the results suggested that some fish continued to be exposed at sites inside Prince William Sound. The data obtained in 1991 do not indicate a substantial impact on reproductive processes in the species examined.

Results of the Subtidal 7 studies indicate that spilled oil from the EVOS moved to the benthic environment and led to exposure of benthic species that continued for 3 years following the EVOS. A detailed examination of all the data collected will provide valuable information concerning the potential impact of the EVOS on demersal fishes.

Detailed Budget - Subtidal 7, OY4					
	Salaries				
		Grades	FTE	Cost	
	Principal Investigator	GM-15	0.05	$3,929	
	Deputy Division Director	GM-14	0.05	$3,549	
	Supv. Res. Chemist	GS-12	0.1	$4,535	
	Zoologist	GS-11	0.1	$3,352	
	Res. Chemist	GM-13	0.1	$5,743	
	Res. Chemist	GS-11	0.1	$4,145	
	Physiologist	GS-11	0.1	$4,145	
	Fish. Biol. (Res.)	GS-11	0.1	$3,782	
	Computer Specialist	GS-7	0.45	$9,858	
Leave Surcharge				$7,618	
Total Salaries					$50,654
Employee Benefits					$8,966
				total	$59,620
Travel					
5 RT to Anchorage @ $900				$4,500	
Total Travel					$4,500
Supplies					
Office supplies including computer software					$2,000
PROJECT TOTAL					$66,120

COASTAL HABITAT
CH 1

Justification

The purpose of the study is to document and quantify injuries to biological resources found in the shallow subtidal, intertidal and supratidal zones throughout the shoreline areas affected by the EVOS. Field work was completed in late September 1991. Extensive labor intensive sample sorting and data analysis is necessary before a final report can be completed. An interim report due on October 1, 1992, will include analysis of 1989 data, 1990 round one data and 1991 sheltered rocky, sheltered estuarine and course textured sample sites. A final report is due June 1993. This project is the baseline for determining rate and extent of natural recovery.

COASTAL HABITAT INJURY ASSESSMENT PROJECT

BUDGET PROPOSAL FOR

DAMAGE ASSEEEMENT

MARCH 1, 1992 - JUNE 30, 1993

PERSONNEL

Position	# of People	# of Months	Salary/Leave/Benefits
Prin. Invest.	1	8	
Prin. Invest.	1	10	
Prin. Invest.	1	4	
Proj. Mgr.	1	11	
Log. Coord.	1	1	
Res. Assoc.	2	12	
Data Mgt.	1	14	
Technicians	8	16	
Lab Assistants	35	14	
Part time/SA II	14	14	
Admin. Assist.	1	8	
			2,185,000.00

TRAVEL

# of People	# of Trips	Destination	Total Cost w/per diem
2	2	K. Bay QA/QC	
4	1	Demob. K. Bay lab	
4	3	Fbks - Anch RT	
2	3	Jun - Anch RT	
2	2	Jun - Fbks RT	
1	2	Jun - Ore/Cal RT	
			19,500.00

SERVICES

Type	Total Cost
Laboratory space for 2 labs Herbarium Space Coastal Resources Associates Data Management Freight/Shipping Communications Storage/Warehouse Rent Publications/Reporting	227,100.00

COMMODITIES

Type	Total Cost
Laboratory supplies for 4 labs Herbarium supplies for 1 lab Computer supplies/peripherals Office Supplies	32,800.00

EQUIPMENT

Type	Total Cost
Computer Equipment Copying Equipment Herbarium Equipment	9,200.00

TOTAL DIRECT COSTS	2,473,600.00
OVERHEAD (20%)	494,720.00
TOTAL	2,968,320.00

Study Title: Pre-spill and Post-spill Concentrations of Hydrocarbons in Sediments and Mussels at Intertidal Sites in Prince William Sound and the Kenai Peninsula.

Study ID Number: Coastal Habitat 1B

Principal Investigator: Malin M. Babcock

Lead Agency: NOAA/NMFS/Auke Bay Laboratory

Cost of Proposal: 40K

Study Dates: March 1 1992 - February 28 1993

Project Statement Summary

On 26 March 1989, we began resampling 10 historically established intertidal hydrocarbon baseline sites in Prince William Sound (PWS) in response to the *Exxon Valdez* oil spill (EVOS). We also established 10 additional (in Prince William Sound and on the Kenai Peninsula) sites along the spill trajectory before oiling, and sampled after oiling to measure the increase of hydrocarbon levels in sediments and mussels resulting from the spill.

This project has documented that levels of hydrocarbons in sediments and mussels in intertidal areas in Prince William Sound in 1989 (before impact of EVOS) were similar to concentrations measured by an earlier NOAA/NMFS project (1977-1980) which established an hydrocarbon baseline for sediments and mussels for the same general geographical area.

Subsequent sampling in 1989 and 1990 indicates some sites were impacted by crude oil. Preliminary sediment analyses at 3 sites show impact by *Exxon Valdez* oil with different patterns of changes in petroleum hydrocarbon (PAH) concentrations over time.

Mussels from one site had extremely high concentrations of PAHs in 1990 samples while mussels from 4 other sites showed intermediate PAH levels in 1989. There were no detectable aromatic hydrocarbons in mussels samples 1977-1980. The limited data (from only 25 samples of >300 samples) available precludes reliable interpretation.

Project Justification

The goal of the project is to analyze and interpret hydrocarbon data from all samples and produce a final report. The final report for this study will provide data against which recovery and 'return to baseline levels' can be documented. Hydrocarbon data generated and analyzed to date is still scattered and

incomplete (i.e, there are no data from sites in the Kenai Peninsula available yet). This study furnishes essential background data and is linked directly to other NRDA projects that are species oriented and some Restoration/Recovery Studies; provides topographical continuity to sediment data generated by Subtidal Studies 1 and 3; and complements the large U.S.F.S. Coastal Habitat Study 1A. This project will produce data that, along with other studies, provides a spatial and temporal distribution pattern of the impact of *Exxon Valdez* crude oil.

Budget

ITEM	DETAIL	PROJECT COST
SALARIES		
	Principal Investigator: GS-12; 0.4 FTE	30500
	Fish. Technician GS-7; 0.2 FTE	7093
TRAVEL		
	1 RT JNU-ANCH MEETING $500 + $196/D Per Diem, 3d	1032
CONTRACTS		0
EQUIPMENT		0
SUPPLIES		
	Misc.: software, report production, etc.	1375
TOTAL COSTS		40000

Effects of the Exxon Valdez oil spill on the distribution and abundance of humpback whales in Prince William Sound and Southeast Alaska.

Study ID Number: Marine Mammal Study Number 1

Project Leaders: Marilyn E. Dahlheim and Thomas R. Loughlin

Lead Agency: National Oceanic and Atmospheric Administration

Statement of Justification

During 1989 and 1990, photographs of individual humpback whales occurring in Prince William Sound and Southeast Alaska were collected from May to September to assess the impact of the Exxon Valdez oil spill on humpback whale life history and ecology. In Prince William Sound, research vessels traversed approximately 20,000 nautical miles in search of whales or while photographing whales; reflecting 547 days of field research. In Southeast Alaska, 230 days were spent conducting field research during the 1989 season to determine if Prince William Sound humpback whales were relocating to other areas.

In 1989, photographic analysis of Prince William Sound humpbacks revealed 59 identifiable whales in 119 encounters. In Southeast Alaska, a total of 516 whales were identified in 1989, representing 2,448 encounters. During the 1990 season, photographic analysis of Prince William Sound humpbacks revealed 66 identifiable whales in 201 encounters. The total count represents the largest number of humpback whales ever photographed in Prince William Sound. A decline in the number of Prince William Sound humpback whales was not identified.

The distribution of whales in Prince William Sound during the 1989 season was compared to that collected in 1988. In 1988, more whales used Lower Knight Island Passage area. The effect of increased vessel and aircraft traffic may be a factor responsible for the whale redistribution pattern observed in 1989. The distribution of whales in Prince William Sound during the 1990 season was compared to previous data. No apparent shift in distribution was noted in 1990. No observations were made of humpback whales swimming through oil. Despite considerable effort, Prince William Sound humpback whales were not observed during concurrent photographic studies in Southeast Alaska.

Synthesis of these data and the review of available scientific literature will allow the preparation of a final report which provides an interpretation of the results. This information may be useful to help manage the North Pacific's endangered humpback whale population. Accordingly, preparation of a final report is warranted.

PROJECTED EXPENDITURE BREAKDOWN

Line 100 - Salaries

1 Laboratory Assistant, GS-9 (temporary) 5 months x $3.0K/mo
Final data analysis and writeup

Total $15,000.00

Assessment of Injuries to Killer Whales in Prince William Sound and Southeast Alaska

Study ID Number: Marine Mammal Study Number 2

Project Leaders: Marilyn E. Dahlheim and Thomas R. Loughlin

Lead Agency: National Oceanic and Atmospheric Administration

Statement of Justification

Photographs of individual killer whales occurring in Prince William Sound were collected from May to September in 1989, 1990, and 1991 to assess the potential impacts of the Exxon Valdez oil spill on killer whale life history and ecology. Research vessels have traversed over 25,000 nautical miles in search of whales or while photographing whales, reflecting 617 days of field research for the three-year period. An unusually high number of killer whales were reported missing from one of the resident pods named AB pod. The stability of resident pods of killer whales is such that when an animal is listed as missing for more than one year, that animal is considered dead. Prior to the oil spill, the number of whales in AB pod changed from 35 to 36 (1984-1988), indicating an increasing trend in pod numbers. During this time period, 8 whales died and 9 whales were born. During 1989, 7 whales were reported missing. During 1990, six additional whales were added to the list. This represents a mortality rate of approximately 20%; an order of magnitude greater than that seen in the 20-year study in British Columbia and Washington State (1.8%) and more than three times the average mortality rate (6.1%) seen in AB pod during the 1984-88 period. In 1991, one whale was reported missing and one whale was born into AB pod. In addition to missing whales in this pod, significant changes occurred in the pod's social structure. Although carcasses of missing whales have not been found, there is a correlation between the discovery of unusually high mortality in AB pod and the Exxon Valdez oil spill.

A final report summarizing our three-year investigations of killer whale damage assessment work is warranted. This opportunity will permit us to evaluate all aspects of the study. A more complete analysis of data will be conducted. This synthesis is also important for our continued research on killer whales under our restoration studies.

PROJECTED EXPENDITURE BREAKDOWN

Line 100 - Salaries

GS-12 Dahlheim (PI) 5 months at $4,200/mo

TOTAL $21,000.00

Line 200 - Travel

2 RT Seattle, WA to Alaska at $600/trip $1,200.00
Per diem at $120/day x 5 days = $700.00

TOTAL $ 2,000.00

Line 300 - Contracts

Contracts for additional/final analysis of killer whale photo-identification studies and workshop, if needed.

TOTAL $12,000.00

GRAND TOTAL $35,000.00

PROJECT: MARINE MAMMAL 6 - ASSESSMENT OF MAGNITUDE, EXTENT, AND DURATION OF OIL SPILL IMPACTS ON SEA OTTERS

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary	$110,000.00
[GS 12 - .6 FTE GS 11 - .6 FTE GS 7 - .6 FTE GS 5 - .6 FTE]	
Travel	5,000.00
Contracts	85,000.00
[AFIP/EPA, hydrocarbon equipment transfer]	
Supplies	0.00
Equipment	0.00
TOTAL	200,000.00

BACKGROUND/JUSTIFICATION: The major NRDA studies on sea otters included: (a) estimates of distribution and abundance through aerial and boat surveys; (b) radio telemetry work to estimate reproduction and document survival rates and sea otter movements; (c) recovery of carcasses in the spill zone to determine age and evaluate patterns of mortality; (d) toxicology and pathology work such as histological examination of tissue samples, necropsy of several hundred carcasses, and analysis of blood, fat and milk for hydrocarbon content; (e) standard clinical evaluation of blood samples to determine health/physiological status; (f) determination of prey species and collection of samples for hydrocarbon analysis; and (g) modelling work to estimate numbers of otters exposed to oil and population recovery.

Damages to sea otters resulting from the oil spill included the recovery of 1,011 dead sea otters from within the spill zone. A synthesis of loss estimates suggest between 3,500 and 5,500 sea otters may have died as a result of acute exposure to oil. Chronic damages to sea otters may result from either sub-lethal initial exposure and continued exposure to environmental hydrocarbons. Preliminary findings of Coastal Habitat and Shellfish studies have identified elevated levels of hydrocarbons in intertidal and subtidal sediments and in several species of benthic marine invertebrates identified as sea otter prey. Continuing injury is indicated by significantly higher numbers of prime age sea otter carcasses being recovered post-spill than pre-spill in western PWS and continued declines in sea otter abundance in oiled areas. Post-weaning pup mortality in the winter 1990/91 was significantly higher in western PWS than eastern PWS. Significant differences in blood parameters detected for adult males between eastern and western PWS; results suggest systemic hypersensitivity reactions in western males.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed. A final report has not been prepared. The preparation of a final report will be essential for understanding the injuries the spill caused to sea otters. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $2,565,000 will have been spent on sea otter NRDA studies through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the oil spill on sea otters and provide the public with the results of the government's investment.

ARCHAEOLOGY DAMAGE ASSESSMENT, OIL YEAR 4
Office of History and Archaeology

SUMMARY STATEMENT

This is the closeout project for the archaeology injury assessment studies which began during Oil Year 3. The project will complete the analysis of laboratory test results and artifact collections for the state field injury assessment of direct oiling effects on historic and prehistoric site dating. A synthesis of the data from all of the injury assessment studies will be put together and used to set up the basis for restoration decisions. Future restoration projects will include archaeological site protection through enhanced monitoring and law enforcement, data recovery from excavations, museum exhibits using new artifact collections and information, school curriculum units and educational publications for the general public.

TITLE: ARCHAEOLOGICAL DAMAGE ASSESSMENT
OIL YEAR 4

STUDY I.D. NUMBER: ARCH1

PROJECT LEADER: Douglas R. Reger

LEAD AGENCY: Alaska Department of Natural Resources
Office of History and Archaeology

COST OF PROPOSAL: $206,850

DATES OF PLAN: March 1, 1992 - February 28, 1993

SIGNATURE: _____ 1-31-92
Project Leader Date

_____ 1-31-92
Organization Leader Date

_____ 1-31-92
Organization Finance Officer Date

ARCHAEOLOGY DAMAGE ASSESSMENT, OIL YEAR 4
Alaska Office of History and Archaeology

DETAILED PLAN

Introduction:

This is the closeout project for the archaeology injury assessment studies which began during Oil Year 3. The project will complete the analysis of laboratory test results and artifact collections for the state field injury assessment of the effects of petroleum contamination on radiocarbon dating at intertidal archaeological sites. To date, field work has been completed, collections catalogued, background documents assembled, maps for half the sites prepared, charcoal/wood and sediment samples submitted for analysis, and preliminary analysis of artifact collections begun. Also to be completed as part of the closeout Oil Year 4 project is a joint State-Federal effort to collate information in existing agency files about injury to sites.

After all the injury studies are completed, the data will synthesized and used for restoration decisions. Studies included in this synthesis will be the U.S. Forest Service's Oil Year 3 contract with the State University of New York at Binghamton (SUNY-Binghamton) which calls for test excavations at specified sites, archaeological surveys of sample beach segments, and a GIS-based model projecting site locations, numbers of sites, and oiling to other parts of the spill impact area not intensively examined. Evaluation of the SUNY-Binghamton study, which will be completed October 1992, will include checking the accuracy of the GIS locational information and recalculating locations when necessary. Additionally, a determination of site significance will be made to evaluate the importance of each site and facilitate restoration decisions.

Objectives:

Collections Study/Injury Report Preparation (1.6 FTE): The first 4 months of Oil Year 4 are needed to complete the study of data collected during the 1991 state field injury assessment project. Radiocarbon samples are being processed by Geochron Laboratories in Cambridge, MA, with results expected in February or March. Sediment samples were submitted to the NOAA-NMFS laboratory in Seattle for measurement of petroleum content. Results of those tests are expected at the end of March or early April.

Archaeological collection study is expected to be completed by mid-April and write-up of the final scientific report is projected for May. The analysis currently in progress includes artifact description and classification, inter-site artifact comparison, fauna and flora identification and site testing description. Integration and interpretation of those individual studies together with radiocarbon and sediment analyses will be the substance of the final scientific report. The effect of petroleum contamination on the radiocarbon dating process as a potential source of injury will be examined. Collation of data from agency

documentation describing past activity at sites damaged from clean-up activity will be completed by April.

Injury Report Synthesis and Damage Assessment (1.00 FTE): The findings of the archaeological site injury studies need to be analyzed and synthesized to determine extent of damage and the most appropriate restoration. Determinations of importance of injured sites requires placing the sites into the overall context of Spill area cultural chronology and determining what information each site contains. A detailed cultural chronology for much of the Spill area was unknown prior to the assessment studies, but can be outlined based on the data recovered by the State and SUNY-Binghamton studies. Site testing and analysis of data from both injury assessment field studies will allow refinement of local variations in the broader Gulf of Alaska cultural chronology. Many of the sites will provide archaeologists an opportunity to examine in detail specific questions such as definition of subsistence practices or what was the density of the population for an area.

The procedures for determining significance of sites and for mitigating or restoring injury are commonly used by federal agencies and the Alaska State Historic Preservation Office. The process will include defining why each site is important, how the injury affects the importance of each site, and what kind of action is necessary to maintain that value. Various procedures for determining the appropriate method of injury mitigation are outlined under the Archaeological Resources Protection Act, implementing regulations of the National Historic Preservation Act of 1966 as amended (36CFR800), and in the Alaska Historic Preservation Act. Future restoration projects will include archaeological site protection through enhanced monitoring and law enforcement, additional data recovery from excavations, museum exhibits using new artifact collections and information, school curriculum units and publications for the general public.

GIS (0.8 FTE): Prior to analyzing the information and model generated by the injury assessment studies, review of the accuracy and conclusions in the studies will be necessary. Accuracy of the re-computed site locations for the modeling study is a major area of concern. A look at preliminary information provided indicates some problems with the site locations. Locational information was recomputed from the inventory maintained by the State Historic Preservation Office to apply it to existing GIS shoreline data. Re-computations were necessary because of the lack of congruence between the published U.S.G.S. maps used in the State archaeological site inventory and the digitized shoreline in the GIS database. Reworking site locations to fit the GIS shoreline for modeling introduced errors which can in some cases only be corrected by checking the original reference maps in the State Historic Preservation Office. Site locations relative to geographic features on the GIS based shoreline will be confirmed with the original U.S.G.S. reference maps.

Inventory Update (0.35 FTE): Information generated from the SUNY-Binghamton study needs to be reviewed and incorporated into the existing statewide inventory of archaeological sites in the State Historic Preservation Office. The study will provide information about new sites as well as updates of sites previously entered in the statewide inventory. That

inventory, the centralized file of archaeological sites in the state, will be used to review impact of various resource restoration projects on archaeological resources, present oil spill related activities, and future spills.

Deliverables:

The scientific report of the State field injury assessment study will be finalized in May. The SUNY-Binghamton study is due by October 1992. A synthesis of findings with assessment of damages will be completed by January 1, 1993. The deliverable products resulting from these activities will be a listing of injured sites, an assessment of damage to each site, and a recommendation for actions to restore or salvage data from each site. Another deliverable will be an updated statewide inventory. Correct site locations entered on the GIS database will be a non-document deliverable.

BUDGET

Personal Services: $195,000 (45 months, 3.75 FTE)
The first 4 months of personal services will be applied primarily to completion of the State field injury assessment study begun during 1991. It was planned for completion during Spring 1992 and the final delivery date depends on when results of contracted laboratory analyses are provided. Some GIS, collation of agency site information, and damage assessment activities will also occur during this period. The remaining activities will occur in the final 8 months of the Oil Year.

Travel: Minimal travel funds are budgeted to travel to Fairbanks to access the Rasmuson Library and Archives. The EXXON documents from the Spill archaeology program are housed in the UAF archives. Two trips to Juneau are anticipated to the State Library and for administrative activities. Per diem for the travel is included.

Contractual: This category supports photography and processing, vehicle rental, and preparation of the injury study report and the damage assessment report.

Supplies: Scientific supplies for stabilizing and preserving artifacts are included here as well as computer supplies, paper, and other office supplies.
No equipment costs are anticipated under this proposal.

PROJECT: Archaeological Damage Assessment, Oil Yea	PROJECT LEADER: Douglas R. Reger	
PROJECT NO: Arch 1	LOCATION: Anchorage	PHONE: 762-2622

LINE ITEM	REQUEST		
	4 MONTHS	3 MONTHS	12 MONTHS
71000	$ 99,000	$ 96,000	$195,000
72000	2,800	2,300	5,100
73000	2,500	2,000	4,500
74000	1,250	1,000	2,250
75000	--	--	--
TOTAL	$105,550	$101,300	$206,850

This is to be the department's OY4 budget request f the above project. On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

This is the closeout project for the archaeology injury assessment studies which began during Oil Year 3. The project will complete the analysis of laboratory test results and artifact collections for the state field injury assessment of the effects of direct oiling on the dating of historic and prehistoric sites. A synthesis of the data from all the injury assessment studies will be put together and used to set up the basis for restoration decisions.

71000 % IAL SERVICES - LIST POSITIONS (AMOUNT % BE CALCULATED FOR 100)

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MONTHS	8 MONTHS	LOCATION	INCUMBENT	SUPERVISOR
105243	18L	Archaeologist II	4	8	Anchorage	D. Reger	R. Shaw
105242	16F	Archaeologist I	2	4	Anchorage	R. Dale	D. Reger
105239	16F	Archaeologist I	4	3	Anchorage	J.D. McMahan	R. Reger
105234	21F	Chief, History & Archaeology	.5	.5	Anchorage	R. Shaw	J. Bittner
105237	18F	Archaeologist II	2	--	Anchorage	C. Holmes	R. Shaw
105190	16A	Archaeologist I	3	--	Anchorage	M. Jesperson	T. Smith
105105	8D	Clerk Typist III	1	2	Anchorage	D. Wassilie	J. Bittner
50C042	Grad. Intern	Graduate Intern	4	4	Anchorage	M. Pipkin	D. Reger
50B053	Student Intern	Student Intern	3	--	Anchorage	T. McCann	D. Reger
		TOTAL MONTHS:	23.5	21.5			

3.75 FTE Total

72 ...VEL	...IPTION	4 MOS		2 MO
72240 Field Travel				
72270 Administrative Travel	3 trips UAF Archives, 2 trips Juneau	$ 600	$1,300	$1,900
72300 Conventions and Meeting Travel				
72360 Moving or Relocation Expense				
72500 Per Diem		2,200	1,000	3,200
	SUBTOTAL	$2,800	$2,300	$5,100

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MO
73100 Professional Services	Photography, Photo processing	$1,500	$1,000	$2,500
73300 Communication				
73400 Transportation				
73420 Trans-State Equip Fleet Fees	Vehicle rental		500	500
73500 Advertising, Printing & Binding	Report printing	1,000	500	1,500
73600 Public Utilities Services				
73700 Minor Repair & Maintenance				
73800 Rental-Land, Buildings & Space				
73860 Rental-Machinery & Equipment				
73900 Other Expenditures & Services				
	SUBTOTAL	$2,500	$2,000	$4,500

74000 ? IES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74220 Office & Library Supplies		$ 500	$ 500	$1,000
74520 Professional & Scientific Supplies		500		500
74560 Data Processing Supplies		250	500	750
74600 Other Operating Supplies				
74650 Repair & Maintenance Supplies				
OTHER				
OTHER				
OTHER				
OTHER				
	SUBTOTAL	$1,250	$1,000	$2,250

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip				
75790 Communication Equipment				
75830 Data Processing Equipment				
75870 Laboratory & Scientific Equip				
75940 Special Equipment				
76050 Furniture & Office Equipment				
OTHER				
OTHER				
OTHER				
	SUBTOTAL	-0-	-0-	-0-

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: FS #1 PLUS BIOMETRIC SUPPORT PROJECT LEADER: Sam Sharr

PROJECT NO: Fish/Shellfish #1 LOCATION: Cordova PHONE: (907) 424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	48.2	10.0	58.2
72000	1.7	1.1	2.8
73000	1.2	1.1	2.3
74000	2.1	0.0	2.1
75000	0.2	0.0	0.2
TOTAL	53.4	12.2	65.6

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This project will complete the analysis of data from NRDA and restoration studies designed to improve the accuracy of wild pink salmon escapement estimates. Data analyses from ten weirs and more than 40 selected streams in the vicinity of each weired stream will be completed and summarized. Estimates of aerial survey bias and stream life from 1990 and 1991 studies represent a major advance in escapemnt estimation procedures. Results will dramatically improve past and future escapement estimates in PWS will lead to more accurate and precise stock specific fisheries management. The commercial fishery in PWS is of major economic importance and also plays a major role in regulating populations of salmon in PWS. Wild stocks which were damaged by the EVOS play a major role in the PWS ecosystem and are frequently intercepted in mixed stock fisheries dominated by hatchery fish. Accurate and timely estimates of spawning escapemnts are critical for biologists who seek to insure reproductive success for wild populations by manipulating fisheries. Data analyses completed by this project will enable fisheries managers to improve inseason escapement estimates and identify escapment shortfalls. Damaged wild populations can be protected and restored if shortfalls can be quikly identified and corrected for by selectively reducing harvests in areas where exploitation of damaged stocks might occur.

PROJECT: Biometric Support for FS 1 CLOSEOUT PROJECT LEADER: Linda Brannian

PROJECT NO: FS1 LOCATION: Anchorage PHONE: 267-2118

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	14.3	0.0	14.3
72000	0.5	0.0	0.5
73000	0.5	0.0	0.5
74000	0.1	0.0	0.1
75000	0.2	0.0	0.2
TOTAL	15.6	0.0	15.6

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by fine item, of the type of information needed.

COMMENTS:

Includes 1 mm Biometrician II and 2 mm Analyst/Programmer II.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MO	8 MO	LOCATION	INCUMBENT	SUPERVISOR
1271	19E	Biometrician II	1		Anchorage	Bue	Brannian
7087	15A	Analyst/Programmer II	2		Cordova	Vacant	Evans

FULL TIME EQUIVALENTS – FTEs (Months/12): 0.25

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	1 Trip to Cordova	0.3	0.0	0.3
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	Per Diem	0.2	0.0	0.2
		0.0	0.0	0.0
	SUBTOTAL	0.5	0.0	0.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Telephone; Data Line; Postage	0.0	0.0	0.0
73400 Transportation	Air Charter; Air Freight	0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Visual Aid Preparation; Special Printing	0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Literature Search	0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.5	0.0	32.1

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies	Scientific Reference Material	0.0	0.0	0.0
74560 Data Processing Supplies	Computer Paper; ribbons, etc.	0.0	0.0	0.0
74600 Other operating Supplies	Software	0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Computer Repair	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.0	0.1

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Microcomputer Parts	0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	File Cabinets	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.2	0.0	0.2

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: NRDA F/S Study #1
PROJECT NO: 11822301

PROJECT LEADER: Sam Sharr
LOCATION: Cordova PHONE: 424-3212

LINE ITEM	REQUEST 4 MONTHS	8 MONTHS	12 MONTHS
71000	33.9	10.0	43.9
72000	1.2	1.1	2.3
73000	0.7	1.1	1.8
74000	2.0	0.0	2.0
75000	0.0	0.0	0.0
TOTAL	37.8	12.2	50.0

This is to be the department's FY 93 budget request for the above project. On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This project will complete the analysis of data from NRDA and restoration studies designed to improve the accuracy of wild pink salmon escapement estimates. Data analyses from ten weirs and more than 40 selected streams in the vicinity of each weired stream will be completed and summarized. Estimates of aerial survey bias and stream life from 1990 and 1991 studies represent a major advance in escapemnt estimation procedures. Results will dramatically improve past and future escapement estimates in PWS will lead to more accurate and precise stock specific fisheries management. The commercial fishery in PWS is of major economic importance and also plays a major role in regulating populations of salmon in PWS. Wild stocks which were damaged by the EVOS play a major role in the PWS ecosystem and are frequently intercepted in mixed stock fisheries dominated by hatchery fish. Accurate and timely estimates of spawning escapemnts are critical for biologists who seek to insure reproductive success for wild populations by manipulating fisheries. Data analyses completed by this project will enable fisheries managers to improve inseason escapement estimates and identify escapment shortfalls. Damaged wild populations can be protected and restored if shortfalls can be quikly identified and corrected for by selectively reducing harvests in areas where exploitation of damaged stocks might occur.

71000 PERSONAL SERVICES – LIST POSITIONS (AMOUNTS WILL BE CALULATED FOR YOU)

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MONTH	OT HOUR	8 MONTH	OT HOUR	LOCATION	INCUMBENT	SUPERVISOR
11–7043	16A	FB II	4	0	2	0	Cordova	Vacant	Sharr
11–N232	14/A	FB I	1	40	0	0	Cordova	Craig	Sharr
11–N185	13/A	RA I	1	30	0	0	Cordova	Rosen	Sharr
11–N227	11/A	FWT III	1	20	0	0	Cordova	Saddler	Sharr

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel	3 Rnd Trips Cordova/Anchorage (Biometrics support)	0.2	0.2	0.4
72300 Conventions & Meeting Travel	1 Out of State Rnd Trip (scientific meeting)	0.0	0.5	0.5
72360 Moving or Relocation Expense		0.0	0.0	0.0
72500 Per Diem	14 days @ $100/Day	1.0	0.4	1.4
		0.0	0.0	0.0
	SUBTOTAL	1.2	1.1	2.3

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Phones	0.2	0.2	0.4
73400 Transportation		0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing & Binding	Slide and graphic preparation for meetings	0.0	0.4	0.4
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair & Maintenance	Computer repair	0.5	0.5	1.0
73800 Rental–Land, Buildings & Space		0.0	0.0	0.0
73860 Rental–Machinery & Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.0	0.0	0.0
	SUBTOTAL	0.7	1.1	1.8

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74220 Office & Library Supplies	Pencils, paper, general	0.5	0.0	0.5
74520 Professional & Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies	Diskettes,Spreadsheet upgrades, Statistical software	1.5	0.0	1.5
74600 Other Operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	2.0	0.0	2.0

75000 EQUIPMENT	DESCRIPTION	8 MOS	4 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
76050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: FS #2 PLUS BIOMETRIC SUPPORT PROJECT LEADER: Sam Sharr

PROJECT NO: Fish/Shellfish #2 LOCATION: Cordova PHONE: (907) 424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	21.8	6.4	28.2
72000	1.7	1.1	2.8
73000	0.8	1.2	2.0
74000	1.6	2.0	3.6
75000	0.1	0.0	0.1
TOTAL	26.0	10.7	36.7

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: The goal of this project is to complete analyses and report results of a study to quantify effects of the EVOS on salmon eggs and fry. Results from this study show some of the most significant damage to salmon populations yet demonstrated. Damages include significantly increased egg mortality and high incidences of somatic, cellular, and genetic abnormalities in alevins and fry from oiled streams. Summarization and publication of these results is important fro the completion of damage assessment and for the planning of future restoration activities.

PROJECT: Biometric Support for FS2 CLOSEOUT PROJECT LEADER: Brannian

PROJECT NO: FS 2 LOCATION: Anchorage PHONE: 267-2118

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	5.8	0.0	5.8
72000	0.5	0.0	0.5
73000	0.2	0.0	0.2
74000	0.1	0.0	0.1
75000	0.1	0.0	0.1
TOTAL	6.7	0.0	6.7

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Includes 1 mm Biometrician II.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MO	8 MO	LOCATION	INCUMBENT	SUPERVISOR
1271	19E	Biometrician II	1		Anchorage	Bue	Brannian

FULL TIME EQUIVALENTS – FTEs (Months/12): 0.08

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	1 Trip Cordova	0.3	0.0	0.3
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	Per Diem	0.2	0.0	0.2
		0.0	0.0	0.0
	SUBTOTAL	0.5	0.0	0.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Telephone; Data Line; Postage	0.0	0.0	0.0
73400 Transportation	Air Charter; Air Freight	0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Visual Aid Preparation; Special Printing	0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Literature Search	0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.2	0.0	13.0

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies	Scientific Reference Material	0.0	0.0	0.0
74560 Data Processing Supplies	Computer Paper; ribbons, etc.	0.0	0.0	0.0
74600 Other operating Supplies	Software	0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Computer Repair	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.0	0.1

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Microcomputer Parts	0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	File Cabinets	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.0	0.1

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: NRDA F/S Study #2
PROJECT NO: 11822351

PROJECT LEADER: Sam Sharr
LOCATION: Cordova PHONE: 424-3212

LINE ITEM	REQUEST 4 MONTHS	8 MONTHS	12 MONTHS
71000	16.0	6.4	22.4
72000	1.2	1.1	2.3
73000	0.6	1.2	1.8
74000	1.5	2.0	3.5
75000	0.0	0.0	0.0
TOTAL	19.3	10.7	30.0

This is to be the department's FY 93 budget request for the above project. On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: The goal of this project is to complete analyses and report results of a study to quantify effects of the EVOS on salmon eggs and fry. Results from this study show some of the most significant damage to salmon populations yet demonstrated. Damages include significantly increased egg mortality and high incidences of somatic, cellular, and genetic abnormalities in alevins and fry from oiled streams. Summarization and publication of these results is important fro the completion of damage assessment and for the planning of future restoration activities.

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: NRDA F/S Study #2
PROJECT NO: 11822351

PROJECT LEADER: Sam Sharr
LOCATION: Cordova PHONE: 424-3212

LINE ITEM	4 MONTHS	REQUEST 8 MONTHS	12 MONTHS
71000	16.0	6.4	22.4
72000	1.2	1.1	2.3
73000	0.6	1.2	1.8
74000	1.5	2.0	3.5
75000	0.0	0.0	0.0
TOTAL	19.3	10.7	30.0

This is to be the department's FY 93 budget request for the above project. On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:
This budget is for close out of egg and fry study. Steve Moffitt is no longer directly invoved with the project but has been in charge of it for three years and will assist in preparing the final report.

71000 PERSONAL SERVICES– LIST POSITIONS (AMOUNTS WILL BE CALULATED FOR YOU)

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MONTH	OT HOUR	8 MONTH	OT HOUR	LOCATION	INCUMBENT	SUPERVISOR
11–7043	16A	FB II	4	0	2	0	Cordova	Vacant	Sharr
11–N232	14/A	FB I	1	40	0	0	Cordova	Craig	Sharr
11–N185	13/A	RA I	1	30	0	0	Cordova	Rosen	Sharr
11–N227	11/A	FWT III	1	20	0	0	Cordova	Saddler	Sharr

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel	3 Rnd Trips Cordova/Anchorage (Biometrics support)	0.2	0.2	0.4
72300 Conventions & Meeting Travel	1 Out of State Rnd Trip (scientific meeting)	0.0	0.5	0.5
72360 Moving or Relocation Expense		0.0	0.0	0.0
72500 Per Diem	14 days @ $100/Day	1.0	0.4	1.4
		0.0	0.0	0.0
	SUBTOTAL	1.2	1.1	2.3

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	
73300 Communication	Phones	0.1	0.3	0.4
73400 Transportation		0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing & Binding	Slide and graphic preparation for meetings	0.0	0.4	0.4
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair & Maintenance	Computer repair	0.5	0.5	1.0
73800 Rental–Land, Buildings & Space		0.0	0.0	0.0
73860 Rental–Machinery & Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.0	0.0	0.0
	SUBTOTAL	0.6	1.2	1.8

74000 SUPPLIES	DESCRIPTION		4 MOS	8 MOS	12 MOS
74220 Office & Library Supplies	Pencils, paper, general		0.5	1.0	1.5
74520 Professional & Scientific Supplies			0.0	0.0	0.0
74560 Data Processing Supplies	Diskettes,Spreadsheet upgrades, Statistical software		1.0	1.0	2.0
74600 Other Operating Supplies			0.0	0.0	0.0
74650 Repair & Maintenance Supplies			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
		SUBTOTAL	1.5	2.0	3.5

75000 EQUIPMENT	DESCRIPTION		8 MOS	4 MOS	12 MOS
75750 Vehicles & Transportation Equip			0.0	0.0	0.0
75790 Communication Equipment			0.0	0.0	0.0
75830 Data Processing Equipment			0.0	0.0	0.0
75870 Laboratory & Scientific Equip			0.0	0.0	0.0
75940 Special Equipment			0.0	0.0	0.0
76050 Furniture & Office Equipment			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
		SUBTOTAL	0.0	0.0	0.0

PROJECT: FS #3 PLUS BIOMETRIC SUPPORT PROJECT LEADER: Sam Sharr

PROJECT NO: Fish/Shellfish #3 LOCATION: Cordova PHONE: (907) 424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	48.6	62.1	110.7
72000	1.1	1.3	2.4
73000	1.0	1.2	2.2
74000	1.2	1.6	2.8
75000	0.3	0.2	0.5
TOTAL	52.2	66.4	118.6

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This is a close out budget for a damage assessment project based on coded-wire tagging. The Tags applied as part of NRDA and restoration activities since 1989 have been partially recovered and the analyses of these data are needed to estimate reductions in salmon production attributable to damage from the EVOS. These data are important to ongoing and future litigation. They are also important to understanding the nature of the spill related damage as well as designing and assessing the success of important management related restoration implementation projects. The commercial fishery in PWS is of major economic importance and also plays a major role in regulating populations of salmon in PWS. Wild stocks which were damaged by the EVOS play a major role in the PWS ecosystem and are frequently intercepted in mixed stock fisheries dominated by hatchery fish. Fisheries cannot be managed to totally exclude the harvest of wild fish without compomising the quality of hatchery fish harvest. However, with prior knowledge of hatchery and wild stock abundance and distributions, fisheries managers can limit interceptions of wild fish. Data from this project guide the design of future tagging projects. Future tagging projects for stock identification will be used to restore salmon populations by selectively reducing harvests of damaged stocks while permiting the continued harvests of valuable hatchery surpluses.

PROJECT: Biometric Support for FS3 CLOSEOUT PROJECT LEADER: Brannian

PROJECT NO: FS3 LOCATION: Anchorage PHONE: 267-2118

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	17.6	9.1	26.7
72000	0.5	0.0	0.5
73000	0.6	0.3	0.9
74000	0.1	0.0	0.1
75000	0.3	0.2	0.5
TOTAL	19.1	9.6	28.7

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Includes 4 mm Biometrician I and 4 mm Analyst/Programmer II.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MO	8 MO	LOCATION	INCUMBENT	SUPERVISOR
7072	17B	Biometrician I	2	2	Anchorage	Evans	Bue
7087	15A	Analyst/Programmer II	2		Cordova	Vacant	Evans

FULL TIME EQUIVALENTS – FTEs (Months/12): 0.50

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	1 Trip Cordova	0.3	0.0	0.3
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	Per Diem	0.2	0.0	0.2
		0.0	0.0	0.0
	SUBTOTAL	0.5	0.0	0.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Telephone; Data Line; Postage	0.0	0.0	0.0
73400 Transportation	Air Charter; Air Freight	0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Visual Aid Preparation; Special Printing	0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Literature Search	0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.6	0.3	58.9

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies	Scientific Reference Material	0.0	0.0	0.0
74560 Data Processing Supplies	Computer Paper; ribbons, etc.	0.0	0.0	0.0
74600 Other operating Supplies	Software	0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Computer Repair	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.0	0.1

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Microcomputer Parts	0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	File Cabinets	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.3	0.2	0.5

ALASKA DEPARTM' 'P FISH & GAME

OY4

PROJECT: NRDA F/S Study #3
PROJECT NO: 11822401

PROJECT LEADER: Sam Sharr
LOCATION: Cordova PHONE: 424-3212

LINE ITEM	4 MONTHS	REQUEST 8 MONTHS	12 MONTHS
71000	31.0	53.0	84.0
72000	0.6	1.3	1.9
73000	0.4	0.9	1.3
74000	1.1	1.6	2.7
75000	0.0	0.0	0.0
TOTAL	33.1	56.8	89.9

This is to be the department's FY 93 budget request for the above project. On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This is a close out budget for a damage assessment project based on coded-wire tagging. The Tags applied as part of NRDA and restoration activities since 1989 have been partially recovered and the analyses of these data are needed to estimate reductions in salmon production attributable to damage from the EVOS. These data are important to ongoing and future litigation. They are also important to understanding the nature of the spill related damage as well as designing and assessing the success of important management related restoration implementation projects. The commercial fishery in PWS is of major economic importance and also plays a major role in regulating populations of salmon in PWS. Wild stocks which were damaged by the EVOS play a major role in the PWS ecosystem and are frequently intercepted in mixed stock fisheries dominated by hatchery fish. Fisheries cannot be managed to totally exclude the harvest of wild fish without compomising the quality of hatchery fish harvest. However, with prior knowledge of hatchery and wild stock abundance and distributions, fisheries managers can limit interceptions of wild fish. Data from this project guide the design of future tagging projects. Future tagging projects for stock identification will be used to restore salmon populations by selectively reducing harvests of damaged stocks while permiting the continued harvests of valuable hatchery surpluses.

71000 PERSONAL SERVICES– LIST POSITIONS (AMOUNTS WILL BE CALULATED FOR YOU)

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MONTH	OT HOUR	8 MONTH	OT HOUR	LOCATION	INCUMBENT	SUPERVISOR
11–7023	16/B	FB II	4	0	8	0	Anchorage	Chalk	Fried
11–N230	14/A	FB I	3	40	4	40	Cordova	Peckham	Sharr

7	TRAVEL	DESCRIPTION		4 MOS	8 MOS	12 MOS
72240	Field Travel			0.0	0.0	0.0
72270	Administrative Travel	2 Rnd Trips Cordova/Anchorage (Biometrics support)		0.2	0.2	0.4
72300	Conventions & Meeting Travel	1 Out of State Rnd Trip (scientific meeting)		0.0	0.5	0.5
72360	Moving or Relocation Expense			0.0	0.0	0.0
72500	Per Diem	10 days @ $100/Day		0.4	0.6	1.0
				0.0	0.0	0.0
			SUBTOTAL	0.6	1.3	1.9

73000	CONTRACTUAL	DESCRIPTION		4 MOS	8 MOS	12 MOS
73100	Professional Services					
73300	Communication	Phones		0.1	0.2	
73400	Transportation			0.0	0.0	0.0
73420	Trans–State Equip Fleet Fees			0.0	0.0	0.0
73500	Advertising, Printing & Binding	Slide and graphic preparation for meetings		0.0	0.4	0.4
73600	Public Utilities Services			0.0	0.0	0.0
73700	Minor Repair & Maintenance	Computer repair		0.3	0.3	0.6
73800	Rental–Land, Buildings & Space			0.0	0.0	0.0
73860	Rental–Machinery & Equipment			0.0	0.0	0.0
73900	Other Expenditures & Services			0.0	0.0	0.0
			SUBTOTAL	0.4	0.9	1.3

75000 EQUIPMENT	DESCRIPTION		8 MOS	4 MOS	12 MO
75750 Vehicles & Transportation Equip			0.0	0.0	0.0
75790 Communication Equipment			0.0	0.0	0.0
75830 Data Processing Equipment			0.0	0.0	0.0
75870 Laboratory & Scientific Equip			0.0	0.0	0.0
75940 Special Equipment			0.0	0.0	0.0
76050 Furniture & Office Equipment			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
OTHER			0.0	0.0	0.0
		SUBTOTAL	0.0	0.0	0.0

PROJECT: Early Marine Salmon Injury PROJECT LEADER: Mark Willette

PROJECT NO: F/S #4A LOCATION: Cordova PHONE: (907) 424-3214

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0	16,020	16,020
72000	0	600	600
73000	0	780	780
74000	0	1,150	1,150
75000	0	450	450
TOTAL	0	19,000	19,000

BUDGET SUMMARY OF BIOMETRIC SUPPORT COSTS ONLY.

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	52,901	38,747	91,648
72000	1,000	2,800	3,800
73000	38,000	0	38,000
74000	1,000	2,000	3,000
75000	0	0	0
TOTAL	92,901	43,547	136,448

BUDGET SUMMARY WITH NO BIOMETRIC SUPPORT COSTS.

PROJECT: Early Marine Salmon Injury PROJECT LEADER: Mark Willette

PROJECT NO: F/S #4A LOCATION: Cordova PHONE: (907) 424-3214

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	52,901	54,767	107,668
72000	1,000	3,400	4,400
73000	38,000	780	38,780
74000	1,000	3,150	4,150
75000	0	450	450
TOTAL	92,901	62,547	155,448

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

BUDGET SUMMARY INCLUDING BIOMETRIC SUPPORT COSTS.

COMMENTS:

This damage assessment project has provided evidence of reduced growth and fry-to-adult survival among juvenile salmon in oiled nearshore habitats. However, additional sample and data analysis is needed to quantify the effect of oil contamination on fry growth and fry-to-adult survival and to adequately establish that environmental and oil effects are not confounded. This will be accomplished by comparing fry food consumption and food abundance between oiled and non-oiled areas. Expected temperature-specific growth will also be compared to actual growth to establish that low food abundance did not cause the low growth rates observed in oiled areas. An experiment will be conducted and additional samples will be analyzed to provide the data needed for these analyses. The data obtained during the three years of field studies will be completely analyzed and conclusions synthesized in a final report. The results from this study will provide direct quantitative estimates of oil impacts on salmon at the population level.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MOS	8 MOS	12 MOS	LOCATION	INCUMBENT	SUPERVISOR
11-5187	14C	Fishery Biologist I	4	2	6	Soldotna	P. Shields	G. Kyle
11-	14C	Fishery Biologist I	4	2	6	Soldotna	B. Glick	G. Kyle
11-5357	14J	Fishery Biologist I	4	1.5	5.5	Soldotna	J. Edmundson	G. Kyle
NEW	16A	Research Analyst II	1	4	5	Anchorage	Vacant	J. Hasbrouck
11-7030	19C	Biometrician II	0	3	3	Anchorage	J. Hasbrouck	W. Hauser
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			
			0	0	0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 1.1 1 2.1

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	2 Cor. to Sol.; 2 Anch. to Cor.	0	1000	1000
72270 Administrative Travel		0	0	0
72300 Conventions/Meeting Travel	Project reviewers meetings (3)	500	1000	1500
72360 Moving/Relocation Expenses		0	0	0
72500 Per Diem	Per diem	500	1400	1900
		0	0	0
	SUBTOTAL	1000	3400	4400

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	Temperature-growth experiment	38000	0	38000
73300 Communication	Phone and postage	0	360	360
73400 Transportation		0	0	0
73420 Trans-State Equip Fleet Fees		0	0	0
73500 Advertising, Printing, Binding		0	0	0
73600 Public Utilities Services		0	0	0
73700 Minor Repair/Maintenance	Misc. equipment repair	0	150	150
73800 Rental-Land/Buildings/Machinery		0	0	0
73860 Rental-Machinery/Equipment		0	0	0
73900 Other Expenditures & Services	Training	0	270	270
		0	0	0
	SUBTOTAL	38000	780	38780

74000 SU. ES	DES PTION	4 MOS	8 MOS	e 4 __ MOS
74420 Office & Library Supplies	Misc. office supplies	0	450	450
74520 Professional/Scientific Supplies	Misc. laboratory supplies	500	1000	1500
74560 Data Processing Supplies	Misc. data processing supplies	500	1700	2200
74600 Other operating Supplies		0	0	0
74650 Repair & Maintenance Supplies		0	0	0
OTHER		0	0	0
OTHER		0	0	0
OTHER		0	0	0
	SUBTOTAL	1000	3150	4150

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0	0	0
75790 Communication Equipment		0	0	0
75830 Data Processing Equipment	Computer hardware	0	450	450
75870 Laboratory & Scientific Equip		0	0	0
75940 Special Equipment		0	0	0
75050 Furniture & Office Equipment		0	0	0
OTHER		0	0	0
OTHER		0	0	0
OTHER		0	0	0
	SUBTOTAL	0	450	450

Study Title: Impact of Oil Spill on Juvenile Pink and Chum Salmon and their Prey in Critical Nearshore Habitats

Study ID Number: Fisheries Study Number 4 (NMFS Component)

Project Leader: Alex C. Wertheimer

Lead Agency: NOAA/NMFS/Auke Bay Laboratory

Cost of Proposal: 120K

Study Dates: March 1 1992 - February 28 1993

Project Statement Summary

Preliminary results from F/S-4 have documented effects of the Exxon Valdez spill to juvenile pink salmon, including exposure and hydrocarbon body-burden, MFO induction, and reduced growth in oiled areas. The hydrocarbon profiles in contaminated pink salmon indicate that ingestion of oil, either directly or through contaminated prey, was the route of contamination. Density of juveniles, abundance of prey, and temperatures in the areas sampled do not explain the differences in growth observed. Field studies in 1989 and 1990 showed that temperatures and abundance of zooplankton prey not different between oiled and non-oiled areas sampled; littoral epibenthos prey resources tended to be higher in oiled areas; and abundance of juvenile salmon was higher in non-oiled areas. The differences in growth are thus attributed to effects of oil contamination. In support of this conclusion, preliminary analysis of laboratory experiments in 1991 showed that ingestion of whole oil in food can adversely affect growth and survival of juvenile pink salmon.

Project Justification

Many of the results and conclusions from F/S-4 regarding effects of oil contamination to juvenile salmon, as detailed in the 1991 Status Report, are preliminary and tentative at this time because of incomplete sample and data processing. From the 1989/1990 field collections, there are still outstanding hydrocarbon analyses; incomplete transfer of data on hydrocarbon analyses actually done; outstanding contracts on meiofauna analyses from experimentally oiled sediments (University of Alaska); epibenthic crustaceans (Pentec Environmental); MFO's (Applied Marine Science); and pink salmon otoliths (Washington Department of Fisheries). From the 1991 oil-ingestion experiment, growth measures from RNA/DNA assays and otolith increment analysis are incomplete; and no data are yet available for hydrocarbon tissue measures or MFO induction. When these data sets are completed, there will be an immediate need to update preliminary analyses, draw final conclusions, and process the information into formal final form beyond the status reports previously submitted to the NRDA process. There will also be a demand for continued participation at review and synthesis meetings.

Budget for Oil Spill Year 4

	FY-92	FY-93	TOTAL
LABOR	54	32	86
TRAVEL	2	2	4
CONTRACTS	11	0	11
SUPPLIES	5	7	12
EQUIPMENT	7	0	7
TOTAL	79	41	$120 K

Cost Breakdown

ITEM	
100 SALARIES	
2 Fisheries Biologists, GS-9 1.2 FTE	
Salary	$42 K
Benefits	12
1 Fisheries Technician, GS-6 1 FTE	
Salary	25
Benefits	7
200 TRAVEL	
2 RT Juneau to Anchorage for meetings @949/trip ($550 air fare/car, $399 per diem @ $133/d)	2
2 RT Juneau to Seattle for meetings @ $912/trip ($550 air fare/car, $412 per diem @ $103/d)	2
300 CONTRACTS	
RNA/DNA Analysis	5
Mixed function oxidase (MFO) analysis	6
400 EQUIPMENT	
Image analysis equipment	5
Fume/dust venting system	2
500 SUPPLIES	
computer support, copying, graphic production, otolith lab supplies	12

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: Dolly Varden Closeout

PROJECT LEADER: Kelly Hepler

PROJECT NO: F/S # 5

LOCATION: Anchorage

PHONE:

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	16.0	0.0	16.0
72000	1.0	0.0	1.0
73000	0.5	0.5	1.0
74000	0.0	0.0	0.0
75000	0.0	0.0	0.0
TOTAL	17.5	0.5	18.0

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

The NRDA F/S study # 5 has been in operation since April of 1989. The goal of this study was to determine if injury occurred to Dolly Varden and cutthroat trout through analyses of growth and survival. This was accomplished through mark and recapture tagging studies at five sites in Prince William Sound. Results through 1991 indicate that injury occurred in the form of reduced survival for both species and reduced growth for cutthroat trout. Data collection and analysis is complete through 1990. Additional data need to be collected to complete the 1991 analysis. The close out of the project will involve the preparation of an article for publication in a refereed fisheries journal. To accomplish this the Division of Sport Fish's Chief Biometrician, Dave Bernard, will be enlisted to assist in manuscript preparation.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11-4207	21 F	Biometrician IV	2.5	Anchorage	D. Bernard	M. Mills
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 0.2

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel	Commercial air travel	1.0	0.0	1.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	1.0	0.0	1.0

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication		0.0	0.0	0.0
73400 Transportation		0.0	0.0	0.0
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Publication costs	0.5	0.5	1.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.5	0.5	1.0

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies		0.0	0.0	0.0
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

PROJECT: FS #11 PLUS BIOMETRIC SUPPORT PROJECT LEADER: Evelyn D. Biggs

PROJECT NO: Fish/Shellfish #11 LOCATION: Cordova PHONE: (907)424-3213

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	25.0	87.5	112.5
72000	7.5	7.0	14.5
73000	83.2	73.4	156.6
74000	1.3	1.6	2.9
75000	0.1	0.3	0.4
TOTAL	117.1	169.9	287.0

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: Injury to Herring #11 is projected to last one additional year, although no new field data will be collected. The components of the project listed are those necessary to summarize and complete analysis of three years of data, to reconcile the current data with historical data and the literature base, and to synthesize all the components of the study. There are three project personnel needed: a ten month research analyst to manage the databases, assist in the analyses, and to complete the necessary programming; a ten month research assistant to assist the analyst in archiving data and in data processing; and a 4 month population modeller to combine the different components of the herring project into a population model. The bulk of the money is to be used for final contracts for project researchers. Dr. Kocan will complete the dose-response experiment and summarize the laboratory data and literature base. Dr. Hose will complete the cytogenetic and sublethal data for 89-91 field collections. Dr. Hinton's lab will complete the analysis of the histopathological data.

PROJECT: Biometric Support for FS11 CLOSEOUT PROJECT LEADER: Brannian

PROJECT NO: FS11 LOCATION: Anchorage PHONE: 267-2118

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	6.4	13.2	19.6
72000	2.5	0.0	2.5
73000	0.2	0.4	0.6
74000	0.6	0.0	0.6
75000	0.1	0.3	0.4
TOTAL	9.8	14.0	23.8

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Includes 4 mm Biometrician I closeout of project.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MO	8 MO	LOCATION	INCUMBENT	SUPERVISOR
1395	17D	Biometrician I	1.3	2.7	Anchorage	Baker	Brannian

FULL TIME EQUIVALENTS – FTEs (Months/12): 0.33

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	1 Trip to Cordova	0.2	0.0	0.2
72270 Administrative Travel	1 Trip to Juneau	0.5	0.0	0.5
72300 Conventions/Meeting Travel	1 Trip to Seattle	1.0	0.0	1.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	Per Diem	0.8	0.0	0.8
		0.0	0.0	0.0
	SUBTOTAL	2.5	0.0	2.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Telephone; Data Line; Postage	0.0	0.0	0.0
73400 Transportation	Air Charter; Air Freight	0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Visual Aid Preparation; Special Printing	0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Literature Search	0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.2	0.4	42.3

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies	Scientific Reference Material	0.0	0.0	0.0
74560 Data Processing Supplies	Computer Paper; ribbons, etc.	0.0	0.0	0.0
74600 Other operating Supplies	Software	0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Computer Repair	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.6	0.0	0.6

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Microcomputer Parts	0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	File Cabinets	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.3	0.4

PROJECT: INJURY TO PWS HERRING PROJECT LEADER: Evelyn D. Biggs

PROJECT NO: Fish/Shellfish #11 LOCATION: Cordova PHONE: (907)424-3213

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	18.6	74.3	92.9
72000	5.0	7.0	12.0
73000	83.0	73.0	156.0
74000	0.7	1.6	2.3
75000	0.0	0.0	0.0
TOTAL	107.3	155.9	263.2

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: Injury to Herring #11 is projected to last one additional year, although no new field data will be collected. The components of the project listed are those necessary to summarize and complete analysis of three years of data, to reconcile the current data with historical data and the literature base, and to synthesize all the components of the study. There are three project personnel needed: a ten month research analyst to manage the databases, assist in the analyses, and to complete the necessary programming; a ten month research assistant to assist the analyst in archiving data and in data processing; and a 4 month population modeller to combine the different components of the herring project into a population model. The bulk of the money is to be used for final contracts for project researchers. Dr. Kocan will complete the dose-response experiment and summarize the laboratory data and literature base. Dr. Hose will complete the cytogenetic and sublethal data for 89-91 field collections. Dr. Hinton's lab will complete the analysis of the histopathological data.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
new	14A	Research Analyst/FB I	10.0	Cordova	None	Biggs
NP	9A	Tech. II; Archiving/Data Proc.	10.0	Cordova	None	Biggs
1427	17A	Bio I/Population Modelling	4.0	Juneau	Zheng	Kruse
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS – FTEs (Months/12): 2.0

PROJECT: INJURY TO PWS HERRING PROJECT LEADER: Evelyn D. Biggs

PROJECT NO: Fish/Shellfish #11 LOCATION: Cordova PHONE: (907)424-3213

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	18.6	74.3	92.9
72000	5.0	7.0	12.0
73000	83.0	73.0	156.0
74000	0.7	1.6	2.3
75000	0.0	0.0	0.0
TOTAL	107.3	155.9	263.2

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: Injury to Herring #11 is projected to last one additional year, although no new field data will be collected. The components of the project listed are those necessary to summarize and complete analysis of three years of data, to reconcile the current data with historical data and the literature base, and to synthesize all the components of the study. There are three project personnel needed: a ten month research analyst to manage the databases, assist in the analyses, and to complete the necessary programming; a ten month research assistant to assist the analyst in archiving data and in data processing; and a 4 month population modeller to combine the different components of the herring project into a population model. The bulk of the money is to be used for final contracts for project researchers. Dr. Kocan will complete the dose-response experiment and summarize the laboratory data and literature base. Dr. Hose will complete the cytogenetic and sublethal data for 89-91 field collections. Dr. Hinton's lab will complete the analysis of the histopathological data.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
new	14A	Research Analyst/FB I	10.0	Cordova	None	Biggs
NP	9A	Tech. II; Archiving/Data Proc.	10.0	Cordova	None	Biggs
1427	17A	Bio I/Population Modelling	4.0	Juneau	Zheng	Kruse
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
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			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS – FTEs (Months/12): 2.0

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	Project Personnel Travel,PI–Biometrician	1.8	2.0	3.8
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel	Synthesis, Mngmt. Team, Symposium	1.2	2.2	3.4
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	For Above	2.0	2.8	4.8
		0.0	0.0	0.0
	SUBTOTAL	5.0	7.0	12.0

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	Dr. Kocan/Final Contract	40.0	0.0	40.0
73100 Professional Services	Dr. Hose/Final Contract	0.0	65.0	65.0
73100 Professional Services	Dr. Hinton/Final Contract	40.0	0.0	40.0
73100 Professional Services		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Publication/Printing Costs	0.0	2.0	2.0
73600 Public Utilities Services	Office Rent/Phones	1.0	2.5	3.5
73700 Minor Repair/Maintenance	Computer/Lab Repair	0.5	1.0	1.5
73400 Airfreight/Shipping	Remainder of Samples/Express	0.8	1.5	2.3
73420 Trans–State Equip Fleet Fees	State Veh. Lease	0.8	1.0	1.8
		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	83.0	73.0	156.0

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	Reg. Office	0.2	0.6	0.8
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies	Disks/Upgrades	0.5	1.0	1.5
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.7	1.6	2.3

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

PROJECT: FS #13 PLUS BIOMETRIC SUPPORT PROJECT LEADER:CHARLIE TROWBRIDGE

PROJECT NO: FISH\SHELLFISH # 13 LOCATION: CORDOVA PHONE: 907-424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	27.8	39.8	67.6
72000	2.0	2.5	4.5
73000	6.7	12.2	18.9
74000	0.1	0.6	0.7
75000	0.9	0.5	1.4
TOTAL	37.5	55.6	93.1

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This is the closeout budget for the clam project. During 1992 the project staff and contractors will complete the aging of clams collected in 1991, complete data entry, and analyze all littleneck and butter clam data collected over the duration of the project (1989-1991). This stage of the project requires close work with the biometric staff and include meeting with NMFS Technical Services # 3 personnel for interpretation of hydrocarbon analytical results, completion of the first queue of histopathology samples, and development of descriptive mapping products with the FIS group.

PROJECT: Biometric Support for FS13 CLOSEOUT PROJECT LEADER: Brannian

PROJECT NO: FS13 LOCATION: Anchorage PHONE: 267-2118

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	4.9	9.8	14.7
72000	0.0	0.5	0.5
73000	0.2	0.3	0.5
74000	0.0	0.1	0.1
75000	0.1	0.2	0.3
TOTAL	5.1	10.9	16.1

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Includes 3 mm Biometrician I for closeout.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MO	8 MO	LOCATION	INCUMBENT	SUPERVISOR
1395	17D	Biometrician I	1	2	Anchorage	Baker	Brannian

FULL TIME EQUIVALENTS – FTEs (Months/12): 0.25

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	1 Trip to Cordova	0.0	0.3	0.3
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	Per Diem	0.0	0.2	0.2
		0.0	0.0	0.0
	SUBTOTAL	0.0	0.5	0.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Telephone; Data Line; Postage	0.0	0.0	0.0
73400 Transportation	Air Charter; Air Freight	0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Visual Aid Preparation; Special Printing	0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Literature Search	0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.2	0.3	31.8

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies	Scientific Reference Material	0.0	0.0	0.0
74560 Data Processing Supplies	Computer Paper; ribbons, etc.	0.0	0.0	0.0
74600 Other operating Supplies	Software	0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Computer Repair	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.1	0.1

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Microcomputer Parts	0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	File Cabinets	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.2	0.3

PROJECT: INJURY TO PWS BIVALVES PROJECT LEADER:CHARLIE TROWBRIDGE

PROJECT NO: FISH\SHELLFISH # 13 LOCATION: CORDOVA PHONE: 907-424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	22.9	30.0	52.9
72000	2.0	2.0	4.0
73000	6.5	11.9	18.4
74000	0.1	0.5	0.6
75000	0.8	0.3	1.1
TOTAL	32.3	44.7	77.0

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This is the closeout budget for the clam project. During 1992 the project staff and contractors will complete the aging of clams collected in 1991, complete data entry, and analyze all littleneck and butter clam data collected over the duration of the project (1989-1991). This stage of the project requires close work with the biometric staff and includes meeting with NMFS Technical Services # 3 personnel for interpretation of hydrocarbon analytical results, completion of the first queue of histopathology samples, and development of descriptive mapping products with the GIS group. Analysis of 1990 transplant data indicated a difference in growth between oiled and unoiled sites. The presence of hydrocarbons has been documented in clam tissues and sediment samples collected in 1989 and 1990. Analysis of hydrocarbon samples collected in 1991 will complete a picture of hydrocarbons over time and space within Prince William Sound. All of these components are necessary to complete the analysis of data collected.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11–1649	14B	Fisheries Biologist I	9.0	Cordova	Johnson	Trowbridge
11–N534	9A	Fisheries Technician II	4.0	Cordova	Stack	Johnson
11–1970	16A	Fisheries Biologist II	1.0	Cordova	Trowbridge	Kimker
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			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS – FTEs (Months/12): 1.2

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel	8 Trips; Cordova–Anchorage	0.8	0.8	1.6
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	24 days	1.2	1.2	2.4
		0.0	0.0	0.0
	SUBTOTAL	2.0	2.0	4.0

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	IMS Contract	5.0	10.0	15.0
73300 Communication	phones/postage/air freight	0.6	1.2	1.8
73400 Transportation				0.0
73420 Trans–State Equip Fleet Fees	vehicle	0.6	0.0	0.6
73500 Advertising, Printing, Binding		0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance	copier; computer	0.3	0.7	1.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	6.5	11.9	18.4

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	pens, pencils, paper	0.1	0.2	0.3
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies	diskettes, tapes, cables	0.0	0.3	0.3
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.5	0.6

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	hardware; software upgrades	0.5	0.3	0.8
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	storage	0.3	0.0	0.3
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.8	0.3	1.1

PROJECT: BIRD STUDY 2 - BOAT SURVEYS TO DETERMINE DISTRIBUTION AND ABUNDANCE OF MIGRATORY BIRDS AND SEA OTTERS IN PRINCE WILLIAM SOUND

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary [.6 FTE, GS 11 (1) .6 FTE, GS 7 (2)]	$60,000.00
Travel	0.00
Contracts	0.00
Supplies	0.00
Equipment	0.00
TOTAL	$60,000.00 (1.8 FTES)

BACKGROUND/JUSTIFICATION: Boat-based surveys for birds and mammals in Prince William Sound include census of both pelagic and shoreline areas; over 120 species of birds and 20 species of mammals have been counted on surveys. Objectives of the study include: determining distribution and estimating abundance; estimating long- and short-term population trends; and determining differences in animal abundance between oiled and un-oiled areas.

Preliminary results indicate that bird populations in Prince William Sound declined since pre-spill surveys for 16 species or species groups including grebes, cormorants, Northern Pintail, Harlequin Duck, Oldsquaw, scoters, goldeneyes, Bufflehead, Black Oystercatcher, Bonapart's Gull, Black-legged Kittiwake, Arctic Tern, Pigeon Guillemot, murrelets, and Northwest Crow. More than 30,000 carcasses representing over 90 species of birds were collected from the spill zone in 1989. In addition, both direct and lingering population effects of the spill have been demonstrated in NRDA studies on Harlequin Duck, Black Oystercatcher, Black-legged Kittiwake, Marbled Murrelet, murres, and Pigeon Guillemot. Intensive studies have also revealed evidence of damage to populations of sea otters.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed. A final report has not been prepared.

The preparation of a final report will be essential for understanding the injuries the spill caused to marine birds and sea otters. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $803,000 will have been spent on NRDA boat surveys of marine birds and sea otters through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on marine bird populations and provide the public with the results of the government's investment.

PROJECT: BIRD STUDY 3 - POPULATION SURVEYS OF SEABIRD COLONIES IN THE SPILL AREA (MURRES)

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM		COST
Salary		$120,000.00
	[GS 12 - .4 FTE	
	GS 11 - .6 FTE	
	GS 9 - .6 FTE	
	GS 7 - .6 FTE]	
Travel		5,000.00
Contracts		0.00
Supplies		0.00
Equipment		0.00
	TOTAL	$125,000.00 (2.2 FTES)

BACKGROUND/JUSTIFICATION: The oil spill prompted resurvey of seabird colonies in Prince William Sound and other areas westward along the spill trajectory. Cliff-nesting species such as the Black-legged Kittiwake and Common and Thick-billed Murres were the primary emphasis of the 1989-90 censuses. Timing of egg laying and productivity were also noted for these species. In 1990 and 1991 the major effort was placed on replicate counts of murres in those areas that showed the most drastic changes relative to historical data. Study objectives included comparison of pre- and post-spill numbers of breeding colony seabirds within the oiled area and comparison of reproductive chronology and productivity for murres in oiled areas.

As the oil exited Prince William Sound (PWS), it collided with large rafts of breeding age murres congregating around major nesting colonies. The resulting mortality included an estimated 198,000 adult breeding birds, representing 60 to 70 percent of the total breeding population of certain major colonies. Extrapolating to include mortality of non-breeders, mortality is estimated to be as high as 300,000 birds. This loss resulted in a major disruption of breeding behavior and phenology resulting in reproductive failure for 1989-91. Dramatic decreases in the number of murres at nesting colonies in the EVOS area were noted in 1989-91 surveys. Murres at all sites associated with oil had either low or no success in producing chicks with either very late egg laying or none at all in 1989-91.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed. A final report has not been prepared.

The preparation of a final report will be essential for understanding the injuries the spill caused to murres and colony breeders. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $844,000 will have been spent on NRDA analysis of the effects of the spill on murres and other colony breeders through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on murre populations and provide the public with the results of the government's investment.

PROJECT: BIRD STUDY 4 - ASSESSING THE EFFECTS OF EVOS ON BALD EAGLES

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary	$56,000.00
[GS 11 - .6 FTE GS 9 - .6 FTE]	
Travel	5,000.00
Contracts	12,000.00
[office rent - 8,000 vehicle rent - 4,000]	
Supplies	0.00
Equipment	2,000.00
[maps and photos]	
TOTAL	$75,000.00 (1.2 FTES)

BACKGROUND/JUSTIFICATION: Surveys were conducted following the oil spill to estimate bald eagle numbers and reproductive success. Eagles were radio-tagged and monitored to determine survival, and document movements and exposure to oiled areas. Toxicological test were conducted on tissue samples, and addled eggs, prey remains, blood, and feathers were collected and analyzed for evidence of hydrocarbon exposure.

Preliminary results have shown that oil contamination of the intertidal habitats, used extensively by breeding, wintering and migrating bald eagles have resulted in impacts to these birds. Conservative estimates of total mortality of bald eagles due to EVOS is 553. Bald eagle nesting surveys revealed a significantly low nest success and productivity in Prince William Sound with approximately 69% of occupied nests failing in 1989 and 43% failing in 1990. A conservative estimate of lost production in 1989 was 133 chicks. Hydrocarbon analysis of addled eggs, prey remains, blood, and feathers, in 1989 and 1990, indicated exposure. Two of 3 eggshell samples collected in 1989 on the Alaska Peninsula and Kodiak area were exposed to hydrocarbons. Concentrations of uric acid in blood serum from adult eagles in oiled areas were higher than those from un-oiled areas in 1989. Eggs collected in 1990 in eastern PWS also indicated exposure to petrogenic hydrocarbons.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed. A final report has not been prepared.

The preparation of a final report will be essential for understanding the injuries the spill caused to bald eagles. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $1.3 million will have been spent on NRDA bald eagle studies through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on Bald Eagles and provide the public with the results of the government's investment.

PROJECT: BIRD STUDY 6 - ASSESSMENT OF THE ABUNDANCE OF MARBLED MURRELETS AT SITES ALONG THE KENAI PENINSULA AND PRINCE WILLIAM SOUND

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary [GS 11 - .4 FTE]	$18,000.00
Travel	0.00
Contracts	0.00
Supplies	0.00
Equipment	0.00
TOTAL	$18,000.00 (.4 FTE)

BACKGROUND/JUSTIFICATION: This study was implemented to assess injury to marbled murrelets from the oil spill. It consisted primarily of complete shoreline counts in some areas plus transect counts. In addition: daily and seasonal variability was tracked in at-sea counts; a study was conducted on the effects of human disturbance; alternate study sites were established; and specimens were collected for contaminants analysis. Studies were also begun to determine the use of upland habitats by marbled murrelets.

The marbled murrelet population in Prince William Sound has declined from about 300,000 in 1972 to 100,000 in 1989-91. Counts in the Naked Island area in 1989 and '91 are also lower than counts made from 1978-1980. The length of time between pre-oil surveys and post-oil surveys makes it difficult to determine the contribution of the EVOS to this decline. In Prince William sound, marbled murrelets comprised 12% of all seabird carcasses retrieved in 1989, which is proportionally higher than their numbers at risk at the time of the spill. Based on an 8% chance of carcass recovery, an estimated 9,570 murrelets, or a high range of 14,190 murrelets, were killed directly by oil in the EVOS zone. In addition, apparently healthy murrelets collected in oiled areas had internal contamination by petroleum hydrocarbons, whereas murrelets collected in un-oiled areas did not.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed. A final report has not been prepared.

The preparation of a final report will be essential for understanding the injuries the spill caused on marbled murrelets. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $85,665 will have been spent on NRDA marbled murrelet studies through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on Marbled Murrelets and provide the public with the results of the government's investment.

PROJECT: BIRD STUDY 7 - ASSESSMENT OF THE EFFECTS OF PETROLEUM HYDROCARBONS ON REPRODUCTIVE SUCCESS OF THE FORK-TAILED STORM- PETREL

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary [GS 11 - .1 FTE]	$5,000.00
Travel	0.00
Contracts	0.00
Supplies	0.00
Equipment	0.00
TOTAL	$5,000.00 (.1 FTE)

BACKGROUND/JUSTIFICATION: Fork-tailed Storm-Petrel colonies were visited to monitor nesting burrows for reproductive success. The study objectives were to: determine if reproductive success was lower than in pre-spill years; assess the impact of crude-oil exposure on reproduction; count number of adults contaminated by oil; and determine persistence of crude oil in the marine environment by comparing hydrocarbon contamination of stomach oils with pre-spill data.

Preliminary results suggest that there were no measurable change in the storm-petrel reproductive success. However, it is difficult to conclude that the storm-petrels have not been impacted by the oil spill until the stomach oil samples have been analyzed. Previous studies establish that petrels dosed with oil have a significant decrease in hatching success lower chick survival.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed. A final report has not been prepared.

The preparation of a final report will be essential for understanding the injuries the spill caused on Fork-tailed Storm-Petrels. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $106,200 will have been spent on NRDA Fork-tailed Storm-Petrel studies through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on storm-petrels and provide the public with the results of the government's investment.

PROJECT: BIRD STUDY 8 - ASSESSMENT OF INJURIES TO REPRODUCTIVE SUCCESS OF BLACK-LEGGED KITTIWAKES IN PRINCE WILLIAM SOUND

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary (GS 11 - .1 FTE)	$5,000.00
Travel	0.00
Contracts	0.00
Supplies	0.00
Equipment	0.00
TOTAL	$5,000.00 (.1 FTE)

BACKGROUND/JUSTIFICATION: Black-legged Kittiwakes are the most abundant colonial nesting seabird in Prince William Sound. A number of colonies were impacted by oil from the EVOS. The objectives of this study were to: test for differences in reproductive success in oiled areas as compared to pre-spill levels; determine if adult kittiwakes were contaminated by oil; test unhatched eggs and prey delivered to chicks for hydrocarbon content; and identify potential restoration of losses.

Preliminary results revealed a significantly lower reproductive success for kittiwakes in oiled areas compared to un-oiled areas, however, analysis is not complete. Kittiwakes were contaminated externally as preliminary results show that 37% of birds observed at oiled colonies had oil on the breast feathers. Analysis on internal contamination, prey samples, and eggs have not been conducted to date.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed and, in some cases, has not been initiated. A final report has not been prepared.

Data analysis and the preparation of a final report will be essential for understanding the injuries the spill caused on Black-legged Kittiwakes. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $299,300 will have been spent on NRDA Black-legged Kittiwake studies through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on kittiwakes and provide the public with the results of the government's investment.

PROJECT: BIRD STUDY 9 - ASSESSMENT OF INJURY TO WATERBIRDS BASED ON THE POPULATION AND BREEDING SUCCESS OF PIGEON GUILLEMOTS IN PRINCE WILLIAM SOUND

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary (GS 11 - .4 FTE)	$18,000.00
Travel	0.00
Contracts	0.00
Supplies	0.00
Equipment	0.00
TOTAL	$18,000.00 (.4 FTES)

BACKGROUND/JUSTIFICATION: The Pigeon Guillemot population of Naked, Peak, and Storey islands was censused by circumnavigating each island in a small boat and counting all guillemots. The objectives of the study include: determine if the total number and densities of guillemots attending the colonies following the oil spill was significantly different than prior years; monitor nesting success and chick growth rates; monitor abundance and type of prey fed to chicks; determine if petroleum hydrocarbons are present in adults, unhatched eggs, dead chicks, and prey items; and identify potential restoration strategies.

Preliminary data analysis suggest that count of Pigeon Guillemots were significantly lower following the oil spill. To what extent this decline was due to the overall population decline or to the oil spill is unknown; further analysis is required. However, the most heavily oiled areas were the areas with the largest declines in numbers. Reproduction appeared to be similar to previous years; sampling size was too small to estimate the rate of successful nesting. Analysis on all other aspects of the study have not yet been initiated.

A preliminary report of results has been prepared for this study but comprehensive data synthesis and analysis have not been completed and, in some cases, has not been initiated. A final report has not been prepared.

Data analysis and the preparation of a final report will be essential for understanding the injuries the spill caused on Pigeon Guillemots. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $62,400 will have been spent on NRDA Pigeon Guillemot studies through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on guillemots and provide the public with the results of the government's investment.

PROJECT:
Harlequin Duck Damage Assessment

PROJECT LEADER:
Sam Patten

PROJECT NO:
B11

LOCATION:
Anchorage

PHONE:
267-2376

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	0.0	0.0
72000	0.0	0.0	0.0
73000	0.0	0.0	0.0
74000	0.0	0.0	0.0
75000	0.0	0.0	0.0
TOTAL	0.0	0.0	$20,000

This is to be the department's OY4 budget request for the above project.

On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Harlequin Ducks suffered direct mortality from contact with oil during the oil spill. Subsequently, there has been an almost complete failure of Harlequins in the spill area to reproduce. The mechanism of the apparent reproductive failure is not clear, but there is strong evidence of continuing injury to this species, possibly through the consumption of oil-contaminated mussels, their primary food. This project will conclude the damage assessment portion of Harlequin Duck studies.

PROJECT: BIRD STUDY 12 - ASSESSMENT OF INJURY TO SHOREBIRDS STAGING AND NESTING IN PRINCE WILLIAM SOUND AND THE KENAI PENINSULA

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary [GS 11 - .4 FTE]	$18,000.00
Travel	0.00
Contracts	0.00
Supplies	0.00
Equipment	0.00
TOTAL	$18,000.00 (.4 FTES)

BACKGROUND/JUSTIFICATION: This study was divided into two parts. The first part was to determine an estimate number of spring migrant shorebirds using oil-affected portions of the Sound. Objectives here included: estimate the amount of time shorebirds are exposed and number of shorebirds of each species exposed to contaminated beaches; estimate proportion of migrants contaminated; test for differences in feeding behavior; collect tissue samples for analysis and identify contamination pathways in the food chain; and determine nest success of Black Turnstones. Part two of the study dealt with Black Oystercatchers. The focus of this portion of the research was three-fold: (1) determine the effects of oiling on the reproductive success of oystercatchers; (2) determine habitat requirements of breeding oystercatchers; and (3) explore how the feeding strategy of oystercatchers may effect populations of invertebrate prey species.

Preliminary results for the shorebird portion of the study revealed that virtually all of the shorebirds were found using lightly to negligibly oiled areas of Montague Island, at sites with heavy herring spawn deposition. More heavily oiled portions of the Sound probably did not receive a great deal of use by shorebirds. The proportion of birds directly contaminated by oil on plumage is undetermined by probably small. Clutch sizes of Black Turnstones on breeding grounds were reduced relative to pre-spill years, but no direct link can be drawn to the oil spill. Samples of prey items and birds have not yet been analyzed to evaluate the degree of contamination via the food chain.

Preliminary analysis revealed that Black Oystercatchers experienced reduce productivity in Prince William Sound following the oil spill. 1989 data indicated that the relative egg volume of clutches was lower. Although clutch size, hatching success or fledgling success did not differ, growth rate of chicks was significantly lower in 1991. Additionally, intertidal prey organisms of the oystercatcher experienced diminished productivity and direct mortality.

Preliminary reports of results have been prepared for these studies but comprehensive data synthesis and analysis have not been completed and, in some cases, has not been initiated. A final report has not been prepared.

Data analysis and the preparation of a final report will be essential for understanding the injuries the spill caused on shorebirds and Black Oystercatchers. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $94,800 will have been spent on NRDA shorebird and Black Oystercatcher studies through 1992. A reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on shorebirds and oystercatchers and provide the public with the results of the government's investment.

11.1.1P

LANDS/HABITAT PROTECTION

The March 1,1991 Federal Register, 56 FR 8903, started the process for a lands/habitat protection restoration project. The objective of the project as stated in the FR notice, is "to identify and protect strategic wildlife and fisheries habitats and recreation sites and to prevent further potential environmental damages to resources injured by the *Exxon Valdez* oil spill."

All acquisition of property rights is on a willing buyer/seller basis.

A preliminary five step process was outlined in the FR notice. Those steps area:

1. Identification of key upland habitats that are linked to the recovery of injured resources or services by scientific data or other relevant information.

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

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

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

5. Incorporation of acquired property rights into public management.

During the summer of 1991 the Restoration Planning Work Group began working with The Nature Conservancy to identify various ways to identify and protect fish and wildlife habitats and recreation sites. In December 1991, The Nature Conservancy produced a handbook entitled "Options for Identifying and Protecting Strategic Fish and Wildlife Habitats and Recreation Sites".

The handbook outlines the key steps in a land conservation process as being:

1. Develop the conservation objectives that will guide the protection process.

This has been somewhat accomplished through the project objective outlined in the FR notice. However, more detailed objectives that allow for protection strategies other than fee simple acquisition need to be developed.

2. Identify and rank strategic fish and wildlife habitats and recreation sites.

Key features of this step are the need to develop evaluation criteria, create an inventory of lands suitable for protection, perform an initial threat analysis and determine the optimal area for protection.

In 1992, this process will largly be based on landowner proposals and public nominations. In the longer term, we can conduct a more systematic process, and several restoration projects are aimed at providing information on linking habitats to injured resources or services. They include the Marbled Murrelet Restoration Project, Stream Habitat Assessment, Harlequin Duck Restoration Study, and Identification of Habitats Relevant to Injured Species study.

3. Develop a management plan.

This step involves developing a close working relationship with the landowner; conducting a thorough threat analysis; determining the cost-effective protection tools most suitable to the situation; performing the necessary due diligence including appraisal, title report review and environmental audits.

3. Develop a protection plan.

This step includes development of a management plan for the area and making sure there are dedicated funds for its future management.

On January 28, 1992, members of the Restoration Team, Restoration Planning sub-group and agency specialists met with The Nature Conservancy to review the handbook and close out on the project. The handbook was reviewed, various identification and protection mechanisms were discussed and skills necessary for a lands/habitat protection program were identified.

The Restoration Team is recommending that a Lands sub-group of the Restoration Team initially guide the project by identifying objectives, time line, process, criteria and technical experts. A second group, made up of agency or possibly contract specialists would be called upon on an as needed basis to perform the tasks necessary for a successful acquisition. Technical experts would include biologists, attorneys, appraisers, realty

experts, key contact/negotiator, risk management specialists and resource economists. Individuals with these skills have not all been identified. However, most of the skills lie within the Trustee agencies.

A tentative time line for a 1992 protection program is outlined below.

21 Feb
- Circulate draft objectives and criteria to TC

28 Feb
- Revise objectives and criteria

2 Mar
- TC publishes objectives and criteria and announces willingness to accept nominations/proposals from public/landowners

27 Mar
- Based on nominations/proposals received, TC publishes master list of properties that minimally meet the draft critera and invites public comment on the list and the criteria. The list has two tiers:
  (a) landowner proposals and nominations from public for which potentially willing sellers are confirmed; and
  (b) nominations from public for which potentially willing sellers are not confirmed

30 Apr
- Public comment period closes

- Review nominations/proposals; revise and then apply criteria; revise master list

- TC invites formal proposals from willing sellers on either (a) or (b) tiers of master list

- Review incoming proposals and TC determines 1992 priorities

- Enter into negotiations with landowners

- Public notice and comment on intent to acquire specific properties or property rights

- With final approval from TC, close deals

February 1, 1992 draft

RESTORATION TEAM RECOMMENDATION

Trustee Council reviews the 1992 Workplan which includes the Damage Assessment Close-out projects, Damage Assessment Continuation projects and 1992 Restoration projects and makes a decision on which projects to proceed with on 2/5/92 and 2/6/92. Once public comments are received, projects will be modified as necessary.

Public comments (30 day public review) will be solicited in conjunction with the concurrent publication of the Restoration Framework Plan and the 1992 Workplan scheduled for 3/16/92. To reiterate, these comments may result in further modification to projects approved on 2/5/92 and 2/6/92.

Consequences of this option:

PRO
1. Timely close-out of damage assessment studies and release of reports on injury determination resulting in report availability to public as quickly as possible thus allowing the public to fully comprehend injury and evaluate potential restoration projects.
2. Data collection maintained on schedule.
3. No loss of critical data.
4. No layoff or reassignment of project personnel.
5. Allows for timely development of comprehensive restoration options by the Restoration Team and Trustee Council based on sound injury information.

CON
1. Limited public comment prior to initial expenditure of funds.
2. Potential early expenditure of public funds on projects not carried forward as a result of public comment.

Other options which were considered but not recommended include:

OPTION I

Trustee Council makes decision to proceed on (1) Damage Assessment Close-Out projects and (2) 1992 Time-Critical* Restoration projects and Damage Assessment Continuation projects on 2/5/92 and 2/6/92. Once public comments are received, projects will be modified as necessary.

Remainder of Restoration Projects and Damage Assessment Continuation projects are considered on a schedule resulting in a Trustee Council decision no earlier than 3/30/92. The length of additional review process by federal and state entities (i.e.

OMB, State legislature) other than the Trustee Council and the time necessary to receive money from the fund is unknown.

Consequences of this option:

PRO
1. Allows for full public review and comment (30 days) on some 1992 Restoration projects.
2. Minimal delays in project implementation for those projects on the Time-Critical Lists.
3. Timely close-out of damage assessment studies resulting in report availability to the public as quickly as possible, thus allowing the public to fully comprehend injury and evaluate potential restoration projects.

CON
1. Allows for limited public review and comment (public meetings only) on Time-Critical Lists and Damage Assessment Close-out projects.
2. Possible cancellations and delays in implementation of certain 1992 Restoration projects resulting in possible:
   -compromise of data collection
   -loss of critical data
   -layoff or reassignment of project personnel after 3/1/92
   -delays due to re-mobilization, retraining, hiring new personnel etc.

*1992 Time-Critical projects include those activities that would actually be in the field in March, April or May of 1992. However, it should be noted that Restoration projects not on the 1992 Time-Critical list may have crucial planning needs that must be undertaken in March, April or May of 1992 in order to go into the field at a later date.

OPTION II

Trustee Council makes decision to proceed on Damage Assessment Close-Out projects ONLY on 2/5/92 and 2/6/92. Once public comments are received, projects will be modified as necessary.

Damage Assessment Continuation projects and 1992 Restoration projects are considered on a schedule resulting in a Trustee Council decision no earlier than 3/30/92. The length of additional review process by federal and state entities (i.e. OMB and State legislature) other than the Trustee Council and the time necessary to receive money from the fund is unknown.

Consequences of this option:

PRO
1. Allows for 30 day public review and comment on Damage Assessment Continuation projects and 1992 Restoration projects.
2. Timely close-out of damage assessment studies resulting in

report availability to the public as quickly as possible.

CON
1. Probable cancellations and major delays in implementation of certain 1992 Restoration projects resulting in:
   -compromise of data collection
   -loss of critical data
   -layoff or reassignment of project personnel
   -major delays due to re-mobilization, retraining, hiring new personnel etc.
2. Allows for limited public review and comment (public meetings only) on Damage Assessment Close-out projects.
3. Delay or cancellation of restoration projects will result in delay in the development of comprehensive restoration options by the Restoration Team and Trustee Council.

OPTION III

Trustee Council makes NO final decision on Damage Assessment Close-Out projects, Damage Assessment Continuation projects or 1992 Restoration projects on 2/5/92 and 2/6/92.

Damage Assessment Close-out projects, Damage Assessment Continuation projects and 1992 Restoration projects are considered on the same schedule as the Restoration Framework Plan resulting in a decision no earlier than 5/18/92. The length of the review process by federal and state entities (i.e. OMB and State legislature) and the time necessary to receive money from the fund is unknown.

Consequences of this option:

PRO
1. Allows for 30 day public review and comment on all 1992 activities.

CON
1. Delay of close-out approval will result in delay of availability and release of reports on injury determination to public thus allowing public to fully comprehend injury and evaluate potential restoration projects.
2. Delay of close-out approval will result in delay in the development of comprehensive restoration options by the Restoration Team and Trustee Council.
3. Will result in cancellations and major delays in implementation of certain 1992 Restoration projects resulting in:
   -compromise of data collection
   -loss of critical data
   -layoff or reassignment of project personnel
   -major delays due to re-mobilization, retraining, hiring new personnel etc.