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Effects of Natural Oil Seeps on Pink Salmon Incubation Success and Condition - Submitted Under the BAA ECEIV

N/A

None

No

Project Number: **Restoration Category:** Proposer: Lead Trustee Agency: **Cooperating Agencies:** Alaska Sea Life Center: Duration:

99491-BAA Research

First Year, 1 year project

\$190,543 (\$208,032 total)

Southern Alaska Peninsula

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL

APR 1 5 1998

Ernest L. Brannon, University of Idaho

Cost FY99:

Geographical Area:

Injured Resource:

ABSTRACT

Two principle differences of opinion exist about the effects oil had on incubating pink salmon embryos in Prince William Sound streams. The contributing scientists believe that significant progress can be made toward understanding the effects oil on pink salmon by examining incubating and adult pink salmon in streams that have a history of exposure to oil from natural oil seeps. Research examining the effects of natural oil seeps on pink salmon is designed to assess its effect on egg viability, embryo survival, and molecular aberrations under conditions of persistent exposure of previous generations. It is anticipated that this study will serve to help in understanding the immediate and long-term effects of oil on pink salmon subject to oil spills.

Pink Salmon



INTRODUCTION

Scientists studying the effects of the *Exxon Valdez* oil spill on Prince William Sound (PWS) pink salmon have developed diametrically opposed views on the impact that oil may have had on the incubating eggs and alevins in PWS affected streams. Alaska Fish and Game scientists have concluded from instream egg samples and laboratory egg viability studies that there were embryo mortalities induced by oil during the pink salmon incubation phase (Bue et al., 1996). Moreover, the alleged damage is impugned to have been passed on to subsequent generations well after oil had disappeared from the incubation substrates, resulting in early incubation mortality as much as two generations later. The investigators suggest the higher mortality was from genetic or physiological damage. National Marine Fisheries Service scientists, working at the Auke Bay Laboratory with eggs exposed to oil concentrations in incubation substrate, have also detected differences that are interpreted to result from PAH effects at the molecular level, and these may impose higher mortality in subsequent generations.

The opposing point of view is from research by scientists conducting studies supported by Exxon. These scientists have concluded that no measurable effects on incubating eggs and alevins occurred from oil that entered pink salmon incubation streams (Moulton, 1996; Brannon et al., 1995). Their conclusions were based on early life history studies in oiled and reference streams, bioassays in oiled and reference streams, and on viability assessments of gametes carried by adults exposed as juveniles to oil concentrations reaching streams and bays in PWS. These scientists have suggested that ADF&G results were caused by sampling embryos before blastopore closure early during incubation, which caused the differences in the observed moralities.

The difficulty with this issue is there were differences in experimental designs, methods used to determine incubation substrate contamination, and interpretations of results that are not readily resolved. However, the implications of the impact of oil on pink salmon and other salmonid species would be very much influenced by the different conclusions forthcoming from these studies. Genetic damage suggested by Bue et al. (1996) raises the question about the mechanism through which such damage would occur. Gametogenic impacts from oil were thought to be remote because of the low WSF concentrations present, but since bioassays with petroleum have not examined gametogenic effects from oil exposure of salmon, it is a possibility that needs consideration. Two different mechanisms for damage were possible with PWS pink salmon populations based on exposure history. The first was potentially reduced fertility or gamete inviability induced by exposure to oil during late incubation and early marine residence of the 1988 brood, or from long-term exposure of the 1989 brood during the entire incubation period. In 1990 and 1991, Brannon et al. (1995) tested the viability of eggs of returning spawners that had been exposed to oiled and non-oiled conditions as progeny from the 1988 and 1989 broods. There were no differences in egg and alevin survival between oiled (91%) and non-oiled (90%) exposed lineages in 1990 (p = 0.574) or oiled (97%) and non-oiled (96%) lineages in 1991 (p =0.656). However, Bue et al. (1996) using an alteration of the method, examined for genetic effects beginning four years after the spill. As demonstrated in the above papers, there was a significant survival difference between oiled (80%) and non-oiled (88%) lineages in 1993 (P=0.012), but not in oiled (80%) and non-oiled (85%) lineages in 1994 (p=0.308). Also, research at Auke Bay, NMFS, (Heintz et al., 1996) demonstrated gonadal cell apoptosis among fish exposed to low PAH levels during incubation, which could translate into problems in gametogenesis. It is expected that gamete viability and genetic assessment of pink salmon

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spawning in naturally oiled streams should provide significant insight into the possibility of gametogenic problems in development or maturation related to oil exposure during incubation.

The second area of potential genetic effects, and based on work at the Auke Bay laboratory, is through mutations or molecular aberrations in developing embryos exposed to oil. It has been suggested that oil can induce mutations in somatic tissues and lead to physiological dysfunction, or mutations can occur in the germ cell lines and be transmitted to future generations. Both heritable mutations and somatic mutations from chronic exposure to oil have been hypothesized as the cause of embryo mortality in oiled streams following the EVOS. Wirgin et al. (1997) showed mutations in the K-ras oncogene in 41%-68% of the pink salmon embryos experimentally exposed to oil, but not in non-oiled embryos. The oil-induced K-ras mutations could be an important finding from a toxicological standpoint, but the doses required for mutation induction, and the potential effects on fitness of individuals and populations in the wild need thorough assessment. It was stated this study indicated that oil may induce somatic mutations at hotspots in K-ras in pink salmon, which might have negative effects on fitness. The authors note this is the "first demonstration of DNA sequence alterations caused by exposure to environmentally released oil...." They note that K-ras mutations may serve as a sensitive assay for monitoring the effects of toxins in the environment. However, there are questions stemming from their study including: Can oil induce K-ras mutations in the natural environment? Is K-ras mutation dose-responsive? What extent of inter-specific variability in susceptibility exists in feral fish species? What is the potential for the K-ras mutations to be heritable? Our work will address the first question by quantifying the nature and extent of K-ras mutations in pink salmon from chronically oiled and non-oiled streams. If mutations are found, we may be able to address the other questions with our measurements of oil concentrations in the environment and genetic analysis.

The genetic studies offer a new dimension in understanding the effects of developing salmonid embryos exposure to oil. The shortcoming with the previous studies on genetic effects is that they were executed on juveniles exposed to oil during a single occurrence over the ancestral life history of the local stocks. Opportunities for a more exaggerated inducement of gametogenic effects or molecular alterations in pink salmon would be in those fish that have been subjected to sustained exposure over generations of incubation in naturally oiled streams. Because research and conclusions about the impact of the *Exxon Valdez* oil spill will in large measure affect the response of government and cost of remedial actions to such disasters in the future, it is important that the correct information is generated about the risk associated with oil spills of this nature. The contributing scientists in this proposal believe this work will help resolve some of the questions that still face the Trustee Council about the effects of oil.

NEED FOR THE PROJECT

A. Statement of Problem

Two principle differences of opinion exist about the effects oil had on incubating pink salmon embryos in Prince William Sound streams. Research by scientists of Exxon concluded there were no incubation impacts. ADF&G scientists believe mortalities occurred in oiled incubation streams, and suspect the cause to be associated with genetic damage or physiological dysfunction. Continuation of the previous studies on incubation mortalities in Prince William

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Sound streams will not resolve these differences. The contributing scientists believe that significant progress can be made toward understanding the effects of oil on pink salmon by examining incubating and adult pink salmon in streams that have a history of exposure to oil from natural oil seeps. The extent of, nature of, or lack of egg inviability, embryo mortality, and molecular aberrations under persistent exposure to oil over generations of incubation will demonstrate either (1) the negative effects on survival, or (2) genetic alterations in oiled streams, including elevated frequency of the K-ras mutation, or (3) responses no different from incubating embryos in non-oiled streams.

B. Rationale/Link to Restoration

The effect of oil on incubating pink salmon has been characterized as severe, resulting in 30% to 50% higher mortality with long-term genetic or physiological damage in subsequent generations compared to pink salmon incubating in non-oiled streams. Other evidence suggests no negative impacts will occur at the level of oil contamination that reached Prince William Sound Streams. The actions that government must take in the event of such disasters, the cost to the public, and the measures taken to address recovery must be based on the best and most accurate assessment of impact. Ten years of Trustee research aimed at resolving these quesitons and accommodating resource recovery procedures, without the issue being brought to closure would be contrary to the charter of the Trustee Council. This research is expected to assist the Trustee Council in rendering the appropriate assessment of risk from such disasters.

C. Location

The project will be undertaken on the southern Alaskan Peninsula, in an area where natural oil seeps exist in ADF&G index streams for pink salmon. In some places, oil has spread over the incubation substrate for thousands of M^2 of spawning ground. The streams are located on the Peninsula directly across from Kodiak Island, between Puale Bay and Jute Island. The significance of the location is the presence of naturally oiled streams. The significance of the research at that site is its application to the understanding of pink salmon responsiveness to oil, as it applies to Prince William Sound. The communities that are affected by this work are commercial fisherman, community participants, and agency biologists managing fisheries resources.

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

Community awareness of the results of the project will be made available in published reports, news articles, and extension information sponsored by the US Department of Agriculture Extension in the form of information and educational pamphlets. Local charters will be used for transportation and assistance in field sampling. Residents and people familiar with the location have already participated in providing information about the sites and access. Local residents (Kodiak) will also participate in the project through labor assistance and distribution of resulting knowledge from the study.



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PROJECT DESIGN

A. Objectives

The general goal of the study is to assess the mortality and physiological responses of pink salmon to the degree of oiling experienced in natural oil seep streams. Based on comparison of pink salmon returning to and incubating in streams that have natural oil seeps and streams without oil seeps, the following objectives are identified.

- 1. Evaluate potential molecular aberrations in embryo and adult tissues.
- 2. Assess egg viability.
- 3. Determine incubation mortalities and analyze for stage of mortality.
- 4. Determine embryo tissue contamination load.

B. Methods

The methods will focus on the relative survival of incubating pink salmon m naturally oiled streams in four trips by measuring (a) oil concentrations present, (b) live/dead embryo ratios, (c) tissue contamination loads, and (d) molecular aberration in embryo and adult tissues.

Ho1: Pink salmon incubation in naturally oiled substrate (PAH >1000 ppb) will not result in higher mortality than in non-oiled substrate.

Corollary: Rejection of Ho1 indicates that measured PAH concentrations in incubation substrate will correlate with mortality at the sample sites.

Ho2: Pink salmon incubation in naturally oiled substrate (PAH >1000 ppb) will not result in genotoxic responses.

Corollary: Rejection of Ho2 indicates that PAH concentrations measured in incubation substrate will result in detectable genetic impacts leading to long-term genetic damage.

Stream Selection

Streams selected for the study will include both oil and reference categories, as in the PWS studies. The streams selected will include naturally oiled sites on the South Alaska Peninsula, specifically Oil Creek west of Cape Aklek, Teresa Creek east of Cape Aklek in the Puale Bay, and Jute Creek north of Jute Island between Cape Unalishagvk and Cape Kanatak (Fig. 1). Non-oiled streams will be selected from the adjacent locations, such as Trail and Rex creeks, but final selection will depend on ADF&G stream survey data and PAH monitoring.

Site Characterization

Based on the preliminary physical survey of the sites, study reaches will be selected from both oiled and non-oiled streams. The preliminary survey will involve both physical survey and substrate samples for rapid analysis to characterize the study reaches before the spawning period.

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Figure 1. Sites of oiled streams selected for study on the Southern Alaska Peninsula

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Stream segments will be surveyed by taking five nested substrate samples in the area below and adjacent to oil seep points to classify the general contamination level of the reach prior to spawning. Nested substrate samples from each stream reach will involve five sample points around selected sites encompassing an area of 30 M^2 . At least three reaches in each oiled and non-oiled stream will be included for the study. Oiled reaches will be assigned a contamination level based on the PAH concentration within the identified reaches.

At the time of egg and alevin sampling, each sample station from which eggs or alevins are removed will have three substrate samples taken (left side, right side and upstream) to characterize the oil level at the point around the station as precisely as possible. Experience has demonstrated that following the spill, oil concentration levels varied within each affected stream. In this situation, the source of oil will have been seeping over an extended period and it is assumed that substrate samples will represent less variable concentrations, but that is yet to be demonstrated. Oil contamination levels from the station samples will be used to analyze for correlation of incubation mortality with hydrocarbon concentrations to develop a damage response relationship with hydrocarbon dose. Dose-response analyses will be based on the assumption that toxic effects on eggs and larvae would represent the local chemistry measured at each sampling station and responses between stations are independent.

Substrate Oil Concentration Analyses

The hydrocarbon contamination of stream substrate samples will be characterized by analysis for Polycyclic Aromatic Hydrocarbons (PAH). Samples will be collected in pre-cleaned glass containers with separate scoops to preclude contamination. After collection, the samples will be frozen and transferred to an analytical laboratory. Samples will be analyzed for gas chromatography/mass spectrometry (GC/MS) with quantification by selected ion monitoring (SIM) analysis (Sauer and Boehm, 1991). Field quality control procedures will include periodic sample duplicates and field blanks. Quality assurance and sample control will be maintained by chain-of-custody procedures. All samples will be assigned a specific code label in the field with which to identify and track that sample through analysis and reporting.

Egg Viability

In each oiled and non-oiled stream, gamete viability will be assessed within the spawning population. In each stream, ten females will be removed from their redds with dip nets and from each approximately 400 eggs artificially spawned. The 400 eggs will be divided into two lots, and each lot fertilized with a different male from that stream. Eggs will then be washed, water hardened for 30 minutes, and placed in Whitlock-Viebert incubation chambers (Reiser and White, 1981). All work will be executed under water as much as possible. The twenty separate incubation chambers will then be buried in a prepared single non-oiled station of a control stream for incubation to the early eyed stage. At least 30 days after the eggs are spawned, the incubation chambers will be removed from the substrate, live/dead ratios noted, and preserved in 5% acetic/formalin. Samples will later be scored for percent viability based on the number of blanks versus the number of eyed embryos in each sample. Egg samples will also be taken and preserved in 5% standard formalin at spawning time for base egg weight in the kD analysis of pre-emergent alevins in the alevin survival examination.



Embryo Survival

Approximately 30 days after spawning has been completed in each oiled and non-oiled stream, the naturally spawned incubating eggs will be sampled to assess for live/dead ratios. Samples will be taken at ten sites along separate diagonal linear transects from right to left banks across each study reach. Sampling will be executed using the standard technique of pumping water into the substrate and collecting individuals in a net that surrounds an approximate 0.3 m^2 collection site (McNeil, 1964). The egg samples will be scored at the site for number of live and dead. Dead eggs will be examined for eyes to estimate time of mortality by preserving in 5% standard formalin and clearing with saline and glycerin in the laboratory.

As mentioned above, substrate samples will be taken adjacent to each station to analyze for sediment PAH. The samples will be taken from the surface of the stream bed using a stainless steel scoop.

Alevin Survival Estimates

In the spring before fry emergence alevin sampling will be conducted in each oiled and non-oiled stream to assess for pre-emergent live/dead ratios. Samples will be taken at ten sites along separate diagonal linear transects from left to right banks across each study reach. Sampling will be done at ten stations per stream reach using the standard technique of pumping water into the substrate and collecting individuals in a net that surrounds the 0.3 m^2 collection site as mentioned above. The number of live and dead individuals in each sample will be counted directly from the sample biomass. Thirty alevins from each station will be preserved for further analysis. Ten alevins will be preserved in 90% ethanol for DNA and molecular aberration analysis. Ten alevins will be frozen for analysis of PAH tissue level, and ten preserved in 5% formalin from each station to analyze for condition index:

 $kD = \frac{10 * (wt in mg)}{(length in mm)} \frac{1/3}{2}$

The kD analysis will add a further dimension to the study other than mortality. The use of the weight/length relationship or developmental index (Bams, 1970) provides an assessment of the degree of advancement of emerging fry. However, the kD index compared at weight will provide insight on the metabolic efficiency in converting yolk stores to tissue. If higher energy is required for expunge oil, the alevin kD at a given weight would be lower, relating to a degree of inefficiency in yolk conversion. This analysis is applicable when original yolk weight is known, and these data will be available in the egg viability studies.

As undertaken in analysis of embryo survival, sediment samples will be obtained from each tide stratum to analyze for substrate PAH. Substrate samples will taken from each station to analyze for grain size through standard sieves according to particle sizes that correspond to those recommended by Platts et al. (1983). The sieving process will flush the samples with water and the contents volumetrically measured based on water displacement. Grain size data will generate the "fredle index", sensitive to permeability and pore size (Lotspeich and Everest, 1981).

Adult Tissue Samples and Tissue Analyses

Spawning adults in each of the oiled and non-oiled streams will be sampled for tissue analysis to include PAH level and molecular aberrations. Muscle and liver samples will be divided: half frozen, half in 90% ethanol. Stream samples will be taken from adults used in the viability studies. Adults will be captured with dip nets.

Three analytical approaches will be taken on adult and embryo tissue analysis. First is the determination of whether or not significant changes have occurred in selected DNA sequences within and among individuals of both reference an experimental populations. Both mitochondrial and nuclear DNA will be examined as well as gene and non-gene regions. Two separate regions of mitochondrial DNA (mtDNA) will be sequenced. The polymerase chain reaction (PCR) will be used to amplify a portion of the non-coding D-loop region and a portion of the cytochrome b gene. The changes in nucleotide sequence from both mtDNA regions will be compared within and among populations. Nuclear gene sequences will be compared using the single-strand conformational polymorphism (SSCP) technique. Intron sequences from two nuclear genes (growth hormone and p53) will be amplified using PCR and analyzed with an ABI Prism 310 genetic analyzer to detect point mutations. Aside from the possibility that an elevated rate of mutation within the experimental (oiled) populations may be detected, the analysis will assess intra- and interpopulational genetic diversity and divergence.

Second, the level of genetic diversity among and within the populations will be correlated to differences in fluctuating asymmetry observed in morphological characters measured among the returning adult salmon. Fluctuating asymmetry will be assessed among ten cranial characters from the 20 sampled returning adults per stream. Cranial characters will be documented by digitizing photographs and using SigmaScan/Image measurement software. Fluctuating asymmetry or differences in measurements of right and left side are consistent with empirical support which suggests a reduction in heterozygosity results in a concomitant increase in developmental instability. An increase in fluctuating asymmetry (phenotypic variance) may indicate adverse developmental changes have occurred from exposure to oil. Alternatively, an increase in asymmetry may also be due to a loss of genetic diversity. A loss of genetic diversity may be the consequence of genetic drift, founder effects, or a population bottleneck resulting from an intense selection. The genetic information gathered in the first method will facilitate the fluctuating asymmetry analysis in describing phenotypic variance and likely genotype-environment interactions.

The third approach to assess genetic effects of oil will focus direct assessment of the frequency of mutations in pink salmon in oiled and non-oiled environments. Identification of mutations at the molecular level is difficult because the probability of a particular gene being mutated is relatively small. The probability of detecting mutations can be enhanced if genes known to be susceptible to mutation are analyzed. Wirgin et al. (1997) used such an approach to assess mutations in pink salmon experimentally exposed to oil. This study showed mutations in the K-*ras* oncogene in 41%-68% of the pink salmon embryos experimentally exposed to oil and no mutations in embryos not exposed to oil. K-*ras* is an oncogene, which is important in regulation of cell growth and development. Mutations in K-*ras* are associated with cancerous tumors in humans, and in tumors in rodents and fish which have been exposed to toxins. Mutations tend to occur in "hotspots", including codons 12-13 of exon 1 and codons 59 and 61-63 of exon 2 of K-*ras*.

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We will use the methods developed by Wirgin et al. (1997) involving PCR amplification and direct sequencing of portions of exon 1 and exon 2 of the K-*ras* gene from pink salmon collected in the oiled and non-oiled environments. We will conduct analyses of K-*ras* DNA sequences in pink salmon from oiled and non-oiled streams to address the following questions:

- 1. Are there K-*ras* mutations in wild pink salmon *embryos* from naturally oiled or non-oiled streams as observed in the experimentally-oiled embryos?
- 2. If mutations are present in wild pink salmon embryos, what is the frequency of the mutations in embryos incubating in oiled and non-oiled streams?
- 3. Are there K-*ras* mutations in wild pink salmon *adults* from naturally oiled or non-oiled streams?

We will replicate the methods developed by Wirgin et al. (1997) in our laboratory at the Center for Salmonid and Freshwater Species at Risk, University of Idaho, Hagerman, Idaho..

Statistical Analysis

Two analyses of oil exposure results will be applied. One general approach will test the significance of oil hydrocarbon concentrations (i.e., PAH) in describing a dose-response. Hierarchical regression will be used to test the correlation with hydrocarbon concentrations. For independent variables, fraction eyed in studies of egg viability, and fraction alive in studies of embryo survival and alevin pumping will use the Generalized Linear Interactive Modeling (GLIM: NAG, 1985) to test for effects. Condition factors from the fry trapping studies using log-transformed kD factors will be analyzed assuming a normally distributed error structure using analysis of variance (ANOVA). The experimental units used in the dose-response analyses will be the individual sampling stations within streams. The second analysis will compare mean responses between streams classified as either oiled and non-oiled. In this analysis, the streams will serve as replicates and stations as subsamples. GLIM with analysis of deviance procedures (ANODEV) will be used to analyze responses. The effects of oiling will be evaluated based on one-tailed tests at significance level = 0.05 in all cases.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

<u>Dr. L. Moulton</u> is a contract fisheries consultant biologist and because of his extensive experience in Alaska and PWS research expertise, he will be responsible for all field sampling in the study and coordination.

<u>Dr. M. Cronin</u> is a contract genetics consultant and with his extensive experience in genetics research in Alaska, he is responsible for overseeing all specific task genetic analysis and subcontract diagnostics, and interpretation of genetic data.

<u>Autor D. Little</u> chemistry analytical laboratories will process all water, sendiment, and tissue samples collected from naturally oiled and non-oiled streams for PAH concentrations.



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SCHEDULE

A. Measurable Project Tasks for FY99

With the pink salmon return, spawning and incubation beginning in August and continuing through to the following spring, the project will overlap the fiscal year division. Planning and preliminary work undertaken before the October beginning date will occur through supplemental funds from the Center for Salmon and Freshwater Species at Risk.

October $1 - 4$:	Arrange logistics for sampling
October $5 - 9$:	Collect egg samples for live/dead analysis
October 10 – 31:	Process tissue and egg samples, and log data
November $1 - 30$:	Finish tissue and egg samples, and log data
March 25 – 31:	Arrange logistics for sampling
April 1 – 14:	Collect alevin incubation samples for live/dead analysis
April 15:	Submit progress report
April 20 – 30:	Process and analyze alevin data
May 1 – 10:	Assess embryo tissue PAH levels
May 11 – 31:	Prepare final report
June 1 – 15:	Submit a manuscript for publication.
June 15 – 30:	Prepare extension information
July 1 – 31:	Distribute information pamphlets and articles on oil effects

B. Project Milestones and Endpoints

November 30:	Evaluate potential molecular aberrations in embryo and adult tissues.
November 30:	Assess egg viability.
April 15:	Submit progress report
April 30:	Determine incubation mortalities and analyze for stage of mortality.
May 10:	Determine embryo tissue contamination load
May 31:	Submit final report
June 15:	Submit manuscript for publication
July 31:	Complete information distribution

C. Completion Date

Work will be completed in July, fiscal year 1999.

PUBLICATION AND REPORTS

A progress report will be submitted by April 15. The final report will be submitted on the project by the end of May. A manuscript entitled *Effects of natural oil seeps on pink salmon incubation success and condition: Implications of oil spills* is planned for submission to the Transaction of American Fisheries Society at the end of May.

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PROFESSIONAL CONFERENCES

Investigators will be available to make a presentation at professional meetings or conferences where the subject matter is invited or appropriate for presentation.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

Coordination through data sharing will be undertaken with projects 190/Linkage Map for the Pink Salmon Genome and 191/Oil-Related Embryo Mortalities. Funds supporting part of the proposed work (\$10,000) will be through the Aquaculture Research Institute, University of Idaho, for habitat research of salmonid species.

PROPOSED PRINCIPAL INVESTIGATOR

Name Affiliation Mailing Address Phone Number Fax number e-mail address Ernest L. Brannon University of Idaho Aquaculture Research Institute, UI, Moscow, ID 83843 (208) 885-5830 (208) 885-5968 aqua@uidaho.edu



PRINCIPAL INVESTIGATOR

Dr. Ernest L. Brannon is a professor of fisheries at the University of Idaho. He received his Ph.D. at the College of Fisheries, University of Washington. He worked on sockeye salmon and pink salmon for 20 years with the International Pacific Salmon Fisheries Commission in British Columbia, as a fisheries biologists. He was Chief Biologist for the Commission from 1970 to 1973. In 1973 he joined the College of Fisheries faculty at the University of Washington as a professor in salmon life history and culture until 1988. In 1988 he joined the faculty at the University of Idaho as a professor in fisheries and animal science, and is the director of the Aquaculture Research Institute. Research expertise is in salmon life history, behavioral genetics, aquaculture. He has been the Pink Salmon research scientist in PWS for the Exxon Corporation from 1989 to 1998.

OTHER KEY PERSONNEL

<u>Dr. Larry Moulton</u> received his Ph.D. from the College of Fisheries, University of Washington. He has extensive experience in fisheries in Alaska, including work as a fisheries biologist with ADF&G, and later as a private consultant on Alaska fisheries. He is owner of MJM Research, consulting firm, and in that capacity he has been responsible for research, coordination, and analysis of pink salmon, cutthroat and Dolly Varden charr data associated with the *Exxon Valdez* oil spill.

<u>Dr. Matt Cronin</u> received his Ph.D. in biology at Yale University. His expertise in is molecular genetics of wildlife and fish species. He worked with the USFWS in Alaska, and since then has researched extensively the effects of the *Exxon Valdez* oil spill on fish and wildlife. He is presently senior research biologist and office manager for LGL Alaska Research Associates. Inc.

will conduct analysis of K-ras mutations in pink salmon samples.

<u>Dr. Matt Powell</u> is a research professor at the University of Idaho. His expertise is in population genetics. He will conduct DNA analysis of tissue samples, and run nuclear gene sequences using the single-strand conformational polymorphism technique for mutation analysis, and he will conduct analysis of K-ras mutations in pink salmon samples. He will also assess level of genetic diversity among and within the populations by correlating differences in fluctuating asymmetry observed in morphological characters measured among the returning adult salmon.



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October 1, 1998 - September 30, 1999

Per	sonnel Costs:			Months	Monthly		Proposed
	Name	Position Description		Budgeted	Costs	Overtime	FY 1999
	E. Brannon	Principal Investigator		1.0	3.4		3.4
	M. Powell	Research Scientist		1.5	2.6		3.9
	J. Faler	Sr. Scientific Aide		8.0	1.4		11.2
	K. Collins	Sr. Research Tech		1.0	2.0		2.0
							0.0
							0.0
							0.0
							0.0
							0.0
10							0.0
							0.0
							0.0
		Subtotal		11.5	9.4	0.0	
					Per	sonnel Total	\$20.5
Tra	vel Costs:		Ticket	Round	Total	Daily	Proposed
	Description		Price	Trips	Days	Per Diem	FY 1999
	4 3-day, 3-night sampling trips	; 3 people per trip from Seattle area to sampling	g sites				0.0
	\$400/person/trip airfare		1.2	4			4.8
	\$80/day/trip car rental		0.2	4	10		0.8
	\$150/person/day meals and	dlodging			12	0.5	6.0
		and a Market March 00.07 4000 Anches					0.0
1917-13 1919-1919	1 rustee Council's Annual Hest	oration workshop, March 23-27, 1999, Anchora	age, AN	4			0.0
	\$500 airrare from Puliman,	ννΑ ~	0.5	1	e	0.2	0.5
	\$150/day meals and lodgin	g			0	0.2	1.2
							0.0
							0.0
							0.0
				L		Travel Total	\$13.3
	······································						
		Project Number:					
	FY 99	Project Title: Effects of Oil Spill or	Pink Salm	n		F	rsonnel
		Name: Ernest Prenner					& Travel
		Iname: Emest L. Drannon					DETAIL

Prepared:

4/13/98, 2 of 4

FY 99 EXXON VALDEZ TRUSCE COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

Contractual Costs:		Proposed
Description		FY 1999
M. Cronin, Consultant, LGL Alaska Research Associates, Inc. L. Moulton, Consultant, MJM Research Author D. Little Laboratory PAH sediment analysis Plane charters from Kodiak, AK 8 trips @ \$2000/trip		11.4 13.6 27.0 16.0
Contractual	Total	\$68.0
		Proposed
Commodities Costs:		FY 1999
Genetic lab analytical costs: expendable supplies and chemicals Rental equipment: gravel sampler Zodiak 14'		26.8 0.5 5.0
Commodities 1	otal	\$32.3
FY 99 Name: Ernest L. Brannon	FC Con Con E	DRM 4B tractual & nmodities DETAIL

FY 99 EXXON VALDEZ TRUSCE COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

New	Equipment	Purchases:	Number	Unit	Proposed
Des	cription		of Units	Price	FY 1999
					0.0
	no new equip	oment			0.0
			1		0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
The		associated with replacement equipment should be indicated by placement of an R		inment Total	0.0
	ting Equipmo	associated with replacement equipment should be indicated by placement of all H.		Number	φ <u>0.0</u>
	cription	in Osaye.		of Unite	
1000					
	no previous	ourchases from Trustee Council Funds			
					1000
		Project Number		F	ORM 4B
		Project Number.		E	auipment
					DETAIL
	1 33	Name: Ernest L. Brannon			
				L	

Effects of Oil Spill on Pink Salmon -- Working Budget

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	Hourly				Line Item	Trustee	
Category	<u>Rate</u>	<u>FTE</u>	<u>Wages</u>	<u>Fringe</u>	<u>Totals</u>	<u>Funds</u>	Matching
PERSONNEL							
E. Brannon, Pl	43.86	0.02	1,825	520	2,345	2,345	-
	43.86	0.08	7,298	2,080	9,378	-	9,378
M. Powell, Research Scienti st	25.00	0.05	2,600	741	3,341	3,341	-
J. Faler, Sr. Scientific Aide	13.65	0.30	8,518	2,939	11,456	11,456	-
K. Collins, Sr. Research Tech.	12.21	0.05	1,270	438	1,708	1,708	-
	12.21	0.05	1,270	438	1,708	<u> </u>	1,708
Totals					29,936	18,850	11,086
SUPPLIES							
Field Supplies:							
dip nets, sample jars, egg boxes, Genetic lab analytical costs:	dry ice chests	and ice			500	. •	500
expendable supplies and chemics	als				26,772	26,772	-
nental equipment.					500	500	_
Zodiak 14'					5 000	5 000	-
Totals					32.772	32.272	500
						·	
		O					
3-day, 3-night sampling trips; 3 pe	eople per trip tr	om Seattle a	area to sampli	ng sites	4 000	4 900	
\$400/person/trip almare					4,800	4,000	-
\$150/person/day meals and lode	aina				5 400	5 400	_
Trustee Council's Annual Restoration	an Workshon N	Aarch 23-27	1999 Ancho	rane AK	3,400	5,400	-
\$500 airfare from Pullman, WA			, 1000, / 110110	rugo, / irt	500	500	- ·
\$150/day meals and lodging					900	900	-
Totals					12,560	12,560	-
CONTRACTORS AND CHARTERS		eletee lee			11 400	11 400	
M. Cronin, Consultant, LGL Alaska	Research Asso	ciates, inc.			13,400	13 600	-
Author D. Little Laboratory PAH s	adiment analys	eie			27 000	27 000	-
Plane charters from Kodiak AK 8	trips @ \$2000	/trin			16.000	16.000	-
Totals					68,000	68,000	
					500	_	500
ΙΟΙΔΙ					500	-	500
Total Direct Costs					143,768	131,682	12,086
Indirect Costs @ 44.7%					64,264	58,862	5,403
TOTAL BUDGET					208,032	190,543	17,489

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Soldotna Swiftwater Park Recreational Access and Habitat Restoration Project

Project Number: Restoration Category: Proposer: Lead Trustee Agency: Alaska SeaLife Center: Duration: Cost FY 99: Geographic Area: Injured Resource/Service:

99495

Habitat Improvement City of Soldotna ADNR no 1st year, 1 year project \$233,241.00 Kenai River at Soldotna, Kenai Peninsula, AK Recreation and tourism including sport fishing and other recreational uses.



ABSTRACT

The Soldotna Swiftwater Park Recreational Access and Habitat Restoration Project will renovate and expand the existing "volunteer" boardwalk which was installed in 1995 to provide additional protected pedestrian access to designated fishing and viewing stations along the Kenai River. It will also provide a multi-use platform at the boat launch for boat staging and other uses. Finally, foot traffic will be controlled and previously damaged bank areas will be stabilized, restored and protected using a variety of methods intended to provide a naturally functioning riparian zone.







Introduction

Swiftwater Park is Soldotna's second largest multi-use park. Located at approximately mile 23 of the Kenai River, the park provides outdoor recreation opportunities for local residents and visitors alike. Swiftwater Parks amenities include 38 tent/RV campsites, a day use picnic shelter, river bank access areas and a boat launch facility. Park use figures for 1997 indicate that approximately 7864 people took advantage of the parks facilities during the May-Oct. season, an increase of 17% from the previous year.

Bank access in the park is provided predominantly in two areas. One upstream in the vicinity of the boat launch, the other downstream near the campsites. The upstream area receives significant usage by bank anglers as well as boaters staging for launch and haul-out activities. In 1995, a project was constructed by local volunteers providing approximately 128 feet of boardwalk which protects wetlands inland from the river bank from trampling. This project however provides no protection to the shoreline area.

Downstream, bank access has traditionally been at the base of a steep cut bank adjacent to the camp ground. This area has been predominantly used for bank angling which has contributed to significant denuding of the cut bank as well as the shoreline. In 1997, a cooperative restoration and protection project was undertaken by the City, Phillips Petroleum, and the Youth Restoration Corps. This project provided an elevated, light penetrating "Fish walk", access stairways, fencing, and restoration and re-vegetation of the heavily damaged areas.

NEED FOR THE PROJECT

A. Statement of Problem.

The upstream area of Swiftwater Park is an increasingly popular river access and recreation site. The park provides one of the few developed public launch and haul-out facilities between Isaak Walton State Rec. Area in Sterling and Centennial Park located below the Soldotna Bridge. In addition, the Park provides the only public restroom facilities between the State Parks facility at Funny River and Centennial Park. These factors have contributed to a marked increase in boat usage and associated damage to banks in this area.

Use of Swiftwater's bank for access to the river has also been on the rise. In addition to intensive bank angling pressure during Sockeye season the upstream area provides for a popular Coho and Pink Salmon fishery as well. The popularity of these fisheries has contributed greatly to erosion and loss of vegetation along some 600 feet of the parks upstream bank.

Finally, the parks facilities are seeing increasing use by non-fishing recreationalists. Improvements such as the downstream "Fishwalk" and the volunteer boardwalk have provided safe, convenient access for river and wildlife viewing, picnicing and photography. In addition, a growing number of Kayakers are taking advantage of white water rapids just upstream from the launch facility.

Prepared 4/13/98

The intensity of these uses has caused significant habitat loss and accelerated erosion. Impacts which will only continue to increase if not addressed in some fashion. But the options for mitigation are limited. Given the Swiftwaters accessibility, popularity and value to the community as a recreational and economic resource closing the area to fishing is not considered a feasible option. Therefore, protecting and restoring the bank while providing responsible access and improved facilities is the preferred alternative.

B. Rationale/Link to Restoration

As more and more access is closed to the public through acquisition or emergency order the harmful effects of human use become concentrated in those areas which are still available. The City of Soldotna takes pride in its leadership role in providing habitat friendly access to the Kenai River's recreational opportunities. Over the past several years Soldotna has worked cooperatively with a number of agencies and organizations to provide responsible access to the River; to restore previously damaged habitat; and to protect areas where habitat damage has not yet occurred. This project will continue our award winning contributions.

The Swiftwater project will provide protected access through a valuable wetlands area to an additional 171 lf. of bank protecting structures for fishing, viewing and other recreational uses while deterring access to unprotected areas. It will restore and protect nearly 400 feet of damaged riverbank through a combination of active restoration and passive re-vegetation. It will provide an upgraded launch facility by providing an elevated, light penetrating platform for a combination of boat staging and other recreational uses. Finally, it will provide for additional parking, including handicap facilities, at the base of the walkway project.

C. Location

The project will be located on the upstream end of Swiftwater Park in the City of Soldotna. The Park is approximately ½ mile from the Sterling Highway off East Redoubt Ave. and is located on the right bank of the river at approximately river mile 23.

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

The community has a fairly long history of involvement in the maintenance and development of projects at Swiftwater Park. The existing upstream walkway through the wetlands was constructed by volunteers from the community. The underpinnings of this walkway will be used as the foundation for the rehabilitation project on this section. Volunteers spend hours each spring in trash collection and clean-up at the park in conjunction with annual river wide clean-up efforts. In addition, the 1997 downstream "Fish walk" and stairway project was constructed as a community service by Phillips Petroleum with restoration work provided by the Youth Restoration Corps.

Community volunteers will continue to be encouraged to be involved in the maintenance and development of Swiftwater Park. Volunteer labor is being considered for such tasks as dismantling the existing walkway, preparing the foundation for the new work, brushing out the new walkway locations and cleanup of litter and debris. Volunteers may also be used on an

Prepared 4/13/98

Project 99____

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annual basis for the seasonal removal of structures. Because of the technical nature of the proposed construction work and the variety of equipment and expertise involved in the project it is anticipated that volunteer labor will not be used in the actual construction phase. However, if past experience is any guide it is anticipated that the construction work will be done by a local contractor in accordance with local hire principals.

PROJECT DESIGN

A. Objectives

- 1. Rehabilitate the existing boardwalk by widening and replacing the framing and decking.
- 2. Replace the existing wood planked walkway stubs with light penetrating material to promote vegetation growth in the near shore area.
- 3. Construct additional wooden walkway to provide access to designated riverbank access sites and protect the wetlands from further damage.
- 4. Install elevated, light penetrating walkway stubs, "Fishwalk" structures and hip boot access stairs to provide protected recreational access to the river bank.
- 5. Restore and re-vegetate previously damaged areas of the bank using a variety of techniques to provide a naturally functioning and appearing riparian zone.
- 6. Install spruce tree revetments and barriers to discourage foot traffic in unprotected areas.
- 7. Install educational signage related to the project and habitat values which it protects.
- 8. Evaluation of effectiveness and modifications if necessary.

B. Methods

Construction and rehabilitation of the walkways, platforms and other structures will be done using methods with a proven track record on the Kenai River. All structures within 20 feet of the ordinary high water line will be constructed with light penetrating gratings to provide for vegetation growth below. This will also allow the structures to be used effectively for all anticipated recreational uses. Gratings will be selected which comply with ADA standards. All river access stairways, in-river supports and structures subject to ice damage will be designed to be seasonally removable.

All walkways located greater than 20' from the ordinary high water line will be constructed of treated wood decking and framing. These structures will be designed and installed to comply with Kenai Peninsula Borough standards for boardwalks. They will incorporate seasonally removed panels to provide passage for animals across and through the riparian area. This construction will also be ADA compliant, less costly per foot and will provide more than adequate protection to the underlying wetlands.

All structures will be supported by steel pilings driven into the ground to reduce disturbance of vegetation during construction. All pilings placed below ordinary high water will be removable and will be driven within 3' of the bank line.

Restoration and re-vegetation will consist of a combination of several methods found to be successful on the Kenai. Bank areas at designated access sites will be stabilized using a combination of rootwads, coir log brush layering, live siltation, and large boulders. This treatment will allow the structures to be effectively used for bank angling as well as other uses.

Travel from protective structures to unprotected areas will be deterred through the use of large, dense, spruce trees imported and placed perpendicular to the bank with the tops extending over the ordinary high water line by a maximum of 2'. This arrangement should discourage foot traffic in the unprotected, restored areas as well as provide an additional overhanging cover component for near shore habitat.

In areas where access is discouraged spruce revetments will be installed to stabilize the bank and provide a cover component until overhanging vegetation is re-established. The dense spruce revetments should protect the damaged bank from erosional forces as well as discourage bank angling due to the likelihood of snagging and entanglement.

Disturbed areas will be re-vegetated with a combination of native herbaceous and woody plant species. This includes the transplanting of grasses, willows, alders and other woody plant species, live staking of willows and overseeding with native grass seed. This combination of vegetation should provide a diverse plant mix which at maturity should provide a naturally functioning ecosystem.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

In past projects funded through EVOS grants the Alaska Department of Fish and Game has been the lead Trustee agency. Planning, design and evaluation have been a cooperative effort between ADF&G, the Alaska Department of Natural Resources, Division of Parks, and City personnel. We anticipate that this project will be managed similarly. This multi-agency approach has been necessary due to the overlapping jurisdictions on the river. It has also provided a wide range of expertise and ideas on developing effective projects.

As discussed earlier, due to the equipment and technical expertise demanded by this project, the majority will be contracted to the private sector through a bid process. This will include all construction of walkways, platforms and associated structures as well as all restoration and re-vegetation work. Because of the various specialties involved in the project it will be awarded to the lowest bidding responsive and responsible general contractor in accordance with state law.

Some minor ancillary work may be performed by other local vendors, volunteers or City employees. Examples of this work include demolition of the existing walkways decking and framework, pre-construction brush pruning, surveying services, and sign production and installation. It is not anticipated that any work will be contracted to other government agencies.

SCHEDULE

A. Measurable Project tasks for FY 99 (October 1, 1998 - September 30, 1999)

October 1 :	Complete design work, make permit applications.
November 31:	Bid and contract award process.
December 15:	Pre-construction site preparation work.
January 31:	Foundation structure installation phase.
March 23-27:	Attend annual restoration workshop.
April 1 - May 31:	Structure decking and restoration phase.
September 30:	Project evaluation and modification planning phase.
April 1:	Final Report

B. Project Milestones and Endpoints

October 31:	Complete design work make permit applications
November 31:	Advertise bid solicitation, award and finalize contract.
December 15:	Surveying and site preparation of wetland area.
January 31:	Begin foundation structure installation.
March 23-27:	Attend annual restoration workshop.
April 1:	Complete foundation structure installation, begin decking
	installation.
May 1:	Finish decking installation, begin restoration work.
May 31:	Complete access and restoration construction.
June 15:	Complete parking lot improvements. Install signage.
June 30:	Construction complete.
September 30:	Project evaluation, 1st season of use. Project modification
-	plan for 2000.
April 1:	Final Report

C. Completion Date

Construction on the project will be completed by June 30, 1999. Following the seasons use an evaluation of possible necessary modifications will be undertaken. Another evaluation will be done at in the spring of 2000, after the first winter, to determine if any other modification is indicated. Modifications anticipated may include additional plantings to replace dead loss, minor modifications to stabilization work, additional crowd control structures if necessary.

PUBLICATIONS AND REPORTS

None anticipated. Prepared 4/13/98



PROFESSIONAL CONFERENCES

The City would be interested in presenting a review of its past projects and critique of their effectiveness at the 11th annual Restoration Workshop.

NORMAL AGENCY MANAGEMENT

The City of Soldotna relies greatly on the recreational and commercial resources provided by the Kenai River for it's economic stability. For this reason we have taken a leadership role in promoting responsible development, habitat restoration and protected access along the river and it's tributaries. Soldotna was the first municipal government to adopt special zoning regulations to protect the Kenai River from development impacts. We were the first municipal government to work in partnership with the private sector to provide elevated, light penetrating access for sport angling. And, over the past several years Soldotna has continued to strive to protect the river from adverse human impacts while providing recreational opportunities for our residents and guests.

Since the Exxon Valdez incident a great deal of research has been conducted on the Kenai and it's resources. The common thread which links most if not all of the conclusions from this research is that human impacts on the river have a profound effect on the health of the river and the surrounding ecosystems. There have been no requirements mandating municipal land managers to protect the habitat in their holdings. Yet the City of Soldotna has taken this information to heart and has undertaken many projects designed to protect and restore fish habitat in our city parks.

The vast majority of the work accomplished to date has been done with funds from sources other than the Exxon Valdez Trustees Council. Three phases of access protection at Soldotna's Rotary park were completed with volunteer, city, and donated funds. Two phases of work at Centennial Park provided protected access and habitat restoration using city and federal funding. One of the first restoration and protection projects done on the Kenai River, the Soldotna Creek Park project was accomplished with city and state funding. A restoration and access project known as the "Fishwalk" was constructed at the Soldotna Visitors Center using non-profit grant money which demonstrates the use of elevated, light penetrating walkways for angler access . Finally, two phases of protection and restoration work have been finished to date at Swiftwater Park using volunteer and city personnel and funding.

Unfortunately, volunteer effort only goes so far, and funding sources are limited. But visitors and residents continue to seek recreational access to the Kenai, and the City of Soldotna feels a responsibility to provide that access through our parks system. Yet we also feel a duty to attempt, whenever possible, to provide that access in a responsible manner. Without funding by the Exxon Valdez Trustees Council we don't believe that we will be able to provide an adequate level of restoration and protection for Swiftwaters valuable upstream recreational opportunities in the near future.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

The Swiftwater Park Recreational Access and Habitat Restoration Project utilizes similar technology and design as many of its predecessor projects in the city. In its planning we have incorporated the most successful elements of our previous projects to develop a "state of the art" design. When completed, the project will integrate with last years down stream work to provide significant habitat improvement as well as excellent recreational access within Swiftwater Park. And because of the design similarities between all of Soldotna's parks projects, the swiftwater project will integrate nicely into our system wide work.

Coordination of the project will take place on a number of levels. As in the past we anticipate a great deal of coordinated and cooperative effort between the city, contractor, and the states departments of Fish and Game and Natural Resources. Once again we will be sharing our expertise and experiences to develop a well thought out and functional project that will successfully meet our shared goals of habitat restoration, protection, and responsible access development.

PROPOSED PRINCIPAL INVESTIGATOR

Name-	Stephen Bonebrake / Dick Bower
Affiliation-	City of Soldotna
Mailing Address-	177 N. Birch St.
-	Soldotna, AK 99669
Phone Number-	(907) 262-9107
Fax Number-	(907) 262-1245
E-mail address-	dbower@ci.soldotna.ak.us



PRINCIPAL INVESTIGATOR

Steve Bonebrake is the City of Soldotna's Public Works Director and city engineer. Mr. Bonebrake has been involved in the planning, design, construction and management of many publicly owned Kenai River habitat restoration and protection projects over the past several years. Projects completed under Mr. Bonebrake's guidance include Soldotna Creek, Centennial Park phases I -III, Rotary Park phases I-III, Swiftwater Park phases I and II, and the Soldotna Fishwalk.

Dick Bower is Soldotna's Building Official. As a licensed general contractor Mr. Bower has been involved in the planning, design, construction and management of over 15 private and public habitat restoration and protection projects. In addition to his contracting work Mr. Bower has developed and presented several classes in habitat restoration and protection and low impact site planning to Kenai River property owners and local contractors. Mr. Bower has been accepted as an instructor in Streambank Protection and Low Impact Site Planning by the Alaska State Home Builders Assn. and is a member of the International Erosion Control Association.

Mr. Bonebrake and Mr. Bower bring fifty years of combined construction experience to the Swiftwater project. Experience including over 10 years of work specifically in habitat restoration and protection on the Kenai River.



OTHER KEY PERSONNEL

Other key personnel from the City will include Andrew Carmichael, Soldotna's director of Parks and Recreation; Thomas Boedeker, City Manager; Ken Lancaster, Mayor; and the members of the Soldotna City Council, and agency representatives from the Kenai River Center.

LITERATURE CITED

None



	Authorized	Proposed			
Budget Category:	FY 1998	FY 1999			
Personnel		\$13.5			
Travel		\$0.9			
Contractual		\$210.5			
Commodities		\$4.0			
Equipment		\$0.0	LONG RANGE FUNDING REQUIREMENTS		
Subtotal	\$0.0	\$228.9	Estimated Estimated Estimated		
Indirect		\$7.0	FY 2000 FY 2001 FY 2002		
Project Total	\$0.0	\$235.9	\$0.0 \$0.0 \$0.0		
Full-time Equivalents (FTE)		13.0			
	Dollar amounts are shown in thousands of dollars.				
Other Resources					

Indirect costs were computed using a rate of 3% of the project total.

No NEPA costs are anticipated in this project.

Contractural costs include labor and materials at State Wage and Hour rates.

All design/engineering, management and local inspections will be accomplished by City of Soldotna staff.

Permit fees are shown under contractural costs.

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FY 99 EXXON VALDEZ TRU E COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

Contractual Costs:	Proposed
Description	FY 1999
Restoration /re-vegetation of damaged riverbank and construction of habitat protective structures	210.0
Surveying and Geo-technical fees	0.5
Contractual Tatal	\$240.5
Contractual Total	\$210.5
	EV 1000
Miscelaneous fasteners, signs, sign posts, etc.	4.0
Commodities Total	\$4.0
Project: 4/13/98	RATAN 412 Interaction P Interaction DESIGN

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FY 99 EXXON VALDEZ TRUSSEE COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FY 1999
No equipment purchases with this project			0.0
	ч.		0.0
		1	0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
		· · · · · · ·	0.0
Those purchases associated with replacement equipment should be indicated by placement of an R.	New Equ	Ipment I otal	\$0.0
Existing Equipment Usage:		Number	
		of Units	
All equipment on this			
All equipment on this			
	tretand.		-
(Frightson) N Hendlands			TEM SIE
(EV) (NO)	in an and	C rep.	illine and
U. U. S.S.			The street state
Married Burk I Press Plan of Southalan	URBERTS	14	
	12-21-22-22		1049 E 44

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Boardwalk Details



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Soldotna Centennial Park Uplands Access Trail Project

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APR 1 5 1998

EXXON VALDEZ OIL SPILL

Project Number: Restoration Category: Proposer: Lead Trustee Agency: Alaska SeaLife Center: Duration: Cost FY 99: Geographic Area: Injured Resource/Service:

99496

Habitat Improvement City of Soldotna Alaska Department of Fish and Game No 1st year, 1 year project \$87,792.00 Kenai River at Soldotna, Kenai Peninsula, AK Recreation and tourism including sport fishing and other recreational uses.

ABSTRACT

The Centennial Park Upland Trail Project was first proposed as a part of the Phase II habitat and access improvements project completed in 1997. That project provided habitat restoration, elevated light penetrating walkway at the top of the parks upstream cutbank area, and three sets of stairs accessing the river bed for angler use. The Upland Trail Project will provide a safe, durable path for campers and day use visitors to reach the bank top walkway, reducing trampling of the surrounding area and allowing natural re-vegetation of the disturbed areas.





Project 99____

INTRODUCTION

Centennial park is the largest multi-use park in the City of Soldotna. With 166 camp sites, day use areas, a heavily used boat launch facility and lengthy river bank, the park is a popular destination for visitors and residents alike. So popular in fact that in 1997 approximately 39,309 people used the parks facilities. This number represented an increase of about 1% over the previous year even though a part of the park was closed due to construction.

In 1997 the City undertook an extensive habitat restoration and access project with the help of funding from a grant by the Exxon Valdez Oilspill Trustees Council. Heavy use by bank anglers had created significant damage to the upstream cut bank area of the park. Anglers traveling up and down the unstable steep bank had contributed to the denuding of the bank and significantly accelerated erosion. The lack of dedicated trails from the uplands camp sites led to the establishment of numerous informal trails causing trampling of upland ground cover and weakening of the top of the bank.

The project installed 630 feet of bioengineered bank stabilization and restoration. In addition, 420 LF of elevated, grated walkway was to channel access and reduce the impact of foot traffic. Finally, three sets of stairs were constructed from the top of the bank to the river bottom to provide protected access for a hip boot fishery.

Proposed, but not funded, in this project were several removable fishing platforms at the waters edge and the upland trail system proposed again here. This trail will provide the missing link in protecting the park from continued pedestrian damage. By providing a dedicated path with traffic controlling railing from the campground and day use accesses to the bank top walkway and river access stairs.

NEED FOR THE PROJECT

A. Statement of Problem

While the 1997 project made great strides in restoring and protecting the near shore habitat at Centennial Park, damage continues in the down stream area. Foot traffic in the area between the elevated walkway and the boat ramp from campers and day use visitors has no dedicated access route from the parking and camping areas to the walkway. This situation has led to a considerable denuding of the uplands near the top of the bank, associated weakening of the bank top itself and tramplin of river bank vegetation in some areas.

B. Rationale/Link to Restoration

An important element in effectively protecting and restoring Centennial Park's habitat involves controlling foot access to the river. This is not only essential at the very top of the bank and at the shore line but also in the upland areas back from the top of the bank. Just as the near shore areas provide valuable habitat components so too does the uplands vegetation. This area serves as the first filter for runoff from the camping and day use areas. It also provides soil stabilization for the uplands reducing erosion and runoff into the near shore area.

The Uplands Trail Project will provide a designated pathway for access to the near shore structures. This path should significantly reduce trampling and vegetation loss in the uplands area. With its railing along the river side of the path it will also serve as a barrier to access to the restored areas along the top and face of the cutbank. Finally, the new path will provide a safer, more functional access route for less ambulatory visitors to enjoy Centennial's recreational opportunities.

C. Location

Centennial Park is located on the left bank of the Kenai River at approximately river mile 20. Located less than ½ mile from the Sterling Highway on Kalifonsky Beach Road it is easily accessible by motorized and non-motorized vehicles as well as by foot from downtown Soldotna's lodging and shopping hub.

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

Because the uplands trail is the final phase in an ongoing project no additional public involvement is anticipated. As with all previous projects local hire will be a focus of the contracting process and it is projected that all materials will come from local commercial sources.

PROJECT DESIGN

A. OBJECTIVES



Project 99____

- 1. Increase protection of completed restoration work in critical areas of Centennial Park.
- 2. Protect and restore uplands vegetation damaged by pedestrian traffic.
- 3. Provide a safe and functional trail for access from parking and camping areas to the river bank access structures.

B. Methods

The upland trails construction will take place in three phases. Initially, the trail will be prepared by grooming and compaction. Grooming will entail removal of protruding roots, stumps and stones however the underlying moss and organic soils will be preserved. After grooming a layer of geotextile fabric will be placed on the compacted soil and a $6'' \times 6''$ edge rail will be installed at grade on each side of the trail and anchored with re-bar stakes driven through the rail members. A 6'' layer of crushed aggregate fill will then be placed between the rails and will be compacted to provide a firm, durable walking surface.

Following the installation of the trail the rail fence will be installed on the river side of the trail. This fence will be constructed of $4'' \ge 6''$ pressure treated wood posts placed 8' on center with two courses of $2'' \ge 6''$ pressure treated wood rails.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

At this time we anticipate there will be no other cooperating agencies outside of the Trustee agency involved in this project nor will any work be contracted to other government agencies.

All contracted work will be awarded to the lowest bidding responsive and responsible general contractor in accordance with local hire and local supplier provisions.

SCHEDULE

A. Measurable Project Tasks for FY 99 (October 1, 1998 - September 30, 1999)

September 30:	Finalize design for project
March 23-27:	Attend 10 th anniversary symposium
April 15:	Award bid and finalize contract
May 25:	Final approval of construction
Sept. 30:	Final project evaluation and modifications as needed
Feb. 1:	Final Report



Project 99____

B. Project Milestones and Endpoints

September 30:	Finalize design and prepare bid documents.
March 15:	Advertise for bids
April 15:	Award bid and finalize contract
May 4:	Begin construction of path
May 11:	Finish path and begin rail construction
May 25:	Final approval of construction.
May25 - Sept 30:	Ongoing in-season evaluation
Sept. 30	Final project evaluation and modifications as needed
Feb. 1:	Final report to Trustees Council

C. Completion Date

Final construction work will be completed on or before May 25. In-season and final evaluation and modification to the project will be complete by Sept. 30th, with the final project completion date including reporting set for February 1.

PUBLICATIONS AND REPORTS

None anticipated.

PROFESSIONAL CONFERENCES

None anticipated.

NORMAL AGENCY MANAGEMENT

The City of Soldotna relies greatly on the recreational and commercial resources provided by the Kenai River for it's economic stability. Thus, we have taken a leadership role in promoting responsible development, habitat restoration and protecting access along the river and it's tributaries. Soldotna was the first municipal government to adopt special zoning regulations to protect the Kenai River from development impacts. We were the first municipal government to work in partnership with the private sector to provide elevated, light penetrating access for sport angling. And, over the past several years Soldotna has continued to strive to protect the river from adverse human impacts while providing recreational opportunities for our residents and guests.

Since the Exxon Valdez incident a great deal of research has been conducted on the Kenai and it's resources. The common thread which links most, if not all, of

the conclusions from this research is that human impacts on the river have a profound effect on the health of the river and the surrounding ecosystems. There have been no requirements mandating municipal land managers to protect the habitat in their holdings. Yet the City of Soldotna has taken this information to heart and has undertaken many projects designed to protect and restore fish habitat in our city parks.

The vast majority of the work accomplished to date has been done with funds from sources other than the Exxon Valdez Trustees Council. Three phases of access protection at Soldotna's Rotary park were completed with volunteer, city, and donated funds. Two phases of work at Centennial Park provided protected access and habitat restoration using city and federal funding. One of the first restoration and protection projects done on the River, the Soldotna Creek Park project was accomplished with city and state funding. A restoration and access project known as the "Fishwalk" was constructed at the Soldotna Visitors Center using non-profit grant money which demonstrates the use of elevated, light penetrating walkways for angler access . Finally, two phases of protection and restoration work have been finished to date at Swiftwater Park using volunteer and city personnel.

Unfortunately, volunteer effort only goes so far, and funding sources are limited. Visitors and residents continue to seek recreational access to the Kenai, and the City of Soldotna feels a responsibility to provide that access through our parks system. We also feel a duty to provide that access in a responsible manner. Without funding by the Exxon Valdez Trustees Council more time and different funding sources will be required to provide an adequate level of restoration and protection for Centennial Parks important uplands area.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

The Centennial Park Uplands Trail Project utilizes similar technology and design as many of its predecessor projects in the city. When completed, the project will integrate with last years down stream work to provide significant habitat improvement as well as excellent recreational access within Swiftwater Park. And because of the design similarities between all of Soldotna's parks projects, the Swiftwater project will integrate nicely into our system wide work.

Coordination of the project will take place on a number of levels. As in the past we anticipate a great deal of coordinated and cooperative effort between the city, contractor, and the states departments of Fish and Game and Natural Resources. Once again we will be sharing our expertise and experiences to develop a well thought out and functional project that will successfully meet our shared goals of habitat restoration, protection, and responsible access development.

PROPOSED PRINCIPAL INVESTIGATOR

Stephen Bonebrake / Dick Bower
City of Soldotna
177 N. Birch St.
Soldotna, AK 99669
(907) 262-9107
(907) 262-1245
dbower@ci.soldotna.ak.us

Prepared 04/14/98

PRINCIPAL INVESTIGATOR

Steve Bonebrake is the City of Soldotna's Public Works Director and city engineer. Mr. Bonebrake has been involved in the planning, design, construction and management of many publicly owned Kenai River habitat restoration and protection projects over the past several years. Projects completed under Mr. Bonebrake's guidance include Soldotna Creek, Centennial Park phases I -III, Rotary Park phases I-III, Swiftwater Park phases I and II, and the Soldotna Fishwalk.

Dick Bower is Soldotna's Building Official. As a licensed general contractor Mr. Bower has been involved in the planning, design, construction and management of over 15 private and public habitat restoration and protection projects. In addition to his contracting work Mr. Bower has developed and presented several classes in habitat restoration and protection and low impact site planning to Kenai River property owners and local contractors. Mr. Bower has been accepted as an instructor in Streambank Protection and Low Impact Site Planning by the Alaska State Home Builders Assn. and is a member of the International Erosion Control Association.

Mr. Bonebrake and Mr. Bower bring fifty years of combined construction experience to the Centennial project. Experience including over 10 years of work specifically in habitat restoration and protection on the Kenai River.

OTHER KEY PERSONNEL

Other key personnel from the City will include Andrew Carmichael, Soldotna's director of Parks and Recreation; Thomas Boedeker, City Manager; Ken Lancaster, Mayor; and the members of the Soldotna City Council, and agency representatives from the Kenai River Center.

LITERATURE CITED

None





October 1, 1998 - September 30, 1999

	Authorized	Proposed						
Budget Category:	FY 1998	FY 1999						
Personnel		\$5.1						
Travel		\$0.9						
Contractual		\$69.2	_					
Commodities		\$0.5						
Equipment		\$0.0		LONG R	ANGE FUNDI	NG REQUIRE	MENTS	
Subtotal	\$0.0	\$75.7		Estimated	Estimated	Estimated		
Indirect		\$2.3		FY 2000	FY 2001	FY 2002		
Project Total	\$0.0	\$78.0		\$0.0	\$0.0	\$0.0		
Full-time Equivalents (FTE)		13.0						
			Dollar amount	ts are shown in	n thousands of	dollars.	5	
Other Resources								
Comments:				_				
Indirect costs were computed us	sing a rate of 3	% of the proje	ect total.					
No NEPA costs are anticipated	on this project.							
Contractural costs include labor	and materials	at State wage	e and hour rate	s.				
All design/engineering has beer	All design/engineering has been performed in conjunction with an earlier project.							



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Personnel Costs:			Months	Monthly		Proposed
Name	Position Description		Budgeted	Costs	Overtime	FY 1999
D. Bower	Building Official		5.0	0.5		2.5
S. Bonebrake	Public Works Director		5.0	0.4		2.0
A. Carmichael	Parks and Rec. Director		3.0	0.2		0.6
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		13.0	1.1	0.0	
		Personnel Total			\$5.1	
Travel Costs:		Ticket	Round	Total	Daily	Proposed
Description		Price	Trips	Days	Per Diem	FY 1999
10th Annual Restoration W	orkshop	0.1	1	4	0.2	0.9
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
					Traval Total	0.0
					Travel Total	
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FY 99 EXXON VALDEZ TRUE COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

Contractual Costs:		Proposed
Description		FY 1999
Construction of uplands t	rail and railings	68.9
Survey and Geotech		0.3
	Contractual Total	\$69.2
Commodities Costs:		Proposed
Description		FY 1999
Signs, posts, fasteners		0.5
		\$0.5
And the second second		
17/ 34 54 94 State		THEN WARD
TEST GOL	A restanting a series of the second	antanian 2
I T BE	Tradition Wilds Suddatabut a. Conditionale Frait, "Chalenders Tural Paralities of the	A SHAT ROAD SHATTERED
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FY 99 EXXON VALDEZ TRU E COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

Description of Units Price FY 199 none 0.
none 0.
none 0.1
0.1
0.1
0.0
0.0
0.0
0.0
0.0
0.1
0.1
0.1
0.
Those purchases associated with replacement equipment should be indicated by placement of an R. New Equipment Total \$0.0
Existing Equipment Usage: Number
Description of Units
none
Nerme, Dick J Bowei, City st Sculentine)

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4/14/98, 4 of 4



Page 4 of 4





Subsistence Processing Building/Biosampling Facility

Project Number:	99497	
Restoration Category:	Subsistence	
Proposer:	Chenega Bay IRA Council	
Lead Trustee Agency:	ADFG	RECEIVED
Alaska SeaLife Center:	No	APR 1 5 1998
Duration:	1st year, 1 year project	EXXON VALDEZ OIL SPILL
Cost FY 98:	\$60,000	IRUSTEE COUNCIL
Geographic Area:	Chenega Bay	

ABSTRACT

This project would fund the construction of a Subsistence Processing and Biosampling Facility. This building would provide shelter for local subsistence harvesters to process game meat. Additionally, this building would be used to assist the local participants in the Alaska Native Harbor Seal Commission's biosampling program (98244). Biosampling could take place within the building, protecting the biosamplers from the harsh elements of the Prince William Sound.

Additionally, the building could be used to educate the youth of Chenega Bay on traditional methods of harvesting. The oil spill has created a generation without the knowledge of how to harvest subsistence resources. Scarcity, fear of contamination, and other factors have limited the ability for harvesters to take youth out. With the construction of this building, local harvesters would have the ability to hold classes within the processing center and other similar activities.

INTRODUCTION

The Exxon Valdez oil spill created a shortage of traditional species of which Chenega Bay has traditionally harvested. Because of this, the younger generation has experienced a lapse in the passing of knowledge. Scarcity, fear of contamination, and other factors are the main reasons. The construction of the Subsistence Building would allow local harvesters to teach the younger generation traditional methods.

The building would assist in the effort of restoration of injured species as well. In cooperation with the Alaska Native Harbor Seal Commission biosampling program, the village of Chenega Bay would have a facility to do necropsies. The weather in Prince William Sound can be quite fierce at times, making such necropsies impossible. Also, this would allow harvesters a facility to process their game in sheltered conditions, away from the elements.



NEED FOR PROJECT

A. Statement of Problems

This project addresses three problems. First, it addresses the lapse of passing on subsistence knowledge to the youth of Chenega Bay because of the oil spill. Secondly, addresses the problem local seal hunters have of adequate facilities to perform necropsies and biosamples. Finally, it addresses local concern of a sheltered place to process harvests when weather is not cooperating.

B. Rationale/Link to Restoration

The oil spill has created a lapse of subsistence knowledge to the youth of Chenega Bay. This would address that problem. Additionally, the performance of necropsies and biosamples in the facility would assist in the restoration of harbor seals.

C. Location Chenega Bay

PROJECT DESIGN

A. Objectives

1) To reverse the trend of this generations lack of traditional subsistence knowledge by building a facility to hold subsistence classes.

2) To assist scientists working on harbor seals by having a facility to perform biosamples and necropsies.

3) To make the processing of subsistence resources easier, as they were injured in the Exxon Valdez oil spill.

B. Methods

The Chenega Bay Village Council would build the subsistence center by obtaining the materials and a contractor to construct it. The Alaska Department of Fish and Game would assist in this process. The building would be maintained by the Chenega Bay Village Council. Classes for teaching youth subsistence harvesting would be performed by the village council as well.

Item	Units	Unit \$	Total
Building materials	1	\$60,000	\$60,000
Total	1	\$60,000	\$60,000

C. Cooperating Agencies Alaska Department of Fish and Game

SCHEDULE

A. Measurable Project Tasks for FY 99

October 1 - November 30 December 1 - January 31 February 1 - March 1 March 1 - April 1 May 1 - September 1 September 31 Select design of building Select contractor Order material Ship material to Chenega Bay Complete construction of building Final report to Trustee Council

B. Project Milestones

See above.

C. Completion Date

September 1, 1999

PUBLICATIONS AND REPORTS, PROFESSIONAL CONFERENCES

Final report.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

Work in conjunction with the Alaska Native Harbor Seal Commission to assist in restoration of harbor seals.

PROPOSED PRINCIPAL INVESTIGATOR

John Christiensen, Sr., Administrator Chenega Bay IRA Council P.O. Box 8079 Chenega Bay, AK 99574



	Authorized	Proposed						
Budget Category:	FY 1997	FY 1998						
Persennel		0.05						
Trevel								
		0.0¢						
Commodities		\$0.0						
Commodities		0.0					NTC	
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Subtotal Concerni Administration	\$0.0	\$60.0	4		Estimated	Estimated	Estimated	,
General Administration	<u> </u>	<u></u>		FT 1999	FT 2000	FT 2001	FT 2002	
Project Total	\$0.0	\$04.2		\$0.0	\$0.0	\$0.0	\$0.0	
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Comments:								
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	Project Num	har					l i	FORM 3A
1000	Project Num	ber:	_					TRUSTEE
1999	Project Title:	Subsistend	ce Processing	g Building/Bio	sampling Fac	cility		AGENCY
	Name: ADE	С					_	

Prepared: 4-14-98 1 of 8



1998 EXXON VALDEZ TRUST COUNCIL PROJECT BUDGET

October 1, 1997 - September 30, 1998

Personnel Costs:			GS/Range/	Months	Monthly		Proposed
Name		Position Description	Step	Budgeted	Costs	Overtime	FY 1998
			т				0.0
							0.0
							0.0
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							0.0
							. 0.0
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						:	0.0
							0.0
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		Subtotal		0.0	0.0	0.0	
					۲ ۱	ersonnel Total	\$0.0
Travel Costs:			Ticket	Round	Total	Daily	Proposed
Description		· · · · · · · · · · · · · · · · · · ·	Price	Trips	Days	Per Diem	FY 1998
	,						0.0
							0.0
							0.0
							0.0
							0.0
							0.0
							0.0
							0.0
							0.0
							0.0
							0.0
				I		Travel Total	\$0.0
	Γ						CODM 2P

1999		Project Number: Project Title: Subsistence Processing Building/Biosampling Facility Name: ADEC	FORM 3B Personnel & Travel DETAIL
Prepared: 4-14-98	2 of 8		4/15/98

4/15/98



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1998 EXXON VALDEZ TRUST COUNCIL PROJECT BUDGET

October 1, 1997 - September 30, 1998

Contractual Costs:		- da	Proposed
Description		,	FY 1998
Contract with Chenega Bay IRA	Council	-Norono, and a second	60.0
•	· ·		
When a non-trustee organization	n is used, the form 4A is required.	Contractual To	tal \$60.0
Commodities Costs:			Proposed
Description			FY 1998
		·	
		Commodities Tot	al \$0.0
1999	Project Number: Project Title: Subsistence Processing Building/Biosampling Facility Name: ADEC		FORM 3B Contractual & Commodities DETAIL
Prepared: 4-14-98	·		



New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FY 1998
	, í		0.0
			0.0
			0.0
			0.0
	·		0.0
			0.0
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			0.0
			0.0
]	0.0
Those purchases associated with replacement equipment should be indicated by placement	of an R. New E	quipment Total	\$0.0
Existing Equipment Usage:		Number	Inventory
Description		of Units	Agency
			, ,
1999 Project Number: Project Title: Subsistence Processing Building/ Name: ADEC	Biosampling Facility	E	FORM 3B Equipment DETAIL
4 of 8			4/15/98



1998 EXXON VALDEZ TRU

COUNCIL PROJECT BUDGET October 1, 1997 September 30, 1998

	Authorized	Proposed						
Budget Category:	FY 1997	FY 1998						
Personnel		\$0.0						
Travel		\$0.0						
Contractual		\$60.0						
Commodities		\$0.0						
Equipment		\$0.0		LONG	RANGE FUNDI	NG REQUIREME	ENTS	
Subtotal	\$0.0	\$60.0		Estimated	Estimated	Estimated	Estimated	
Indirect		\$0.0		FY 1999	FY 2000	FY 2001	FY 2002	
Project Total	\$0.0	\$60.0		\$0.0	\$0.0	\$0.0	\$0.0	1
Full-time Equivalents (FTE)		0.0						
			Dollar amoun	ts are shown in	thousands of c	Iollars.		
Other Resources								
Comments:			·······					
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	Project Nur	ber						FORM 4A
1000			D	- D . 11-11 (D)		- 11.4.		
1999	Project Title	: Subsisten	ce Processin	g Building/Bid	osampling Fa	cility		von-Trustee

Project Title: Subsistence Processing Building/Biosampling Facility Name: Chenega Bay IRA Council .

Non-Trustee SUMMARY

Prepared: 4-14-98

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4/15/98





Pers	onnel Costs:	· · · · · · · · · · · · · · · · · · ·		Months	Monthly		Proposed
	Name	Position Description		Budgeted	Costs	Overtime	FY 1998
						0.0	0.0
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		· · · ·					0.0
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Irav	el Costs:		licket	Kound	Iotal	Daily Dea Diase	Proposed
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<u></u>	<u></u>						
							FORM 4B
		Project Number:				1	Personnel
	1999	Project Title: Subsistence Processing	g Buildina/Bio	osampling Fa	cility		
	-	Name: Chenega Bay IRA Council	•		.,		& I ravel
							DETAIL
Prep	ared: 4-14-98 6 of 8						4/15/98



October 1, 1997 - September 30, 1998

Contractual Costs:			Proposed
			FY 1998
Chenega Bay IRA Council will co	ontract with the construction company		60.0
			.'
		:	
		:	
	·		
,			
		Contractual Tota	\$60.0
Commodities Costs:			Proposed
Description			FY 1998
			0.0
	·		
			40.0
		Jommodities Lotal	\$0.0
·J		I	
	PProject Number		
1999	Project Titley, Subsistence Processing Building/Discompling Escility	Co	ontractual &
1000			ommodities
	Name: Chenega Bay IRA Council		DETAIL
Prepared: 4-14-98			·····
7 of 8			4/15/98



New	Equipment Purchases:		Number	Unit	Proposed
Desc	ription		of Units	Price	FY 1998
		·			
					0.0
					0.0
					, 0.0
					0.0
					0.0
					0.0
				:	0.0
					0.0
					0.0
					0.0
Thos	e purchases associated with	replacement equipment should be indicated by placement of an R.	New E	uipment Total	\$0.0
Exis	ting Equipment Usage:			Number	
Desc	ription			of Units	
	1999	Project Number: Project Title: Subsistence Processing Building/Biosampling F Name: Chenega Bay IRA Council	acility	E	FORM 4B Equipment DETAIL
Prep	ared: 4-14-73 8 of 8	L			4/15/98

99502

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Project Title:	Subistence Meeting Hall	
Project Number:	99502	
Restoration Catagory:	General Restoration	
Proposer:	Native Village of Eyak	
Lead Trustee Agency:		
Cooperating Agencies:		
Duration:	One Year	
Cost for FY 99:	\$400,000	E
Geographic Area:	Oil Spill Area	

Injured Resource/Service: Subsistence



ABSTRACT

This project would add meeting space to the Native Village of Eyak's new building, which will be constructed during FY99. This would allow subsistence meeting, both local and regional, to be held at Eyak/Cordova.

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Project Title:

Restoration of Orca Inlet

Project Number:

99503

Restoration Catagory:

Proposer:

Native Village of Eyak

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EXXON VALDEZ OIL SPILL TRUSTEE COUNCII

General Restoration

Lead Trustee Agency:

Cooperating Agencies:

Duration: Cost for FY 99: Cost for FY 00 Cost for FY 01 Cost for FY 02 Cost for FY 03 Five Year \$250,000 \$1,000,000 \$1,000,000 \$1,000,000 \$500,000



Geographic Area:

Oil Spill Effected Area

Injured Resource/Service: Subsistence

ABSTRACT

When many of the NVE Elders were young, Orca Bay was a rich eco system. There were a million pounds of dungeness crab harvested annually, within sight of Eyak/Cordova. Eyak/Cordova was known as the "Razor Clam Capitol of the World". There were many other species of clams within walking distance of the local harbor. Many residents caught halibut in the bay.

However, by 1998, things have changed in Orca Inlet. There are a few sea otters in the bay, but most other sea life has died.

The 1964 Earthquake helped kill the bay. The dumping of millions of pounds of ground up fish waste has smothered the bay.

Research needs to be done and then action taken to restore Orca Bay to what is was when we were children. Bays, lakes and rivers are being restored around the United States. It is time that Orca Bay is restored.

99507

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Project Title: Nuchek Subsistence Camp 99507 **Project Number:** General Restoration **Restoration Catagory:** Native Village of Eyak Proposer: Lead Trustee Agency: **Cooperating Agencies:** RECEIVED **Five Year** Duration: APR 1 5 1998 Cost for FY 99: \$250,000 EXXON VALDEZ OIL SPILL Cost for FY 00 \$250,000 TRUSTEE COUNCIL Cost for FY 01 \$250,000 Cost for FY 02 \$250.000 Cost for FY 03 \$250,000

Geographic Area:

Oil Spill Effected Area

Injured Resource/Service: Subsistence

ABSTRACT

With the many battles over subsistence raging, there needs to be a way and place to pass the traditional subsistence way of life on to future generations. A perfect location would be Nuckek, located by Hinchinbrook Entrance on Hinchinbrook Island. This was the ancient home of many of the Aleuts in Alaska.

Chugach Alaska Corporation has operated Spirit Camps at this location. These have gone over very well. These facilities could be used for "Subsistence Camps", where the subsistence way of life could be passed on to the younger generations.

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Copper River Salmon Run Data Improvement Project

Project Number: Restoration Category: Proposer: Lead Trustee Agency: Cooperating Agencies: Alaska SeaLife Center: Duration: Cost FY 99: Cost FY 00: Cost FY 01: Cost FY 02: Cost FY 03: Geographic Area: Injured Resource/Service:

99508 Enhance/Replace Subsistence Resources Native Village of Eyak DOI ADFG, NPS, USFS No 1st year, 5 year project \$ 436.4 \$ 1,041.2 \$ 508.0 \$ 533.5 \$ 560.2 Copper River Watershed Subsistence



Abstract:

Project will protect and enhance the Salmon Runs on the Copper to replace the lost subsistence resources on Prince William Sound. The project will install modern automated run monitoring and data collection equipment on the Copper River tributaries and will provide input into the Fisheries Management Plan using data collected over a five year period. The Copper River is the remaining strong Subsistence resource that people have available since the spill took away much of the other subsistence areas. The Copper river fishery is at risk because of a shift in resource use from subsistence and commercial fishing to urban sport and personal use fishing. Sufficient data is not available from the Miles Lake Sonar at the mouth of the river to monitor new pressures on the fishery in the upriver tributaries.

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Project 99___





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Marine Pollution Reduction for Nanwalek and Port Graham

99514 Project Number: General Restoration **Restoration Category**: Port Graham Village Council Proposer: Lead Trustee Agency: ADEC RECEIVE **Cooperating Agencies:** None APR 1 5 1998 Alaska SeaLife Center: No EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL New or Continued: New Duration: 1st year of 1 year project Cost FY 99: \$260,400 Geographic Area: Lower Cook Inlet Injured Resource/Service: Marine Pollution

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ABSTRACT

This project will help prevent marine pollution that is generated from land-based sources within the Port Graham/Nanwalek communities. Following the model of the Sound Waste Management Plan and the Kodiak Island Waste Management Plan, the Port Graham/Nanwalek implementation phase of Environmental Operation Stations would be a logical step within these communities. The construction would accomplish two main objectives: 1) to improve the overall management of solid and oily waste; and 2) creation of a comprehensive used oil management system in the communities.

INTRODUCTION

A wide range of waste streams are generated from the communities of Port Graham and Nanwalek. This includes oil generated from vehicles and vessels, hazardous wastes generated by households, and solid wastes. This pollution constitutes a major and chronic source of marine pollution.

Port Graham and Nanwalek currently face serious problems with managing these wastes, including inadequate facilities to properly manage used oil, landfills are located in areas of potential groundwater and surface water contamination, and hazardous household wastes disposed of in community landfills where they may leach into surrounding land and water. As a result of these problems, pollution from these sources is entering Kachemak Bay and the Gulf of Alaska on an on-going basis.

The oil spill region has seen an excellent effort by the Trustee Council to reduce marine pollution, especially in the Prince William Sound and Kodiak Island. The lower Cook Inlet region has experienced chronic marine pollution problems as well, threatening recovering species injured by the Exxon Valdez oil spill. Based on the extensive research within Prince William Sound, the communities of Tatitlek and Chenega Bay came up with three recommendations for reducing the effects to the environment.

- create a comprehensive used oil management system in their community
- institute community-sponsored drop-off recycling programs
- construct EnVironmental Operation Stations in their community

In an effort to use the model produced by the Sound Waste Management Plan and also decrease planning costs, the Port Graham Village Council proposes that these three objectives be implemented for the region.

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This proposal requests funding from the Trustees to provide a one-time capital cost needed to implement two of the above objectives; 1) construction of EVOS Stations 2) establishment of a comprehensive used oil management system. This will benefit Port Graham and Nanwalek. The communities will fund all ongoing operation and maintenance costs.

NEED FOR THE PROJECT

A. Statement of Problem

This project addresses pollution entering the Kachemak Bay from a wide variety of sources, including households, businesses, boats, and automobiles. These sources generate used oil, oily bilge water, hazardous wastes, and solid wastes on an on-going basis. These communities are struggling to contain the pollution problem, but do not have adequate equipment, facilities, and training necessary to ensure prevention of spills, illegal dumping/discharges of solid and oily wastes, and of on-going contamination of ground and surface water from current disposal practices. As a result, pollution is entering the waters surround the villages.

Marine pollution in this region affects the following injured resources: intertidal and subtidal organisms, harlequin ducks, black oystercatchers, sea otters, harbor seals, and other sea birds, shore birds, and marine mammals. Subsistence services, as well as recreation are affected additionally.

B. Rationale/Link to Restoration

The wastes entering the waters generated from the communities on an on-going basis are affecting fish, wildlife, and human uses injured by the oil spill. Any decrease in local pollution would have the effect of decreasing the stress on injured fish and wildlife that rely on clean water. The fish and wildlife likely to benefit the most are those that feed in the intertidal or near-shore waters in the vicinity of community waterfronts. Subsistence will be the major beneficiary, along with recreational uses.

Chronic pollution from community sources is believed to have significant adverse effects on the marine environment:

- refined petroleum products tend to be even more toxic to fish and wildlife than crude oil
- the cumulative effects of chronic marine pollution can substantially increase the stress on fish and wildlife
- with regard to seabirds, chronic marine pollution is believed to be at least as important as large-scale spills

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C. Location

This project will take place in Port Graham and Nanwalek.

COMMUNITY INVOLVEMENT

Port Graham and Nanwalek fully support this project and envision the whole community taking full advantage of the facilities. The tribal councils of each village will supervise their respective implementation phases and maintain all future expenditures for operations.

PROJECT DESIGN

A. Objectives

- 1. To decrease pollution that is entering Kachemak Bay from solid waste sites, mishandling of wastes, and illegal dumping of solid, hazardous, and oily wastes.
- 2. To decrease the flow of used oil into Kachemak Bay from vessels, boats, vehicles, and other community-based sources due to lack of sufficient management equipment.

B. Methods

Construction of EnVironmental Operation Stations

An EVOS Station is a building which will provide the physical, sheltered space necessary to safely collect and store used oil, household hazardous wastes, and recyclable solid waste. An EVOS Station will help prevent spill, leaks, and illegal dumping of these wastes by providing:

- a collection point for the wastes within each community
- sufficient capacity to store the wastes prior to recycling or disposal; and
- safety features for proper management of the wastes such as bermed areas and fire suppression systems as needed for each waste type

Each community currently lacks collection facilities, storage capacity, and safety equipment. Used oil collection takes place in rusting drums or tanks, and only sporadically. The EVOS Stations will be 9' X 24' prefabricated steel buildings. The equipment for the buildings will include a 500 gallon storage tank, oily water separator, oil transfer pump, training and manuals, 125,000 BTU heater, 75 gallon portable bilge pump and tank, oil filter crusher, and oily material burner.

Project Budget for Port Graham and Nanwalek

Equipment	Units	\$ per unit	Subtotal	Total
Prefab. building	2	\$24,000	\$48,000	\$48,000
Foundation preparation	2	\$12,000	\$24,000	\$12,000
Other building costs	2	\$30,000	\$60,000	\$30,000
500 gallon storage tank	2	\$1,000	\$2,000	\$2,000
Oily water separator	2	\$6,000	\$12,000	\$12,000
Oil transfer pump	2	\$4,000	\$4,000	\$8,000
Misc. containers, etc.	2	\$2,500	\$5,000	\$5,000
O&M manual and training	2	\$5,000	\$10,000	\$10,000
Contingency	2	\$3,700	\$7,400	\$7,400
125,000 BTU heater	2	\$8,000	\$16,000	\$16,000
75 Gallon portable bilge pump w/tank	2	\$8,000	\$16,000	\$16,000
Oil filter crusher	2	\$2,000	\$4,000	\$4,000
Oily material burner	2	\$4,000	\$8,000	\$8,000
Total equipment cost	26	\$110,200	\$220,400	\$220,400
Contractor costs	2	\$20,000	\$40,000	\$40,000
TOTAL	28	\$130,200	\$260,400	\$260,400
In-kind contribution of village councils for management and labor	2	0	0	0

Project implementation and construction will take place with the Port Graham Village Council and Nanwalek IRA Council, with assistance from the Alaska Department of Environmental Conservation. A contractor will be hired to construct and install the building in each community.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

The Alaska Department of Environmental Conservation will work closely with the communities on the project

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SCHEDULE

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A. Measurable Project Tasks for FY 99

October 1 - October 30	Select designer for EVOS Stations
November 1 - December 31	Complete design of EVOS Stations
January 1 to February 15	Develop bid documents for construction and acquisition of
	used oil management equipment
February 15 - March 31	Solicit bids
April 1 - April 30	Bid opening and contract award
May 1 - May 30	Start of contract
June 1 - September 30	Construction of EVOS Stations and purchase of equipment
October 1	Project report to Trustee Council

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B. Project Milestones and Endpoints

December 31	Complete EVOS Station design
June 30	Begin construction on EVOS Stations and purchase of used
	oil equipment
September 30	Complete construction, end of project

C. Completion Date

September 30, 1999

PUBLICATIONS AND REPORTS, PROFESSIONAL CONFERENCES

None.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

None.

PROPOSED PRINCIPAL INVESTIGATOR

Elenore McMullen, President Port Graham Village Council P.O. Box 5572 Port Graham, Alaska 99603 907.284.2227 907.284.2222 fax



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Rudget Category:			EV 1998						
Budget Category.		111337	11 1330						
Personnel			\$0.0						
Travel			\$0.0						
Contractual			\$260.4						
Commodities			\$0.0						
Fauipment			\$0.0		LONG	ANGE FUNDIN	IG REQUIREME	NTS	
Subtotal		\$0.0	\$260.4		Estimated	Estimated	Estimated	Estimated	
			\$17.7	1	FY 1999	FY 2000	EY 2001	FY 2002	
Project Total		\$0.0	\$278.1		\$0.0	\$0.0	\$0.0	\$0.0	· · · · · · · · · · · · · · · · · · ·
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1999			Nanwalek/	FUIL Granan	i waine rollu	nion reducti	011		AGENCY
		Name: ADE	C					1	SUMMARY
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1998 EXXON VALDEZ TRUST DUNCIL PROJECT BUDGET October 1, 1997 - September 30, 1998

Personnel Costs:		/ Months	Monthly		Proposed
Name Position Description	Ste	Budgeted	Costs	Overtime	FY 1998
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
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	Cubactel	0.0	0.0		0.0
	Subtotal	0.0	0.0	U.U Personnel Total	ê0.0
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Description	Ficke		Dava	Dally Per Diem	Proposed
Description			Days	rei Diem	FT 1996
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					0.0
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	<u>l</u>				0.0
				Travel Total	\$0.0

1999		Project Number: Project Title: Nanwalek/Port Graham Marine Pollution Reduction	FORM 3 Personne & Trave	Bel
		Name: ADEC	DETAIL	-
repared: 4-14-98	2 of 8		4/15/98	8



	· · · · · · · · · · · · · · · · · · ·		Proposed
Description			FT 1998
			200.1
When a non-trustee organi	zation is used, the form 4A is required.	Contractual Total	\$260.4
Commodities Costs:			Proposed
Description			<u>FY 1998</u>
		·	
		Commodities Total	\$0.0
1999 December 4 14 08	Project Number: Project Title: Nanwalek/Port Graham Marine Pollution Reduction Name: ADEC	FC Con Cor [ORM 3B Itractual & Inmodities DETAIL
rrepared: 4-14-98	3 of 8	<u></u>]	4/15/ 9 8



New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FY 1998
			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
Those purchases associated with replacement equipment should be indicated by placement of an R.	New Ed	uipment Total	\$0.0
Existing Equipment Usage:		Number	Inventory
Description		of Units	Agency
1999 Project Number: Project Title: Nanwalek/Port Graham Marine Pollution Reductio Name: ADEC	n		FORM 3B Equipment DETAIL



	Authorized	Proposed	
Budget Category:	FY 1997	FY 1998	
Personnel		\$0.0	
Travel		\$0.0	
Contractual		\$40.0	
Commodities		\$0.0	
Equipment		\$220.4	LONG RANGE FUNDING REQUIREMENTS
Subtotal	\$0.0	\$260.4	Estimated Estimated Estimated
Indirect		\$0.0	FY 1999 FY 2000 FY 2001 FY 2002
Project Total	\$0.0	\$260.4	\$0.0 \$0.0 \$0.0 \$0.0
Full-time Equivalents (FTE)		0.0	
			Dollar amounts are shown in thousands of dollars.
Other Resources		-	
Comments:			

1999		Project Number: Project Title: Nanwalek/Port Graham Marine Pollution Reduction Name: Port Graham Village Council	FORM 4A Non-Trustee SUMMARY
Prepared: 4-14-98	5 of 8		4/15/98



Pers	onnel Costs:				Months	Monthly		Proposed
	Name		Position Description		Budgeted	Costs	Overtime	FY 1998
							0.0	0.0
								0.0
								0.0
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				Tislast			ersonnei Totai	\$0.0
Irav	el Costs:			l icket	Round		Daily	Proposed
	Description	_ <u></u>		Price		Days	Per Diem	FY 1998
	1					ľ		
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	1							
				I			Travel Total	\$0.0
			Project Number:					FORM 4B







October 1, 1997 - September 30, 1998

Contractual Costs:				Proposed
				FY 1998
Port Granam Village Counci				40.0
		Contr	ractual Total	\$40.0
Commodities Costs:				Proposed
Description				FY 1998
		Commo	dities Total	\$0.0
1999	Project Number: Project Title: Nanwalek/Port Graham Marine Pollution Reduction Name: Port Graham Village Council		F Cor Co	ORM 4B htractual & mmodities
Prepared: 4-14-98				DETAIL

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New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FY 1998
EVOS Station equipment	1	220.4	220.4
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
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			0.0
These purchases associated with replacement equipment should be indicated by placement of an P	Now E	uinmant Tatal	0.0
Entry a contract of an R.	INEW E		₹220.4
Existing Equipment Usage:			
			S. 56
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Broject Number:			FORM 4B
1000		l F	auipment
Project Litle: Nanwalek/Port Graham Marine Pollution Reduction	on		
Name: Port Graham Village Council			
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Prepared: 4-14-73 8 of 8	8		4/15/98

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Lower Kenai Peninsula Regional Chronic Marine Oil Pollution Project

Project Number:	99515	
Restoration Category:	General Restoration	
Proposer:	(TLI Systems Inc.)/To Be I	Determined
Lead Trustee Agency: Cooperating Agencies:		
Alaska SeaLife Center:	No	
Duration:	1 st year, 2 year project	RECEIVED
Cost FY 99:	\$187.8	APR 1 5 1998
Cost FY 00:	\$349.3	EXXON VALDEZ OIL SPILL
Cost FY 01:	0	TRUSTEE COUNCIL
Cost FY 02:	0	
Geographic Area:	Lower Kenai Peninsula	
Injured Resource/Service:	Intertidal communities, pas tourism, other injured resou of Lower Kenai Peninsula.	sive uses, recreation and arces and services in focus areas

ABSTRACT

The project will initiate a 2 year community pilot planning and implementation project in the Lower Kenai Peninsula to reduce, control, and prevent chronic marine oil pollution such as discharges of oily bilge water or pollution from other oil uses discharging into the coastal areas. Focus areas include Seward, and the villages of Port Graham, Nanwalek, and Seldovia, with participation by Homer and Kenai. Control options include collection facilities including a collection boat, separators, filters, and oil burners. The purpose is to ensure that marine areas of the lower Kenai affected by the oil spill are not further weakened by continuing oil contamination, and to improve and protect the marine environment of the Alaska SeaLife Center.

INTRODUCTION

The purpose of this is to initiate a pilot regional effort in the Lower Kenai Peninsula to reduce, control, and prevent chronic marine oil pollution. The effort supports the goal of the Exxon Valdez Oil Spill Trustee Council of restoring the resources and services injured by the 1989 Exxon Valdez oil spill by developing and strengthening focused programs and facilities to ensure that marine areas of the lower Kenai affected by the oil spill are not further weakened by continuing oil contamination. Sources of such contamination include discharges of oily bilge water, and engine oil changes on boats or oil uses near and/or discharging into the coastal areas.

Prevention of pollution from marine and coastal uses of antifreeze has also been identified as a need by some of the localities. While Trustee Council funding is not requested for this activity, it is proposed that the antifreeze polution control activities accompany the marine oil pollution prevention program. The Alaska Department of Environmental Conservation may be able to assist with staff for this activity.

The Seward portion of this regional program will also assist in supporting the substantial investment that the Trustee Council has made in the Alaska Sealife Center by reducing and controlling pollution in the marine environment and Seward harbor adjacent to the Center.

NEED FOR THE PROJECT

A. Statement of Problem

The project is designed to address restoration of the intertidal communities in particular, although a successful program will also improve passive uses, recreation and tourism, and other injured resources in the focus areas of the Lower Kenai Peninsula.

Activities on the water and shoreline of the marine areas affected by the Exxon Valdez Oil spill result in significant environmental impacts, such as oil spills and chronic discharges, and discharges of other polluting substances such as antifreeze. Such impacts result in chronic marine stress to areas already impacted by the oil spill. The anticipated growth of boating and related marine activities will only further impact these areas.

Each locality in the Lower Kenai has different needs, which will be examined during this planning and pilot implementation effort. The Kenai Borough has a used oil collection system in effect which, in addition to local facilities, provides some collection facilities. This effort will focus specifically on oil and antifreeze in the marine environment. In the Kodiak Island Trustee Council-assisted waste planning effort, oil was listed by participants as the first priority after discussion and training took place. (Initially, scrap metal was listed as the top priority).

In Seward, for example, the Harbormaster indicated that there are barrels for oil collection on land but that marine oil has to be collected from engine oil changes on the boats and oily bilge water has to be pumped and then transported in containers to the collection barrels. Because of the potential for a spill or disposal into the water, we will examine the possibility of collection by a boat with pumping facilities and a holding tank, which could directly service the marine fleet. The convenience to the marine fleet of such a system would reduce the incentive to discharge waste oil or oily bilge water directly into the water. The Seward fleet is quite substantial - about 700-800 boats during the summer and 400-500 during the winter. The Harbormaster indicated that the present program is inadequate for the number of boats.

Homer has the largest single basin harbor in the state, a 50 acre boat basin, according to their Harbormaster. Their experience may be useful to other areas in the Lower Kenny. Their program includes bilge sampling and their waste oil is burned for fuel in their shop and public restroom. They spend about \$60,000 a year on the waste oil disposal program.

In the villages, there is some interest in waste oil burners, and in collection and/or recycling stations. Kenny is impacted by fleet activity associated with the seafood processing plants.

B. Rationale/Link to Restoration

This project is a general restoration project. The work should be done and will help recovery because chronic and increasing marine pollution, particularly oil-related pollution from oily bilge water, spills from activities such as marine engine oil changes, and discharges into the marine environment from land-based activities will further stress resources and reduce services injured by the spill.

As a result of the planning activities, training, and facility and equipment installation, chronic marine oil pollution should be reduced or prevented. This is particularly important as boating activity is expected to increase in the Lower Kenai Peninsula in the future.

C. Location

The project will be undertaken in the Lower Kenai Peninsula, specifically in the Seward area and the Cook Inlet. Localities in the Cook Inlet include the villages of Port Graham, Seldovia, and Nanwalek, as well as Kenai and Homer.

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

Initial contacts and discussion have already been made with Seward, Homer, Kenai, the villages of Seldovia and Port Graham, and the Kenai Borough Offices, as well as several other organizations such as a large tour boat operator in one of the areas.

Hugh Short was contacted and provided the names of community facilitators as local contacts in Port Graham, Seldovia, and Nanwalek. The community facilitator in Seward will also be contacted.

Proposed initial participants in the planning process include the following individuals. Those with an * after their name have already expressed an interest in the project.

SEWARD

City Manager/Mayor	Tom Touges, Large Tourboat
James B. Beckham, Harbormaster*	David Eagle, Property Mgr. Alaska
Edgar Blatchford, Community Facilitator	Darryl Schaeffermeyer, Dir., Alaska
Doug Lechner, Op. Mgr., Shoreside Petroleum	Center
HOMER	
Denny Erlandson, Port Director Director* Bob Shavelson, Cook Inlet Keepers*	Eileen Bechtel, City Planning
<u>KENAI</u>	
Keith Kornelis, Public Works Manager, Harbor*	Susan Saupe, RCAC

PORT GRAHAM

Walter Meganach, Council Facilitator*

NANWALEK

Nancy Yeaton, Natural Resources Specialist*

SELDOVIA

Lillian Elvsaas, Council Facilitator*

KENAI PENINSULA BOROUGH OFFICES, SOLDATNA

Lisa Parker, Planning Director*

ALASKA STATE DEPT. OF ENVIRONMENTAL CONSERVATION

Marianne See, Director of Statewide Public Service*

PROJECT DESIGN

A. Objectives

The project's restoration objectives are to work with each of the participating localities in the Lower Kenai Peninsula during FY 1999 to develop a plan appropriate to each locality to reduce and prevent chronic marine oil pollution, and to implement the plan during FY 2000.

B. Methods

As indicated in the following section on the project schedule, a one year regional planning process and second year implementation period are proposed. The first year process will include three regional meetings. The first meeting will include discussion of the issues in each participating community by their representatives and presentation of technical alternatives by the consultants. The second meeting will include presentation of community plans and development of a budget for capital equipment and facility costs. The third meeting will focus on implementation of the plans. Expert consultant assistance will be available prior to each meeting. The second year is intended for implementation, with a program evaluation at the end of the year.

We propose using harbor water and intertidal sediment samples for oil contamination and Coast Guard records of spills to establish a baseline level for FY 99, and during the evaluation again at the end of FY 00 after the planning and training process is completed, and equipment is installed. Lab analysis costs for this activity will have to be established after additional research is done on available data. For example, the Cook Inlet Keepers are intending to initiate hydrocarbon testing of water and perhaps sediment in the Cook Inlet area this summer. The Kenai Coast Guard office also indicated that RCAC (Cook Inlet Regional Citizens Advisory Council) also does some water testing.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

The Trustee Agency that has been contacted in connection with participation in the oil

pollution prevention planning process is the Alaska Department of Environmental Conservation. However, a lead government agency still needs to be selected. Seward was the original focus of the project. Staff at the Trustee Council offices asked whether there might be regional interest in the project. Discussions with other governments and organizations in the Lower Kenai indicate that there is broader interest in the project. After addressing the issue of an expanded project and potential regional interest, there was not sufficient time before the April 15, 1998 application date to develop a proposal through a government entity. Therefore, identification of a lead agency still needs to be resolved.

Components proposed to be contracted to the private sector include the overall facilitation and coordination of the planning process, including the proposed three regional meetings during FY 99, provision of information on technical alternatives, and cost effectiveness of alternatives, training, and assistance with plan development and implementation.

SCHEDULE

a. Measurable Project Tasks for FY 99 (October 1, 1998 - September 30, 1999)

October FY 99: and	Collect Coast Guard spill data and collect baseline water
	Sediment samples. Contact potential participants and schedule the project initiation, plan presentation, and final meetings and locations.
November:	Meet with participants to assist in preparation for the first
meeting	
January: Echnicary March	A griet next inight with also are provided and Tructor
reduary-march:	Council Capital Costs application for EV 00
March 23-27	Attend 10 th Anniversary Symposium
April:	Hold second regional meeting to present and discuss
1	marine oil pollution control plans and budgets.
May-June:	Assist participants with preparations for meeting on
r 1	implementation of plans.
July:	Hold third regional meeting to discuss implementation of plans.
October FY 00:	Begin installation of facilities and equipment.
	Assist participants with implementation phase.
March:	Attend Trustee Workshop.
	Obtain water and intertidal sediment samples
April 15.	Submit annual report (EV 99 findings)
September:	Obtain final water and intertidal sediment samples.
~	Prepare a program evaluation and final report.

B. Project Milestones and Endpoints

We anticipate completion of the planning process by the end of FY 99, and implementation of the plans by the end of FY 00. A final evaluation report will also be completed by the end of FY 00.

PUBLICATIONS AND REPORTS

Annual reports will be prepared by April 15 of FY 99 and FY 00, and a final report by September 2000. Since the restoration process will be strengthened by the provision of information about effective marine oil pollution prevention techniques, we expect information about such techniques will be made available by participants and the consultants, and published/broadcast by the media in the participating communities.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

This pilot effort will build on experience with the Trustee Council-supported regional partnership to better manage waste and marine pollution in Prince William Sound (approximately a \$1.2 million effort), and with the similar more recently initiated effort on Kodiak Island (approximately a \$150,000 planning effort). In preparing this proposal, we have talked with staff from the Prince William Sound Economic Development Council involved in implementing their plan, and with the lead person from the Kodiak Bureau Offices working with their plan. The Harbormaster in Seward was also a participant in the preparation of the Prince William Sound plan, and endorses the process for the Lower Kenai.

The proposed used oil management system facilities included in the Prince William Sound Waste Plan included double walled collection tanks, storage tanks, vacuum pumper systems, oil water separators, filter systems, used oil burners for energy recovery, filter crushers, oily material burners, and bilge water buffer tanks.

PROPOSED PRINCIPAL INVESTIGATOR

To be identified with the lead agency.

Interim Investigator:	
Name:	Marda F. Mayo
Mailing address	4348 East West Highway, Suite 1120
U	Bethesda, MD 20814
Phone Number	301 718 2270, x 236
Fax Number	301 718 2277
E-mail address	mmayo@erols.com

(INTERIM) PRINCIPAL INVESTIGATOR

Ms. Marda Mayo is a professional planner, manager, and researcher with over 25 years of experience. She is currently managing a series of over 10 meetings on water quality and contamination for the US Environmental Protection Agency, including their State Advisory FSTRAC meetings and public stakeholder meetings. She arranged for a presentation on Alaska's State Water Quality Center Program at the upcoming FSTRAC meeting. She has spent time in the Lower Kenai Peninsula, including the SeaLife Center, Seward, and Homer, and has family in Anchorage. She has been the facilitator and moderator for water and water contamination-related meetings on both domestic and international issues. She has worked on a number of hazardous waste sites across the country, including many with aquatic and marine oil contamination.

OTHER KEY PERSONNEL

Other key personnel include Dr. Al Cook, an expert in project economics, analysis and financing. His experience encompasses planning, the analytics of project financing, costbenefit analysis, decision making, economic analysis, operations analysis, and environmental issues surrounding equipment and infrastructure development. He has been involved with these issues for over twenty five years, and has assessed both the private costs and benefits as well as the social costs and benefits of policies reducing the damage of pollutants to the environment. Dr. Cook will focus on assisting participants in developing programs which are cost-effective.

Mr. Neil Ross is the head of the Marine Environmental Education Foundation, Inc. which has initiated a nationwide clean boating program. The group includes over thirty prominent marine trade associations, key environmental groups, marinas, major corporations, universities, and government agencies which have outlined a national program to enhance water quality through an outreach educational program with boating activities and facilities. He has also been a consultant to Alaska for several years on the issue of boating and marina pollution, and is the author of a report on best management practices for the State in 1995, working for the Governor's Office. He is currently a subcontractor to the US Environmental Protection Agency to prepare their National Environmental Guidelines for all Marinas and Boats in the USA.

Resumes for Ms. Mayo, Dr. Cook, and Mr. Ross are attached.

MARDA FORTMANN MAYO

EXPERIENCE

Ms. Marda Mayo is a professional planner, manager, and researcher with over 25 years of experience. She has extensive experience in community planning, and in water quality and waste clean up issues and technology. is currently managing a series of over 10 meetings on water quality and contamination for the US Environmental Protection Agency, including their State Advisory FSTRAC meetings and public stakeholder meetings. She has been the facilitator and moderator for water and water contamination-related meetings on both domestic and international issues. Current projects include a demonstration project on watershed management and graphic software presentation, as well as presentation of international water legislation on an Internet site. She has worked on a number of hazardous waste sites across the country, including many with aquatic and marine oil contamination. Ms. Mayo also has substantial experience with training and communications.

For the Galaxy/Spectron Superfund Site, project management, including development of a large database, financial allocation, financial management, and administrative service provision to the PRP Group Steering Committee. The site discharges into the Cheseapeake Bay via a stream through the site.

Project Manager of a site with over 4000 companies involved. (1995-Present).

For the National Association of State Development Agencies, demonstration and training in the Philippines of watershed management techniques and use of interactive graphic software.

Project Manager (1997-present)

For the Organization of American States, development of a pilot water legislation data base on their Internet Home Page.

Project Manager (1997).

For the North South Center, Water Workshop facilitation, preparation of proceedings report, and reporting

to the Permanent Council of the OAS for the U.S. civil society input into the December 1996 Summit Conference on Sustainable Development to be held in Bolivia,

Facilitator, proceedings author and preparatory meeting representative. (1996).

For the Hylebos, Bofors, and Fields Brook PRP (Potentially Responsible Parties) groups, company profiles and preparation, with the TLI teams, of Superfund site financial allocations. All three sites involved aquatic contamination. The Hylebos site is located on Puget Sound off of Tacoma, Washington.

<u>Senior Environmental Advisor</u> and company profile author. (1994-5). Provided guidance on major environmental considerations and their incorporation into the company profiles and allocation for three complex Superfund site allocations.

For the Environmental Protection Agency's Health Assessment stakeholder group, Safe Drinking Water Act, and for EPA's state advisory FSTRAC group, meeting facilitation, conference arrangements, and preparation of stakeholder meeting summaries.

<u>Working Group Recorder and Report Writer</u> (1995-96). Author of meeting summaries for a series of over ten technical stakeholder sessions and the State advisory group addressing the range of human health assessment issues covered by the Safe Drinking Act. Issues included risk assessment, and chemical and biological contaminants.

For the US Environmental Protection Agency's NELAC (National Environmental Laboratory Accreditation Conference), facilitation of a working group, and coverage of the final full conference meeting.

<u>Facilitator</u> (1995). Facilitated the working session for the Importance of Data Quality Subcommittee. Also author of the report covering the final Plenary Session.

For the US Environmental Protection Agency, preparation of a international deforestation and water quality planning and management workshop, and supporting materials.

<u>Project Leader</u> (1994). Principle author of management and enforcement workshops, and of a Technical Support Document.

For the U.S. Citizens Network for UNCED, Convenor, Water Resources Working Group.

Roundtable Participant (June 1991). President's Council on Environmental Quality, San Francisco, CA.

Coordinator (June - present). Freshwater Resources Paper, and book chapter.

For Abt Associates of Canada, under contract to the Ontario Ministry of Transportation and <u>Communications</u>, a study of the use of telecommunications as a complement to or substitute for transportation. The study covers the following areas of opportunity: telemedicine and telediagnosis, decentralization of work locations, electronic mail, teleconferencing, delivery of social services including health and education, distribution of traffic information, driver training with telecommunication, and teleshopping.

<u>Technical Advisor</u> (1980-1981). Provided a review on the U.S. experience in the seven major areas of interest. Responsible for monitoring the technical quality of the contract work and for reviewing reports to client.

For the U.S. Department of Agriculture, a national rural community facilities assessment study. The purpose of this multi-million dollar study was to inventory, assess, and estimate shortfalls in twelve categories of public service facilities in rural America. Facilities include health, safety and justice, water supply, waste water, solid waste, recreation, education, energy, communications, transportation, and industrial parks.

Senior Analyst/Telecommunications Facility Study Director (1979-1981). Directed study of rural telecommunications facilities and services in the areas of cable and broadcast public and commercial TV, disaster preparedness, telephone, postal, and radio. Developed the analysis plan; supervised data base assembly of existing national data; designed primary data collection instruments for cable television and disaster preparedness; and analyzed data in terms of facility adequacy to meet emergency, day-to-day, and alternative service provision needs.

<u>Task Director</u> (1978-1979). Supervised a review of major national secondary data sources available for all twelve major facility areas: health, safety and justice, water supply, waste water, solid waste, recreation, education, energy, communications, transportation, and industrial parks.

<u>For Abt Associates Ltd. of Canada</u>, under contract to the Province of Alberta, a study of effects on staff recruitment and retention of the rural relocation of a "distance" teaching institution, Athabasca University. Staffing experiences of U.S. and Canadian universities relying on telecommunication and other distance teaching facilities, and located in isolated rural areas, were summarized and strategies for maximum retention developed to assist Athabasca University in relocating from an urban to a rural areas.

Senior Analyst (1980-1981). Developed the research program for the U.S. portion of the study, conducted interviews with Vice Presidents of the State University of New York, and supervised all other U.S interviews and research.

For the Corporation for Public Broadcasting (CPB) and the National Telecommunications and Information Administration (NTIA), organization of the Boston portion of a twenty-site national satellite teleconference. Designed to provide information on opportunities for women and minorities in public broadcasting, the teleconference was organized by the Public Service Satellite Consortium (PSSC) and the Booker T. Washington Foundation.

<u>Boston Teleconference Coordinator</u> (1980). Organized pre-conference activities including conference publicity, selection of conference invitees, arrangements with local television station for hookup, viewing and discussion facilities, and chairing the Boston conference while on-air.

For the Environmental Protection Agency, preparation of a document to assist local planners and officials in devising ways to extend non vehicular usage in transportation and air quality plans and strategies.

<u>Project Manager</u> (1978-1979). Designed research plan, managed budget process, supervised research by three subcontractors, authored final report which was distributed nationwide by EPA.

For the Boston Redevelopment Authority, City of Boston, MA, an environmental impact statement on the South End Urban Renewal Project. The EIS assesses impacts of various potential reuses of the urban renewal parcels so that the urban renewal funding can be phased out and newer programs phased in.

<u>Deputy Director</u> (1978-1979). Developed the impact summary format, budget for contract, and analyzed housing-related impacts.

For the U.S. Department of Commerce, Economic Development Administration, a national evaluation of the economic development planning process assisted through grants to states, multicounty districts, and cities. The study involves assessing the quality of the planning outputs, as well as that of the local planning institutions and processes that produced them. The study is intended to generate recommendations for increasing the effectiveness of state, district, and local economic development planning as well as the overall management of the planning grant programs.

<u>Task Leader</u> (1978-1979). Directed preparation of and implementation of the ten-site California and Georgia field survey on the planning process, and products in those sites. Prepared reports summarizing the findings in all sites.

For the U.S. Department of Housing and Urban Development, a study to determine the effectiveness of prepurchase counseling for first-time homebuyers.

Senior Analyst (1977-1978). Responsible for major aspects of the research design such as content of FHA data analysis and selection of the appropriate population for demonstration counseling; design of final Homebuyer Survey; field interviews of HUD and counseling agency staff in two potential demonstration sites; and contributions to a prepurchase counseling handbook on home purchase.

For the U.S. Department of Housing and Urban Development, the Experimental Housing Allowance Program --Demand Experiment, a contract to design, plan, conduct, analyze, and manage experiments intended to provide reliable data from which an evaluation can be made of the effects of providing direct financial assistance (housing allowances) to families, enabling them to live in decent housing. The focus of the experiment is on how households use their housing allowances in terms of the quality of housing secured, location selected, the cost incurred, and satisfaction with choices made. This was a multiyear effort involving approximately 1,200 households receiving housing allowances and 600 control households in each of the two experimental sites--Pittsburgh, Pennsylvania and Phoenix, Arizona. Senior Analyst (1977). Analyzed the comparative impacts of legislation and program regulations on housing quality, locational choice, participation, and other outcomes in the Section 236, Rent Supplement Public Housing Section 23, and Housing Allowance Program.

For the Law Enforcement Assistance Administration, the development of a training curriculum in the use of quantitative and qualitative methods of analyzing crime and criminal justice system problems and methods for developing alternative solutions to these problems. The curriculum was designed to increase the analytical skills of state and local criminal justice planning agency staff and to improve the quality of criminal justice planning products such as state and local long and short-term plans. Transfer of the curriculum to the national system of LEAA Training Centers occurred in the final state in the course development.

Senior Analyst (1977). Wrote curriculum sections on Data Collection and Research Design Implementation.

For the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, the development, testing, and demonstration of TA (technical assistance) mechanisms to assist HUD recipients in achieving optimum feasible employment and training of lower income residents. The purpose of this project was to develop a viable program of technical assistance to aid HUD grant recipients--principally municipalities receiving Block Grant funds under Title I of the Housing and Community Development Act of 1974--in providing employment and training to lower income residents of HUD project areas. The TA program was tested in five sites and measures of success derived from comparison with five matched control sites.

<u>Analyst</u> (1976-1977). Responsible for interviewing and technical assistance at several sites. Contributed to data analysis and development of a handbook, "HUD Jobs and Business Opportunities Through Section 3."

For the U.S. Department of Housing and Urban Development, preparation of an Administrative Handbook for the Section 3 Existing Program. A detailed three-volume handbook was produced under this contract to guide local public housing agency administrators in implementing HUD's regulations for a new national housing program.

<u>Analyst</u> (1976) Prepared a section on "Housing Quality Requirements" which included detailed inspection guidelines and technical assistance.

For the U.S. Department of Housing and Urban Development, the Experimental Housing Allowance <u>Program--Administrative Agency Experiment</u>, an evaluation of eight demonstration agencies participating in the administration of a housing allowance program. The primary focus of the evaluation was to identify appropriate administrative means for delivering direct cash assistance to families for housing expenditures, using information collected on the different administrative procedures used, the effects and costs of each, and the experiences of agencies and participants in the program.

<u>Analyst</u> (1975-1976). Evaluated the locational choice of participants in the Administrative Agency Experiment, including effects on racial and economic integration and on overall neighborhood improvement.

<u>Analyst</u> (1974). Authored paper on policy aspects of eligibility in housing allowance program, and coauthored a policy study on participation.

Analyst (1974). Conducted field evaluations under HUD Public Housing Management Improvement Program. Project site work included both interviewing and direct data collection from agency records

Audubon Society, Lincoln, MA

Environmental Staff (1973). Wrote and assembled a slide program on wetlands, and coauthored a publication on wetlands and the water cycle.

New York City Housing and Development Administration, New York, NY

<u>Project Director</u>, Clinton Urban Renewal Project (1970-1971). Managed the detailed planning and implementation of a multimillion dollar urban renewal project in midtown Manhattan. Duties included supervision of a field staff of over twenty, including residential and business relocation,

planning and a maintenance crew; coordination of the many project components including architectural design and negotiations with other city agencies; and on-going consultation with the community groups and housing sponsors in the area.

<u>Planner</u> (1968-1970). Responsible for detailed planning, community liaison, and preparation of feasibility studies for several urban renewal projects in Manhattan and Brooklyn. Work included planning for the city-funded Williamsburg renewal project whose first stage of housing construction was completed within three years after planning was first initiated.

U.S. Department of Housing and Urban Development, Washington, DC

<u>Planner</u> (1965-1967). National policy review including Urban Planning Assistance (701) application review for state, county, and metropolitan projects, and drafting of policy statements such as the 701 historic preservation guidelines.

EDUCATION

M.S., Planning, Columbia University B.A., Sociology and Asian Studies, East-West Center

ALVIN A. COOK, JR.

EDUCATION

University of Washington (Seattle), Ph.D., Economics, 1968 University of Washington (Seattle), M.A., Economics, 1966 Seattle University, B.A., Mathematics, 1961

EXPERIENCE

Dr. Cook has extensive experience in project economics, analysis and financing. He has focussed on the environment, energy, and aviation. His experience encompasses planning, the analytics of project financing, cost-benefit analysis, decision making, economic analysis, operations analysis, and environmental issues surrounding infrastructure development. Dr. Cook has been involved with these issues for over twenty-five years. Moreover, he has assessed both the private costs and benefits as well as the social costs and benefits of policies reducing the damage of pollutants to the environment.

He has performed consulting services for many federal government and State agencies as well as many private sector clients. These clients have been in the United States and in foreign countries. A sample of the relevant projects in which Dr. Cook has been engaged over the past several years includes:

- Analysis of local and regional economic and employment benefits of investments in environmental protection.
- Economic Impact of Pollution Abatement and Control Investments. The aggregate economic impact of investments in capital equipment leading to

pollution abatement and control were estimated for the short run.

- Environmental and economic analysis of Boomtowns. An analysis of energy oriented Boomtowns in the West was conducted for the Office of the Environment in the Department of Energy. The project addressed the economic and environmental problems that occurred in the framework of general urban development.
- Impact of environmental regulatory policies. An analysis of the impacts of alternative energy and environmental regulatory policies on water, air quality, land use, and solid waste disposal was performed for the Office of the Environment in the Department of Energy.
- Regional environmental effects. Assistance in completing the first Regional Issue Identification and Assessment Program Report (RIIA) on environmental and economic effects of alternative utility capacity scenarios was provided to the Office of the Environment in the Department of Energy.
- Net Costs and Benefits of Acid Rain Legislation. The net costs and benefits of acid rain legislation on each State and for the United States as a nation were calculated for both the immediate term and the long term.
- Impact of Acid Rain Abatement Legislation. This study estimated the impact of acid rain abatement legislation on individual States and on electric utility company costs and customer rates. Dollar costs were estimated on the State level and for companies within the States.
- Economic and Employment Effects of Acid Rain Control Legislation: The Case of Ohio. A case study of the effects of acid rain control legislation was completed for the State of Ohio. The effects were specific to the economic and growth conditions of the State.
- Economic Benefits of Environmental Protection Investments. This study analyzed the economic and employment benefits of investing in environmental protection at the major industrial sector level. The benefits were aggregated to the national level in terms of aggregate income and total employment.
- Cost-Benefit analysis of alternative sized generating facilities. A cost analysis of alternative sized electric utility generating facilities was performed for the Minnesota Environmental Quality Board. The primary issues addressed were environmental effects and economies of scale.
- Environmental Impacts. An urban and community impact analysis of alternative-sized synthetic fuel plants was conducted for the Office of the Environment in the Department of Energy at six sites for potential location of the plants.

Dr. Cook has worked with several companies over the past twenty-five (25) years. During that period, he has occupied management as well as analysis positions. These are listed briefly below.

PLANNING SYSTEMS INTERNATIONAL

Dr. Cook has been President of his own consulting firm since 1983. During that time, he has directed the company in its work in the areas of economic forecasting, analysis and planning. He has worked for the Federal Aviation Administration, the Department of Defense, the Department of the Treasury, the Department of Energy, the Department of State, and the Department of Transportation as well as many private sector clients. The primary focus of this work has been business planning and investment in local project development, energy, the environment, aviation, and manpower.

PREVIOUS POSITIONS

• Vice-President, Utility and Energy Division, Applied Management

Sciences, Inc.

- President, Alvin A. Cook Associates, Inc.
- Vice-President, Economics and Policy, Science Applications, Inc.
- Director of Energy, Data Resources, Inc.
- Deputy Assistant Administrator for Economic Impact Analysis, Federal Energy Administration
- Manager, Economic and Planning Analysis Group, Boeing Computer

Services

Economist, The Rand Corporation

LECTURER

Dr. Cook has lectured in Microeconomics, Macroeconomics, Decision Theory, and Statistics at the undergraduate and graduate level at:

The University of Washington The University of California at Los Angeles Georgetown University George Mason University

NEIL WILLIAMS ROSS

PROFESSIONAL EXPERIENCE

Has 30 years successful professional work in applied technical research, information and educational services to the marina industry, marine trade associations, government agencies, civic & environmental organizations in 12 nations and 39 states.

Internationally recognized authority on marina & coastal issues specializing in:

- Environmental management, best management practices (BMP)
- Marine professional education
- Boat sewage control & Federal pumpout grants
- Marina Pro© and Boating Pro© training program
- Marina facility planning, expansion, operation & evaluation
- Boat theft control
- Floating wave attenuators, FTB

- US marina business history, trends & facilities database
- Coastal planning for boating access & marina facilities
- Automobile parking & usage standards for marinas
- Hypothermia & red tide safety, prevention education
- Standardizing marina terminology
- Building marina professionalism

Author of numerous published articles, reports and books on the broad range of marina technical topics.

PROFESSIONAL EXPERIENCES

1998 National Clean Boating Campaign, a nationwide MEEF consortium program - founding Executive Director (1997-98)

Clean Vessel Act National Pumpout Grant Program Success Study, US Fish & Wildlife Service - P.I. (1997)

Clean Marina & Clear Value National Study, US EPA - P.I. (1995-1996)

Best Management Practices for Alaska Report, State of Alaska - Principal Investigator (1995)

Marine Environmental Education Foundation, CleanMarina Program - Founder & President (1994-present)

EPA/IMI National Marina Environmental Workshop - Leader, Instructor (1994-95) International Marina Institute - Founder, 1st President (1986-93)

University of Rhode Island Sea Grant MAS - Coastal Recreation Specialist (1969-86) US National Marina Facility Inventory - Creator of first database, Director (1985-87) URI/IMI Advanced Marina Management School - Creator, Director (1985-90)

University of Wisconsin Docks & Marinas Conference - Keynote & Annual Speaker (since 1976)

Rhode Island Marine Trade Association - 1st Executive Director (1972-73) Rhode Island Boat Show - Manager; Newport International Sailboat Show - Asst. Manager (1973)

Well known international marina technology lecturer on four continents (since 1970) Chairman at over 16 National & International Marina Conferences (1975-98)

EMPLOYMENT

1994-present 1994-present president	Neil Ross Consultants, Kingston, RI - principal Marine Environmental Education Foundation, Inc (MEEF) - founding
1993-94	CleanMarina Consortium, Orlando, FL - cofounder & executive director
1986-93 president	International Marina Institute (IMI), Wickford, RI - founder & 1st
1969-86	URI Sea Grant (SG) Marine Advisory Service, Narragansett, RI marine recreation specialist (1st in National Sea Grant)
1982-83	US Agency for International Development/National Marine Fisheries Service, Small Scale Fisheries Development Project, Tambak Extension Sub-Project, Java & Sulawesi, Indonesia - coastal extension education specialist
1972-73	RI Marine Trades Association, Warwick, RI - 1st Executive Director & RI Boat Show Manager
1965-67	Breckenridge Job Corps Center, Southern Illinois University/Graflex, Corp., Morganfield, KY - Senior Vocational Instructor

PROGRAMS & RESEARCH (partial list)

1997-present National Clean Boating Week, a nationwide MEEF consortium program - managing director

- 1997 Village of Greenport Harbor Management Plan, NY, with Allee King Rosen & Fleming, NY consultant
- 1996-97 CVA Pumpout National Pumpout Grant Program Success Study, US Fish & Wildlife Service Principal Investigator
- 1995-98 IBEX Marina Management Education Series, Professional Boat Builder Magazine annual trade show, FL - training organizer & lecturer
- 1995-96 Clean Marinas & Clear Value Study, Tetra Tech for US EPA, Washington, DC - principal investigator
- 1995-present Managing Marinas: Merging Economics & Environment Course, MEEF regional training for state coastal regulators, NOAA, Washington, DC training director
- 1995 State of Alaska, US Nationwide BMP Review for Alaska PI
- 1995 Town of Southold, NY, Harbor Management Plan, with Allee King Rosen & Fleming, NY consultant

1994-present EPA/IMI National Marina Environmental Workshop series - creator & instructor

1992 New England Coastal Marina Pumpout Survey, EPA Region 1, Boston, MA - director

- 1990 Urban City Marina Redevelopment Feasibility Study, IMI for City of Elizabeth, NJ - project leader
- 1985-90 Ådvanced Marina Management School & Marina, URI & IMI Creator, Director
- 1989 National Survey of Auto Parking in Marinas, IMI principal investigator
- 1985-87 1st US National Recreational Boating Facilities Inventory, URI SG, IMI & NMMA (telephone interviewed 8,460 facilities) PI & director
- 1981 US Peace Corps/University of Rhode Island, Papua New Guinea & Philippines, training director, RI

1978 Remote Sensing Survey of Rhode Island's Coastal Marina Facilities - project leader

- 1976-93 National Docks & Marinas Conference, University of Wisconsin College of Professional Engineering Development, Madison, WI - annual keynote speaker, adjunct faculty
- 1977-80 Native American Committee, University of Rhode Island founder & chairman
- 1975-77 US Bicentennial Celebration Program Committee, University of Rhode Island - founder & chairman
- 1975-present Organizer & chairman of over 15 national & international marina conferences
- 1970-present Invited technical lecturer at over 270 state, regional, national & international marina conferences, workshops & seminars

PUBLICATIONS

⁽samples from over 262 published technical papers, books & reports)

1997 American Success Stories, The Clean Vessel Act of 1992 Pumpout Grant Program, US Fish & Wildlife Service, Washington, DC

1996 Clean Marinas & Clear Value Report, US EPA/Tetra Tech - PI & author

1995 Managing Marinas: Merging Economics & Environment, Workshop Summary, NOAA - PI, director & instructor

1995 BMP Examples for Alaska, State of Alaska - PI & author

1994-95 Marina Environmental Management 9 month series, Soundings Trade-Only Magazine - author

1994-present Soundings Trade-Only Magazine, marina writer & columnist

1994-95 Marina Environmental Workbook, IMI & US EPA - editor & instructor 1993 US Environmental Laws Affecting Marinas & Recreational Boating, IMI -

coauthor w/R. McArdle

1991-93 Marina Operations Manual, IMI - editor

1990 Its Time to Become Environmentally Aggressive, IMI Fact Sheet

1989 Marina Dictionary, IMI - creator & editor

1989 Auto Parking in Marinas - author, Marinas: Planning and Feasibility International Conference Proceedings, W.R. Blain & N.B. Webber, editors, Computational Mechanics Publications, Southampton, UK, pp. 97-110

1989 Personal Profiles: Neil Ross - author, The Macintosh Small Business Companion, C. W. Harriman, Brady, NY, pp. 299-301

1987 The Marina Environment and Community - author, Marinas For The Community, International Marina Conference Proceedings, Brisbane, Australia, pp. 238-249

1987 Red Tide, Environmental Medical Injuries - author, Textbook of General Medicine and Primary Care, J. Noble, MD, editor, Little, Brown and Company, Boston, pp. 363-364

1983 US Agency for International Development, Small Scale Fisheries Development Report on Tambak Extension Sub-Project, Brackish Water Fish Farming Extension Education Program, Indonesia - consultant & author

1981 Remote Sensing Applied to Marinas and Boating - author; chapter in Remote Sensing, a Tool for Managing the Marine Environment: Eight Case Studies, G. Behie & P. Cornillon, Ocean Engineering, URI, Technical Report 77.

1978 Environmental Impacts of Marinas and Their Boats, URI SG - coauthor w/G. Chmura

1974-present "Ross on Marinas", annual "Marine Computer Buyers Guide", Boating Industry Magazine - writer, regular column and annual feature articles on marina issues.


October 1, 1998 - September 30, 1999

	Authorized	Proposed		differences and				14 (A)
Budget Category:	FY 1998	FY 1999						A 445 ()
Personnel		\$0.0						
Travel		\$40.0					都是您。	
Contractual		\$146.3						
Commodities		\$0.0						
Equipment		\$0.0		LONG R	ANGE FUNDI	NG REQUIRE	MENTS	
Subtotal	\$0.0	\$186.3	I	Estimated	Estimated	Estimated		
Indirect		\$1.5		FY 2000	FY 2001	FY 2002		
Project Total	\$0.0	\$187.8		\$349.3	\$0.0	\$0.0		
						122		
Full-time Equivalents (FTE)		0.8						
			Dollar amoun	ts are shown ir	n thousands of	dollars.		
Other Resources								

Comments: <u>FY99</u> travel includes travel, lodging and meal expenses for the 3 regional meetings for a village representative each from Port Graham, Nanwalek, and Soldovia. It also includes travel, lodging, and per diem expenses for 3 preparatory/interim coordination/Symposium and 3 meeting trips for the three consultants. Five days of time, transportation (combined with interim project coordination) and per diem for the Principal Investigator have been reserved for the 10th Anniversary Symposium. We expect actual consultant travel costs to be lower than budgeted.

Contractual includes 195 person days. Because of the geographically dispersed nature of the participant localities, 6 days for each of the three consultants is allocated for the preparatory and interim meetings so that each locality can be visited. Seven days/person for the lst meeting, and 5 days for each of the subsequent meetings is included, along with 5 days/person of planning time and 2 days/person for the plan development. \$1500 is included under Indirect Costs for phone and fax.

<u>FY 2000</u> Estimates include Capital Costs of \$50,000 x 3 for used oil system equipment costs for each of three villages. These adjusted estimates are based on the village equipment costs for components including double walled collection tank, vacuum pumper system/portable unit, oily water separator, filter system, used oil burner for energy recovery, oily material burner, and bilge water buffer tank included in the February 1996 *Sound Waste Management Plan.* Capital Costs of \$150,000 are included for Seward, based partly on estimates for the larger communities in the *Sound Plan* and on a pilot oil collection boat and equipment. Capital Costs for Homer and/or Kenai will be identified during the lst year planning process. O & M Costs are not included and are assumed to be funded by the villages/communities or from non-Trustee Council sources. Consultant costs include 43 person days and travel/per diem for: 5 days x 3 people for the implementation startup, 18 days for

FY 99

Prepared:

Project Number: 775 995/5 Project Title: Lower Kenai Chronic Marine Oil Pollution Project Name:

FORM 4A Non-Trustee SUMMARY

(only I page of budget was submitted

Project Title: Prince William Sound Regional Cultural and Eco-Tourism Center

Project Number:

Proposer:

99517

EXXON VALUEZ GIL SPILL TRUSTEE COUNCIL

APR 1 5 1998

Restoration Category:

Preserve/improve the recreation and tourism value of the spill area.

Kueuit Foundation Inc.

Signature: Frank Irick, Incorporator and Chairman of the Board of Directors.

Lead Trustee Agency

Cooperating Agencies:

Alaska SeaLife Center:

Duration:

No

1st year of a 3-year project

Cost FY 99:

Cost FY 00:

Cost FY 01

Geographic Area:

Injured Resource/Service:

Seward, Native coastal villages in Prince William Sound, and pristine wilderness areas within the Sound

Coastal environment and potential for ecological/cultural tourism

04/15/98

Project 99



Ten years after the 1989 Exxon Valdez Oil Spill, most of beautiful Prince William Sound, its wildlife resources, and the Native communities that make their living on the resources of the Sound, are intact and where impacted by oil damage, have been partially restored or revived.

This proposal will outline an approach to restore recreation and tourism usage of the wilderness and traditional Native culture in the PWS region. We feel that this can be done by encouraging visitors to come to see and appreciate 1) the remaining pristine beauty of the Sound and the Native cultures of the area, 2) the history of the Oil Spill and initial assessment and cleanup activity as well as longer-term resource restoration efforts and the impact of these on all the resources of the area, including the people and traditional lifestyles, 3) the importance of continuing good stewardship of the natural resources of the area under the planning and control of its residents.

INTRODUCTION:

The Trustee Council is inviting proposals for restoration projects for fiscal year 1999 that address strategies for recovery of injured resources and services in Prince William Sound.

Restoration strategies of the Council encourage proposals that address appropriate restoration activity for loss of resources and services in several specific "resource clusters," including one designated as *lost or reduced recreation and tourism services*.

Wide publicity in 1989 regarding degradation of beaches and sealife and damage to Indigenous traditions and subsistence lifestyles of community residents negatively affected tourism activities dependent upon public perception of the pristine wilderness qualities of the region.

The 1994 Council Plan and Supplement of 1996 verified the continuing damaged wilderness recreational resource in the Sound by citing the fact that part of the PWS coastline is, and is likely to remain for a significant amount of time, scarred from the Spill. Certain pristine natural areas cannot be returned to their original state; in like manner, the Native traditional lifestyles in small coastal communities have been forever altered in many ways by the spill and its aftermath.

Although wilderness-based tourism resources cannot be returned to their former "untouched" status, the opportunity exists for the communities in the area to recover and develop this resource to take advantage of the growing trend for authentic ecological and cultural eco-tourism visitor experiences.

Not only does a high proportion of the Sound retain its original, unspoiled, wilderness character, additional natural habitat areas have been set aside. The treatment and study of the effects of the spill have added to the unique cultural history of the region and to scientific knowledge about the regeneration of biological resources.

1

This proposal attempts to restore the PWS area's option for ecological tourism development by providing a regional cultural and eco-tourism center to 1) encourage public appreciation of the ongoing cultural and eco-tourism values of the area 2) facilitate local-community and regional planning and coordination of tourism and visitor recreation projects.

NEED FOR THE PROJECT

Statement of Problem

The potential for development of eco-tourism based on the value of pristine wilderness of the Sound and traditional native cultural activities in its communities was deeply impacted by the damage from the Exxon Valdez Oil Spill in 1989. To date, this loss of potential for eco-tourism development in the area has been directly addressed by the Council only in decisions to acquire and preserve additional wilderness reserves.

Not only did the oil spill debase the beaches and destroy many species of flora and fauna in these unique and beautiful areas, publicity surrounding the event strongly affected the public's perception of the remaining wilderness. In addition, activities related to assessing and addressing the damage to plant/marine wildlife/ and subsistence activity in the Sound and its communities forever altered the lives of many traditional Native communities as well as the regional centers of Seward, Valdez and Cordova.

Since 1989 there has been dynamic growth in the Alaskan tourism industry, in significant measure fueled by growing interest in "eco-tourism in Alaska"—the desire to visit and enjoy pristine wilderness areas and experience Alaska's traditional Native cultures . In the last ten years, throughout many other regions in the State, including Native villages on St. Lawrence Island, St. Paul, and in Southeastern Alaska, rural communities have successfully embraced and implemented eco-tourism development which relies on appreciation of wilderness values and traditional Native lifestyle.

B. Rationale/ Link to Restoration

Despite the damage from the Exxon Valdez Oil Spill and the consequent disturbance to the area and people by government and private efforts to assess and restore impacted resources, there remains in the Sound the potential for positive, locally controlled eco-tourism development.

The continuing natural beauty of the area and the unique cultural heritage of its residents can be displayed proudly, with minimal disturbance to traditional values, with the Council's financial assistance for controlled development of the area's remaining eco-tourism resources. *Funding of this proposal would emphasize tourism development consistent with Native stewardship of vital wilderness and cultural resources.*

The history of the Spill cleanup and major efforts to assess and rectify the damage to the natural setting and the sealife are now part of the area and its attraction to potential visitors. This history can best be introduced to visitors as part of a respectful display of the natural beauty of traditional lands and culture, Native traditional values for the land and wildlife, and appreciation of the importance of careful stewardship of resources.

The biological and scientific work of the last decade, under the auspices of the Trustee Council, has laid the necessary groundwork for restoration of this type of tourism service development.

This project involves development of four essential components related directly to restoration of ecological and cultural tourism. These components include:

- 1. A regional cultural and eco-tourism community center within the refurbished, historic, Jessie Lee Home in Seward, Alaska. will be developed during the first fiscal year of this project. This facility will serve as a venue for community workshops, scheduled for early in fiscal year 2, on the subject of development of remaining wilderness values and cultural recreational resources in ways consistent with local values. Early in the first project year, part-time community representatives will be selected to obtain the input of their villages regarding the choices for the new Center's design.
- 2. A museum/cultural display in the Jesse Lee Home (JLH) facility will also showcase a variety of project information and history, artifacts, and the results of scientific research and other projects funded by the Council. These displays will provide public education to inform visitors of the remaining beauty, ecological values and traditional cultures of the Sound.

The exhibit aspect of this facility will serve as an introduction to the ecology and culture of the area for the public, and particularly the visitor. The facility will have a theater and native crafts workshop, as well as artistic and photographic exhibits. Finally there will be a small greenhouse where visitors may learn how careful stewardship can regenerate and maintain vital resources.

- 3. A community involvement component which supports local decision-making by PWS communities regarding the choice of whether to pursue eco-tourism projects at all, and if so, how to develop such projects to be consistent with traditional values. This element will involve development, under the auspices of local and regional native leaders, of an explicit set of guidelines for undertaking ecological or cultural tourism projects either in villages or pristine areas of PWS. Community conferences will explore general approaches and practices of other Alaskan communities to ecological and cultural tourism projects. The recommendations emanating from these conferences will address the place of traditional ecological knowledge in future tourism development.
 - 4. A training/application component, through which those desiring to develop eco-tourism related services in their communities would receive appropriate project planning and implementation technical assistance to do so. Training will be available to develop workable plans, timetables and financing for such projects.

In its entirety, this is a general restoration project which improves the wilderness and cultural tourism potential of the area by managing tourist intrusions into the recovery area.

The history of the Spill clean-up, and major efforts to assess and rectify the damage to the natural setting and the sea life are presently an integral part of the area. These can now become part of its attraction to potential visitors. This history can best be introduced to tourists as part of a respectful, locally designed and authentic display of the natural beauty of traditional lands and culture, Native traditional values for the land and wildlife, and appreciation of the importance of careful stewardship of resources.

C. Location:

The project is principally located in Seward, however activities will include involvement and participation by members of all communities of the Sound and other areas affected by the Spill.

COMMUNITY INVOLVEMENT AND TRADITONAL ECOLOGICAL KNOWLEDGE (TEK)

The success of this project *hinges* on sustained involvement from local communities.

A

In the renovation of part of the Jessie Lee Home for use as a cultural and eco-tourism center, local community residents will be asked to give their critical input to achieve a renovation layout and facility usage that can best provide an appropriate venue for community displays of traditional land and cultural values, the history of the oil spill and its aftermath, and important cultural artifacts. Part- time community tourism specialists in each community will coordinate community involvement and planning of the renovation, regional guidelines, and ultimately, individual community tourism projects.

TEK will be incorporated into all phases of this project because traditional leaders will be *driving* the project.

PROJECT DESIGN

A. Objectives for fiscal year 1 and the remainder of project:

1. Revive eco-tourism prospects and interest in the PWS area affected by the oil spill of 1989.

2. Provide easily accessible, attractive, and historically accurate, public information regarding the continuing cultural and ecological values of PWS and its communities

3. Facilitate community-level control of the planning and development of locally driven, regional plan-consistent eco-tourism projects in Prince William Sound.

B. Methods:

Specific action which will be taken in fiscal year 1 to restore injured ecotourism resources, includes the following:

- Select project coordinator in cooperation with other interested organizations
- Seek and obtain input from PWS communities regarding potential uses and specific design features to be included in the part of Jessie Lee Home that will constitute the PWS Cultural and Eco-tourism center.

- Coordinate with Jessie Lee Home Executive Director to raise matching funds for ½ of the building renovation project for the eco-tourism space.
- Coordinate with prime reconstruction contractor for specific reconstruction activities in Jesse Lee Home related to community center during FY 99.
- Gather appropriate data on eco-tourism issues in Alaska and disseminate this information to impacted PWS communities; obtain their feedback.
- Coordinate with PWS communities in Chenega Bay, Cordova, Nanwalek, Port Graham, Seward, Tatitlek and Valdez, and affected Kodiak area communities including Kodiak and Seldovia, and in affected Alaska Peninsula communities, to select and orient new village eco-tourism development specialists.
- Based upon input from communities, develop and coordinate implementation of initial specific plan for community, historical, and cultural and organizational displays for the Community Center.

Eco-tourism potential restoration objectives for Fiscal Year 2 include:

- Hold Eco-tourism Development Community Participation conference. (100 invited guests) to fashion a regional strategy with for area-wide eco-tourism development and explore potential community projects.
- Compile the results of this conference into a plan for community dissemination and review.
- Oversee rotating PWS cultural artifact exhibits, historical and public information displays in center; arrange for visiting cultural exhibits events between Seward Center and communities.



Eco-tourism potential restoration objectives for fiscal year 3 include:

- Finalize community consensus on eco-tourism regional plan and guidelines.
- Implement various training activities as appropriate for community needs for technical assistance, including budgeted visits by local community leaders planning eco-tourism projects and/or attending events or training in Seward. Conduct staff visits to villages to facilitate project development.
- At end of third year, conduct eco-tourism recovery project evaluation in conjunction with community ecotourism specialists and other local and regional leaders.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

Trustee agency not designated by proposer.



The principal contracted component of this project will be a private sector contract for renovation of approximately 6000-9000 sq. feet of a 35,000 sq. foot building which will constitute the Prince William Sound Cultural and Eco-tourism Center. The contract is expected to consist of services valued at approximately \$689,000; however only half of that amount will be funded out of Council grant monies. The remainder will be raised from other sources.

In addition, the proposer contemplates a private sector contract for accounting/audit services at the end of the grant period.

SCHEDULE

In FY 99 the following schedule is planned:

December 31, 1998	Selection of Project Director
Feb 1, 1999-March 31, 1999	Complete extensive grant development for
	additional resources
March 31, 1999	Receive final community input on
	uses/design plans for center
March 31, 1999	Complete community
	selection and orientation of Eco-tourism
	development specialists in 8-9 PWS
	communities

April 15, 1999	Begin reconstruction activities for center in
	JLH facility
April 15, 1999	Complete initial plan for specific historical,
	cultural, and scientific exhibits and displays
May 15, 1999	Complete major information gathering and
•	dissemination effort to apprise PWS
	communities of relevant ecotourism
	projects and issues; information
	communicated via personal visits to
	individual communities, newsletters and

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-		and mailed information.
· · ·	May 30, 1999	Complete plan and initial arrangements for Spring 2000 Community Participation Conference
	September 30, 1999	Completion of reconstruction activity for PWS Cultural and Eco- tourism Center

3. Project Milestones and Endpoints

Milestones for Objective 1: Revive eco-tourism prospects and interest in PWS area affected by the Oil Spill of 1989—

- A. Hold community participation conference as a basis for community planning of regional and local ecological and cultural tourism development projects. February, 1999.
- B. Complete initial plan for public information cultural, historical, and ecotourism exhibits to be displayed to visitors to the Center. April 15, 1999.
- C. Disseminate relevant information to PWS communities regarding potential eco-tourism development ideas and issues to consider in community and regional planning May 15, 1998
- D. Consolidate comments of participants of community eco-tourism conference in order to create a set of locally relevant guidelines for eco-tourism development in the sound. February, 2000.

Q

E. Complete renovation of 6-9000 sq. ft. regional cultural and eco-tourism center in historic Jesse Lee Home facility. Sept. 30, 1999

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- F. Implement exhibits and display project showcasing remaining natural and cultural resources in the PWS area. April, 2000
- G. Act as a catalyst for development of at least 3 community eco-tourism local projects. Assist in assessment of demand, project planning, financial and project implementation. Sept, 2001.

Milestones for Objective 2—Provide easily accessible, attractive and historically accurate public information regarding the continuing cultural and ecological value of PWS and its communities.

A. Build the internal structure for a PWS community cultural and ecotourism center that provides a venue for public information on the Sound, its history, culture, and current ecological status. This is accomplished by completing refurbishment of 6-9000 sq. feet in the historic Jesse Lee Home in Seaward, Alaska . Sept. 1999

B. Implement a public information display center highlighting for the public and visitors to the area the natural ecology of PWS, the history of the spill, cultural heritage of its inhabitants, and lessons learned during extensive remediation and scientific study of the area during the subsequent years. Sept, 2000.

Milestones for Objective 3- Facilitate local community planning and control of eco-tourism project development in the area.

- A. Gather relevant community information on eco-tourism development potentials, the experience of other Alaskan rural communities, issues relating to benefits and costs, and information on the availability of various resources to assist in the process. Distribute this package to Community Eco-tourism representatives in each impacted town or village. May 15, 1999.
- B. Host a citizen participation conference and workshops discussing tourism development issues for PWS residents interested in creating community ecotourism projects.
- C. Provide technical assistance to local leaders requesting such, and facilitiate participation by local community leadership in *other* training and technical assistance programs available to support such development.
- D. Evaluate the impact of Center efforts in encouraging local leadership in project development for eco-tourism resource replacement. Sept, 2001.



It is anticipated that all project work be completed by September 30, 2001.

PUBLICATIONS AND REPORTS

A report will be presented each April 15 to the Anchorage Restoration Office of the Council. This report will also be distributed widely to area libraries and the public.

The regional plan to control potential eco-tourism development in the PWS developed out the Community Participation conference will be published and widely distributed throughout the State.

PROFESSIONAL CONFERENCES

The Project Coordinator will present a progress report at annual Alaska Outdoor Recreation Conferences starting in the Spring of 1999, the annual Western Regional Science Association conference, and at least two other national conferences as the opportunities arise during the 3 project years.

MAL AGENCY MANAGEMENT

No government agency involved in active project management.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

As many as possible of the various studies and restoration projects funded by the Trustee Council will be involved in the proposer's Prince William Sound Community Cultural and Eco-tourism Center public information exhibit. All will be offered the opportunity to create an informational display to explain the current realities of the recreational and cultural resources of the area. In addition, all residents of the region and the local organizations which represent them will be invited to present cultural activities and events in the center. Artifacts that were rescued from damage by the oil spill and or careless treatment/vandalism by oil spill workers will receive special attention in this exhibit.

EXPLANATION OF CHANGES IN CONTINUING PROJECTS:

Not Applicable.

POSED PRINCIPAL INVESTIGATOR IF KNOWN

The principal investigator/project coordinator has not yet been selected.

PRINCIPAL INVESTIGATOR QUALIFICATIONS

The qualified candidate will possess great leadership skill, knowledge of the Sound and its communities, ability to communicate effectively with village leaders, writing effectiveness, and college level training in biology, ecology or economic development/business; supervisory and project coordination experience also required.

OTHER KEY PERSONNEL:

None of the staff has been pre-selected. However, it is planned that staffing in addition to the Project Coordinator will consist of an Administrative Assistant/accounting staff person in FY 1, 8-9 Part time Community Eco-tourism representatives to be hired in the Spring/Summer (qualifications and selection based upon local criteria).

TERATURE CITED;

N/A

Pre-oil spill pristine "wilderness" status cannot entirely be regained, regardless of the amount funds poured into oil cleanup and sealife species regeneration activity. However, the potential for development of ecotourism built on appreciation for the natural beauty of the Sound, its precious wildlife and sealife balance, as well as good stewardship of wilderness and traditional cultural values of its Indigenous peoples, *can* be encouraged, supported and restored. We ask the Trustee Council to support this project to recover locally-driven wilderness and culturalheritage based tourism activity in the Prince William Sound.



FY 99 EXXON VALDEZ TRUS COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

Budget Category:	Authorized FY 1998	Proposed FY 1999	
Personnel Travel		\$152.0 \$117.0	
Contractual		\$344.5	
Commodities		\$5.5	
Equipment		\$12.8	LONG RANGE FUNDING REQUIREMENTS
Subtotal	\$0.0	\$631.8	Estimated Estimated
Indirect	1	\$30.4	FY 2000 FY 2001 FY 2002
Project Total	\$0.0	\$662.2	\$600.0 \$500.0
Full-time Equivalents (FTE)		30.0	
		1	ar amounts are shown in thousands of dollars.
Other Resources		\$574.0	\$1,000.0 \$1,000.0
	×		





October 1, 1998 - September 30, 1999

Pers	sonnel Costs:			Months	Monthly		Proposed
	Name	Position Description		Budgeted	Costs	Overtime	FY 1999
	Project Director	proj. planning & coord, liaison w/ PWS co		12.0	5.0		60.0
	-	and recovery players, dissemin data on					0.0
		community ecotourism dev. Options					0.0
			, 14,040 FRA THE FILL FRA				0.0
	Admin. Asst	administrative suppt, newsletter, project a	CCOLLEGE IN	10.0	2.0		20.0
							0.0
	Community	consult community members reg. potentia		8.0	16.0		72.0
	Specialists (p.t.)	area cult. tourism and wilderness rec dev	₩		(8x1000/ea)		
		liaison with Proj. Dir, local projects, etc					0.0
							0.0
							0.0
							0.0
		Subtotal		30.0	23.0	0.0	
					Per	sonnel Total	\$152.0
Trav	vel Costs:		Ticket	Round	Total	Daily	Proposed
	Description		Price	Trips	Days	Per Diem	FY 1999
							0.0
	Proj Dir travel		1.5	18	45	0.1	31.5
							0.0
Comm. Spec. and community conferencetravel			1.5	48	72	0.1	79.2
							0.0
	Consultant travel		0.3	8	15	0.1	3.9
							0.0
	Board travel		0.3	6	6	0.1	2.4
							0.0
							0.0
							0.0
							0.0
L	<u></u>		<u> </u>			Travel Total	\$117.0
				-			······
		Project Number: 00				F	FORM 4B
	FY 99			. .		F	Personnel
'		Project little: PVVS Cultural and E	co-tourism (Jenter			& Travel
1		Name: Kueuit Foundation					DETAIL
Pre	nared:					L	
1 1 1 1 1							



October 1, 1998 - September 30, 1999

Contractual Costs:			Proposed
Description			FY 1999
architectural and engineering to conform to building coo	plans des and env. Impact reqs.		30.0
50% of building renovation co printing audit copier maintenance	entract @ \$100/sq foot x 6000 sq ft. for auditorium, theater, spill history display		300.0 5.0 4.0 5.5
_ <u> </u>		Contractual Total	\$344.5
Commodities Costs:			Proposed
Description			FY 1999
postage			3.0
mailing materials			1.0
office supplies			1.0
other			0.5
		Commodities Total	\$5.5
FY 99 Prepared:	Project Number: 99 Project Title: PWS Cultural and Eco-tourism Center Name: Kueuit Foundation	F Cor Col I	ORM 4B ntractual & mmodities DETAIL

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FRU COUNCIL PROJECT BUDGET

October 1, 1998 - September 30, 1999

New Equipment Purchases:		Number	Unit	Proposed
Description		of Units	Price	FY 1999
				0.0
personal computers with modems		3	1.0	3.0
printer, color ink jet		1	0.3	0.3
printer, laser		1	2.0	2.0
phone and intercom system		1	1.0	1.0
audio visual equipment			5.0	5.0
office furniture			1.5	1.5
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
I nose purchases associated with rep	placement equipment should be indicated by placement of an R.	New Equ	ipment I otal	\$12.8
Existing Equipment Usage:			Number	
Description			of Units	
N/A				
FY 99	oject Number: 99 oject Title: PWS Cultural and Eco-tourism Center ame: Kueuit Foundation	· · · · · · · · · · · · · · · · · · ·	F	ORM 4B quipment DETAIL

Prepared:Apr. 15, 1998

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99521 LOWER COOK INLET SALMON ECOLOGY PILOT STUDY

A) Abstract

Improving existing knowledge of the survival mechanisms of pink, and sockeye salmon in South Eastern Lower Cook Inlet (LCI) is the main goal of the Lower Cook Inlet Salmon Ecology Pilot Study (LCISEPS). The main goal of this pilot study will be to sample outmigrating salmon smolts for growth, marks (coded wire tags), stomach contents (for prey species identification) and timing (days since release or outmigration). By sampling these variables the study will document the growth rate and outmigration timing of these two important salmon species in the spring of 1998. Opportunistic sampling of smolts will occur when feasible with hopes of learning important staging areas and prefered beach habitat for both species. Plankton and sea surface temperature records will be collected for possible future correlation's with observed growth. Both pink and sockeye salmon are essential components of the subsistence and commercial fisheries in the Port Graham and English Bay drainage's (Port Graham Subdistrict).

B) Background

The subsistence fishery continues to be very important to the local villagers as it has been since the villages were first inhabited. Subsistence uses in the early 1980's showed that in Nanwalek, salmon made up 38% of the diet with 39.6% and 15.2% of the diet made up of other fish (mainly halibut) and marine mammals respectively. The useage for the same period in Port Graham was 38%, 39.6% and 15.2% respectively (Stanek, 1985, Technical Paper #104, ADF&G).

The sockeye salmon that this study will focus on originate from the English Bay River drainage and associated lakes near the Alutiiq native village of Nanwalek, Alaska (formerly English Bay). Nanwalek which is located near the southwestern tip of the Kenai Peninsula on lower Cook Inlet (59° 20'N, 151° 45'W) approximately forty kilometers southwest of Homer and is situated at the base of a narrow spit of land at the head of English Bay.

The English Bay Sockeye Enhancement Project officially began in 1990 when the Chugach Regional Resources Commission (CRRC) provided funding for the Alaska Department of Fish and Games (ADF&G), Fisheries Rehabilitation, Enhancement and Development Division (FRED), to develop a fry stocking program that would supplement wild fry production and help rebuild the depleted English Bay Sockeye run. Lake fertilization was not considered an option for increasing zooplankton production due to the rapid flushing rate of the drainage. After many meetings and discussions, it was decided that the principle goals for the project would be to use pen rearing techniques to produce over one million sockeye smolt annually. The fish are reared until release late in the fall when competition for food in the lakes would be at a minimum and low temperatures decrease feed requirements. Monitoring of the sockeye smolt out-migration was first started in 1988 and has occurred annually since then with many improvements.

An estimated 100,000 to 200,000 sockeye smolts will outmigrate from the English Bay river in May and June of 1998. Of these, approximately 50,000 to 100,000 will be enhanced fish released from Nanwalek Sockeye Project net pens which were release in the fall of 1997. Project smolts will be identified by size seperation only since no coded wire tagging was done on these fish. Project smolts are about 3 times larger than the wild smolts and the only overlap will be from a normally small percentage of two year wild smolts.

The pink salmon that will be studied are from the Port Graham River stock. The hatchery is located in

the village and namesake bay of Port Graham (Palu'vik), which is situated on the northern shore of Port Graham about four miles east of Russian point and four miles south of Point Pogibshi near the confluence of Lower Cook Inlet and the outer reaches of Kachemak Bay. The neighboring village of Nanwalek is just around the point. Port Graham is located near the southwestern tip of the Kenai Peninsula on lower Cook Inlet approximately forty kilometers southwest of Homer (59° 20'N, 151° 45'W).

The Port Graham Hatchery program began in 1989 when the Port Graham Village Council worked together with the Chugach Regional Resources Commission (CRRC) to provide construction and operating funds for a hatchery to rebuild local pink salmon runs and provide for economic development opportunities for village residents. The hatchery program started out using a scientific/educational permit and then applied for a Private Non-profit Hatchery permit on July 3, 1991. The main hatchery building was located in the old cannery building until it was destroyed by fire on January 13, 1998 were both the pink salmon and sockeye eggs/alevin were also lost. The recently added rearing building for a coho enhancement program which is just beginning it's second year of operation survived the fire and is now the temporary hatchery until a new facility is built.

Documenting the growth, feed organisms and outmigration timing variables will help support the above EVOS framework issues by providing important growth and migration timing information about pink and sockeye salmon smolts from the Port Graham/English Bay area. Additional information regarding prey organisms, predator interactions, staging areas and preferred staging area habitat will be collected and analysed.

C) Objectives/Hypotheses

The main objective of this pilot project is to define observed growth, stomach content and outmigration timing during the early life history of pink and sockeye salmon originating from the Port Graham and English Bay watersheds.

The specific study plan goals are as follows:

- 1. Conduct a literature review for existing information relating to various levels and components of ecosystem fluctuations that control the marine survival responses of pink and sockeye salmon in Alaska and Canadian marine environments.
- 2. Characterize preferred marine habitat (water quality, preferred beach types, plankton species diversity and abundance) in which the pink and sockeye salmon are found during the first three months of life in lower cook inlet.
- 3. Document observed growth rates and outmigration timing of wild and enhanced fish since release.

Major hypotheses:

1. Outmigrating juvenile pink and sockeye salmon can be successfully captured and sampled for growth and outmigration timing in South Eastern Lower Cook Inlet.

D) Methods/Analyses

The literature review will be conducted primarily by internet and bulletin board searches. Particular emphasis will be placed on procedures and equipment used in juvenile salmon capture projects in near shore marine waters of Alaska and Canada. Additional information will be collected regarding study plans, results and methodologies for salmon ecology studies conducted in the early marine environment. This information will be summarized and used in the "where do we go from here" section in the

conclusion of the final report.

The early marine habitat will be characterized by documenting smolt abundance, beach habitat, depth and water quality of observed staging areas. The concentrations and apparent staging duration of smolts will be the key factor in determining principle staging areas. These habitats will be described using similar zonation and descriptive terminology used in the APPRISE study done in South East Alaska. Basic water quality sampling will be conducted including Salinity, Temperature and Dissolved Oxygen measurements (surface to 3 meters) and sechi depth readings.

In order to document growth rates and outmigration timing of the pink and sockeye smolts, two to four fixed "offshore" sample sites will be established for fixed tows with the trawl gear. These sites will be used primarily to systematically sample smolt "traffic" through a specific coastal segment. The fixed sites will serve as standardized sampling areas that the smolts continually pass through. This will facilitate achieving a sense for the migrational timing through the area by comparing catch numbers and compositions through time. Opportunistic sampling (trawl sets) will also be conducted when large concentrations of smolts are observed. The exact location of the offshore sites will be determined and probably modified based on early initial tow success, observed fry concentrations and consulting with experts such as village elders and fishers, Bill Smoker and Ted Cooney (UAF), Alex Werthiemer (NMFS), and local ADF&G staff and pilot study project personnel. The offshore sites will be within 100 meters of and oriented to the shoreline with the transect lines covering depths of 10 to 25 meters. Normal daylight tows will be made every ten days from late April to late September using a 6.1 meter wide by 3.0 meter deep surface trawl. Once a month tows will be done at night instead of the normal daytime tow.

Two replicate tows will be made at each site using two boats (probably a contracted seine boat and seine skiff) and a trawl speed of 65 to 70 cm/s for 10 minutes. When the tow is complete a third boat (skiff) will be used to close the cod end of the trawl by retrieving and pulling a trailing purse line. The cod end will be hauled into a tote on the large vessel and the fish capture will be identified to species, counted and sampled. One hundred juveniles will be sampled for length, weight and condition factor and then retained and preserved for stomach sampling (formalin). If the catch of target juvenile salmon is more than 500 fish, the catch will be subsampled and weighed for enumeration. Some of the sockeye smolts will be coded wire tagged fish from the enhancement project.

For offshore and any random non site samples collected, the number of days in transit for pink and sockeye salmon juveniles will be determined from recoveries of marked fish. Growth rates will be determined for measured changes in length, weight and condition factors (relationship between length and weight) over the period of time since the fish were released. Migratory patterns and timing information will be plotted on maps and charts (GIS plots and marine charts) to calculate estimated travel trajectories and staging area residencies based on all data sets. Opportunistic sampling will provide additional migratory detail necessary to establish migration routes and timing.

E) Logistics

The program goals will be accomplished as follows:

1. Literature Search

This initial segment will be collected primarily by electronic means (see methods section) and will focus on collecting pertinent literature and data which will facilitate this programs objectives and be used for the conclusion section of the final report.

2. External Project Coordination

Any other relevant projects will be identified and appropriate lead personnel will be contacted with avenues of cooperation and coordination being explored and developed as appropriate.

Lower Cook Inlet Salmon Ecology Pilot Study



3. Personnel Acquisition and Structuring

The Principle Investigator (PI) and Co-Investigators (CI's) will be set up with the appropriate supportive staff structure.

4. Pink and Sockeye Salmon Early Life History

- Local Public Preliminary Presentation and Traditional Review/Input Meeting
- Existing Data Assessment and Consolidation
- Establish Offshore Sites
- Fry/Smolt Capture and Sampling
- Fry/Smolt Predation Sampling
- Data Acquisition and Synthesis
- Secondary Presentation and Traditional Review/Input Meeting
- Draft Preliminary Report (DPR)
- Initial Peer Review and Comments for DPR
- Draft Final Report

F) References

Barnard, D. R. 1981. Prey relationships between juvenile pink and chum salmon in Prince William sound, Alaska. M.S. Thesis, University of Alaska, Fairbanks. 72 pg.

Barraclough, W.E., D.G. Robinson, and J.D. Rulton. 1968. Data record. Number, size composition, weight, and food of larval and juvenile fish caught with a two boat surface trawl in Saanich Inlet, 23 April - 21 July 1968. Fish. Res. Bd. Can. MS Rep. 1004. 305pg.

Mortensen, D.G. and A. C. Wertheimer. 1988. Residency and growth of juvenile pink salmon (Oncorhynchus gorbuscha) in Auke Bay. 1987 APPRISE report.

Jewett, S.C. and Stark, T.C. 1994. Food and habitat utilization of juvenile hatchery pink salmon (<u>Oncorhynchus gorbuscha</u>) in Port Valdez, Alaska: 1989-92. 124 pg.

Willete, T.M. and Cooney, R.T. 1996, Processes affecting the survival or juvenile pink salmon in Prince William Sound. Sound Ecosystem Assessment.



G) Budget

Lower Cook Inlet Salmon Ecology Pilot Study

	EVOS	CRRC	AK State	Total
Personnel				· · ·
Paul McCollum, 6 mos	12,000	12,000		24,000
Bob Macheno, 4 mos	12,000	0		12,000
William Smoker, 1 mos	4,750	0	4,750	9,500
Carol Kvasnikoff, 4 mos	6,000	12,000		18,000
Ephim Anahanak, 4 mos	6,000	12,000		18,000
Jerry Robart, 4 mos	6,000	12,000		18,000
Total Personnel	46,750	48,000	13,000	99,500
Travel		<u>-</u> -		<u> </u>
4 R/T Juneau-field office	2 000		+	
2 R/T Fairbanks-field office	1,000			
12 R/T Homer-field office		1 200		<u> </u>
1 R/T National Meeting	1 500	1,200		
Total Travel	4 500	1 200		\$5 700
Services				
Sample Processing	8,000			
Communications				
Publications/page charges				
Equipment maintenance		· · · · · · · · · · · · · · · · · · ·		
Site Prep				· <u> </u>
Total Services	8,000			\$8,000
Supplies				
Glassware		500	-	
Chemicals		250		
Office/Computer		250		· · · · · ·
Tagging supplies		500		
Field supplies		2500		
Total Supplies		4,000		\$4,000
Equipment				
Tagging Equipment		1.000		
Surface Trawl	2 000	1,000		
CTD lesse				
Vertical Water Sampler	1,000			·
Thermal Marking	2 000		+	
Plankton Sampling Fouin		1 000		
Total Equipment	6.000	12.000		
Other Costs				
Contract Vessel @ 500/day	5,000	<u> </u>		\$5,000
Total Direct Costs	\$70.250	\$65 200	\$4,750	\$140 200
Indirect Costs (50% MTDC)	35125	32 600	2 375	70 100
Total Project Costs	<u>\$105 375</u>		\$7 125	<u>\$210.300</u>
Total Equipment Other Costs Contract Vessel @ 500/day Total Direct Costs Indirect Costs (50% MTDC) Total Project Costs	6,000 5,000 \$70,250 35125 \$105,375	12,000 12,000 \$65,200 32,600 \$97,800	\$4,750 2,375 \$7,125	\$18,00 \$5,00 \$140,2 70,10 \$210,3

H) Project Time-line	1997 - 1998 (FFY 98)				
	Est. Start	Est. Date	lrst	2nd	3rd	4th
Project Activities	Date	Finished	Quarter	Quarter	Quarter	Quarter
Review and Verify Equipment and Supplies Needed	March 15	May 1				
Order Equipment and Supplies	April 1	May 15				
Literature Search	April 1	June 1				
External Project Coordination	April 1	June 1				
Personnel and Structuring (Who's responsible for what)	April 1	May 15				
Early Life History Sites Established	April 1	April 15				
Preliminary Presentation and Traditional Review/Input Meeting	May 1					
Existing Data Assessment and Consolidation	April 1	June 15				
Early Life History Off Shore Sampling	May 1	Sept. 30				
Secondary Presentation and Traditional Review/Input Meeting	June 15					
Data Acquisition and Synthesis	Sept. 1	Dec. 15				
Reports and Data Analysis						
Data Compilation	Oct. 15	Nov. 15				
Statistical Analysis and Visualization of Data	Oct. 15	Nov. 15				
Multi-Dimensional Matrix Input	Oct. 15	Nov. 15				
Mapping and Plotting	Oct. 15	Nov. 15				
Statistical Processing	Oct. 15	Nov. 15				
Visualization Processing	Oct. 15	Nov. 15				
Presentation and Traditional Review/Input Meeting	Nov 15					
Draft Preliminary Report (DPR)	Dec 15					
Initial Peer Review and Comments for DPR	Dec 15	Jan 15				
First Quarterly Report	Jan 1					
Second Quarterly Report	April 1					
Third Quarterly Report	July 1					
Fourth Quarterly Report	Oct. 1					
Final Project Report Completion	Feb 15					



To: Company:	EVOS
Fax number: Business phone:	+1 (907) 276-7178
From: Fax number: Business phone: Home phone:	Paul McCollum +1 (907) 235-0588
Date & Time: Pages: Re:	4/15/98 5:11:08 PM 4 Proposal for Nanwalek Sockeye Project

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Hi,

Please accept this proposal framework. If it looks like the trustees would be interested, we can provide more detail, budgets etc. Thankyou Carol Kvasnikoff Nanwalek Sockeye Project