PROPOSAL SIGNATURE FORM

THIS FORM MUST BE SIGNED BY THE PROPOSED PRINCIPAL INVESTIGATOR AND SUBMITTED ALONG WITH THE PROPOSAL. If the proposal has more than one investigator, this form must be signed by at least one of the investigators, and that investigator will ensure that Trustee Council requirements are followed. Proposals will not be reviewed until this signed form is received by the Trustee Council Office.

By submission of this proposal, I agree to abide by the Trustee Council's data policy (*Trustee Council Data Policy**, adopted July 9, 2002) and reporting requirements *(Procedures for the Preparation and Distribution of Reports***, adopted July 9, 2002).

PROJECT TITLE: **The *Exxon Valdez* Hydrocarbon Database**

Printed Name of PI: Bonita Nelson _____

Signature of PI: _____ Date _____

Printed Name of co-PI: Jeff Short _____

Signature of co-PI: _____ Date _____

Printed Name of co-PI: _____

Signature of co-PI: _____Date _____

Note: Straley of UAS and Quinn of UAF will be submitting this proposal with their agency approvals.

* **www.evostc.state.ak.us/Policies/data.htm**

** **www.evostc.state.ak.us/Policies/Downloadables/reportguidelines.pdf**

Trustee Council Use Only Project No.__ _____ Date Received: _____

FY07 INVITATION
PROPOSAL SUMMARY PAGE

Project Title: **The *Exxon Valdez* Trustee Hydrocarbon Database**

Project Period: November 2006 to October 2008

Proposers: Bonita Nelson and Jeff Short of Auke Bay Lab, 11305 Glacier Hwy, Juneau, AK 99801: bonita.nelson@noaa.gov, (907) 789-6071; jeff.short@noaa.gov, (907) 789-6065

Study Location: The project resides at the Auke Bay Laboratory in Juneau, Alaska , the service provides information about the entire spill area via the internet .

Abstract: This project is an on-going service project providing data and sample archiving services for all samples collected for hydrocarbon analysis in support of *Exxon Valdez* Oil Spill Trustee Council projects. These data represent samples collected since the oil spill in 1989 to the present and include environmental and laboratory Response (National Resource Damage Assessment - NRDA) and Restoration data. Additionally, we provide interpretive services for the hydrocarbon analysis, provide public releases of the database (including FOIA requests) and maintain the hydrocarbon sample archives

Funding:

EVOS Funding Requested (Including G&A) for **FY07 = $ 30.1K**

Non-EVOS Funds to be used in **FY07 = $ 18.2 K**

Date: 28 July, 2006

THE *EXXON VALDEZ* TRUSTEE HYROCARBON DATABASE

I. NEED FOR THE PROJECT

A. Statement of Problem

The *Exxon Valdez* Trustee Hydrocarbon Database is the archive for all of the sample collection and analytical data collected for environmental and laboratory projects associated with hydrocarbon analysis for Trustee funded projects from 1989 to the present. Currently the database base contains sample collection information for 52,000 samples and the chemical analytical data for 17,000 of those samples. This database has been continuously funded by the Trustee Council since 1989 (Technical Services - #1 continuation with project number –290) and provides investigators and other interested parties with the opportunity to retrieve sample and analysis information which has been quality controlled and archived under a chain of custody protocol. This service project also provides for the storage and disposal of archival environmental samples, interpretation of hydrocarbon results and a user friendly public interface which accesses all of the analyzed data. Although the number of Trustee funded projects requiring hydrocarbon analysis have diminished over time, the need for the archived data as well and analyses concerning lingering oil distribution is of increasing interest. The public version of the database (EVTHD) needs revision to be fully operational with all versions of Windows software and internet accessible. This project is designed to maintain the archival database and its associated storage and interpretative tasks as well as generate a new version of the web based interface to query, view and access analyzed hydrocarbon information.

B. Relevance to Program Goals and Scientific Priorities

Archiving of the Trustee hydrocarbon sample data ensures that these data are available to principal investigators, government agencies, and other interested public on a timely basis. The database allows direct comparison of Restoration and NRDA data because of its inventory of hydrocarbon samples and information about their collection, storage and analysis. The continued use of the methods for hydrocarbon data evaluation and interpretation developed for the *Exxon Valdez* NRDA samples will insure direct comparability of future with previous samples. This will substantially increase the probability that temporal trends in these data will be detected when actually present. Application of the petroleum weathering model developed under this project (Short and Heintz, 1997) has been used to compare coal samples and Katalla seep with Prince William Sound background samples, and has identified coal as the a biologically non-available sources. The Trustee Council Data Policy requires that data produced by Trustee funded projects be made available to other scientists and to the general public and this project continues to facilitate that goal. This database service is expected to have activity as long as hydrocarbon data are collected and requested

II. PROJECT DESIGN

A. Objectives

1. Continue maintenance of the Trustee hydrocarbon database by updating the database with new information and continue the sample archiving procedures developed under NRDA, Restoration and GEM protocol.

2. Continue interpretation of hydrocarbon data, including new data produced for the effects of lingering oil for principal investigators and resource managers and for syntheses products as needed.

3. Provide public release of the analyzed hydrocarbon data on CD-ROM and via the internet.

B-C. Procedural and Scientific and Statistical Methods

Data associated with hydrocarbon samples are added to the existing Trustee hydrocarbon database. The samples and data currently reside at the Auke Bay Laboratory of NMFS. Incoming samples are inventoried and stored in laboratory freezers, and sample collection information is entered into the database. Samples are released for hydrocarbon analysis after ABL receives a written request from the responsible project leader. Hydrocarbon data, reported by the analytical laboratory, are matched to the sample collection information and all the data are checked for errors and electronic copies are sent to principal investigators or other requesters. A new user interface for the the public release of the database will be developed using *Exxon Valdez* Oil Spill of 1989: State/Federal Trustee Council Hydrocarbon Database 1989-1995 (EVTHD) as a template. This will continue to include data collected from Trustee funded projects including sampling and analytical quality control procedures

The petroleum weathering model developed under this project has been used to reject the hypothesis that the hydrocarbons comprising the background PAH source are derived from the Katalla oil seep. Analysis of sediment and mussel samples collected from locations near the Katalla oil seep as well as coal deposits east of PWS supports the conclusion that PAH derived from coal characterize the background hydrocarbon signal (Short et al., 1999). We will continue to use this information and analyses when necessary to demonstrate the generality of the weathering model with other oil sources and the absence of a similar weathering process in coal.

The Auke Bay Laboratory will continue to keep all environmental samples collected for hydrocarbon analysis under all phases of the oil spill process frozen in locked storage.

D. Description of Study Area
The database is located in Auke Bay, Alaska and covers data collected from the spill area.

E. Coordination and Collaboration with Other Efforts
This project will combine the skills and location advantage of researchers from Auke Bay Laboratory as well as other interested parties.

III. SCHEDULE

A. Project Milestones
The primary objective of this project is to provide an ongoing service. An updated database version of newly analyzed data is completed once a fiscal year and included in the annual report.

B. Measurable Project Tasks
FY 07, 1st quarter (October - December 31, 2006)
Add sample data collected in FY06

FY 07, 2-3 rd quarter (January –June, 2)
January Workshop meeting, data entered as necessary, generate new EVTHD front end

FY 07, 4th quarter (June - October, 2007)
Prepare annual report

IV. RESPONSIVENESS TO KEY TRUSTEE STRATEGIES

A. Community Involvement and Traditional Ecological Knowledge (TEK)
This service project does not involve TEK.

B. Resource Management Applications
The data in the hydrocarbon database will be readily available to all resource managers if requested.

V. PUBLICATIONS AND REPORTS
Annual release of updated CD-ROM of EVTHD and manual

VI. PROFESSIONAL CONFERENCES
The AK Marine Sciences Symposium Trustee meetings will be attended by the principal investigators

One meeting is required, an annual Quality Assurance Control meeting attended by ABL=s Senior Analytical Chemist. The results of an international calibration exercise by participant is reviewed for the integrity and credibility of chemical analyses

Literature Cited

Short, J. W., K.A. Kvenvolden, P.R. Carlson, F. D. Hostettler, R. J. Rosenbauer, & B. A. Wright, 1999. Natural Hydrocarbon Background in Benthic Sediments of Prince William Sound, Alaska: Oil vs. Coal. Environ. Sci. Technol. 33:34-42.

Short, J. W., and R. A. Heintz. 1997. Identification of *Exxon Valdez* oil in sediments and tissues from Prince William Sound and the Northwestern Gulf of Alaska based on a PAH weathering model. Environ. Sci. Technol. 31:2375-2384.

BUDGET JUSTIFICATION – FY 2007 = $30.1K

Personnel: 7.5K : 1 month salary for Bonita Nelson for database oversight and maintenance

In-kind contribution = 18.2K

Travel: 2.5K
Nelson will travel to the Marine Sciences Symposium
Chemist Marie Larsen will travel to the NIST standards meeting

Contractual: 14K
Contract labor will be solicited to generate new front-end to public database release and to assist in clerical and physical labor associated with sample storage and data verification

Commodities: 4K
Software, computer support and office/storage supplies will be purchased as necessary.

Trustee Agency G&A: $2.1K

CURRICULUM VITAE

Curriculum Vitae for Bonita D. Nelson

National Marine Fisheries Service, Auke Bay Laboratory email: **bonita.nelson@noaa.gov**
11305 Glacier Highway Phone: (907) 789-6071
Juneau, AK 99801

Education:

MS 1986, University of Alaska-Fairbanks, Juneau, AK (Fisheries)
BS 1979, University of Illinois, Urbana, IL (Ecology, Ethology , Evolution)

Professional Experience

Fisheries Biologist, 1986-present, Auke Bay Laboratory.

Principal Co- Investigator for *Exxon Valdez* Oil Spill Trustee Council "The Exxon Valdez Hydrocarbon Database – project 290" from 1995 to the present

Publications related to proposed project

Annual Reports from 1995 – present for "The Exxon Valdez Oil Spill Hydrocarbon Database Project 290.

Other Experience:
Database manager of the Trustee hydrocarbon data for11 years. Responsibilities include: supervision of data entry of sample and analytical data; processing and dissemination of data after interpretation by chemist; database management including data retrieval for production of the public versions of the database. Nelson has designed and managed databases as well as analyzed data for the radio telemetry and other projects at the Auke Bay Laboratory for 15 years.

Collaborators: Ron Heintz, NOAA- Auke Bay Laboratory

Curriculum Vitae for Jeffrey W. Short

National Marine Fisheries Service, Auke Bay Laboratory email: jeff.short@noaa.gov
11305 Glacier Highway Phone: (907) 789-6065
Juneau, AK 99801

Education:
Ph.D. Fisheries Biology, University of AK- Fairbanks, 2005. Thesis title:"Seasonal Variability of Pristane in Mussels *(Mytilus trossulus*) in Prince Willam Sound, AK."

Master of Science Physical Chemistry, Univ. of California at Santa Cruz, 1982

Bachelor of Science, Biochemistry and Philosophy, Univ. of CA at Riverside, 1973

Other Experience:

1989 - Present: Established and managed the hydrocarbon analysis facility at ABL to analyze hydrocarbon samples generated by the *Exxon Valdez* NRDA effort (about 20% of these samples were analyzed at ABL).
1989 - 1992 : Principal Investigator, Exxon Valdez project Air/Water #3; Determination of petroleum hydrocarbons in seawater by direct chemical analysis and through the use of caged mussels deployed along the path of the oil spill.
1991 - 1992 : Principal Investigator, Exxon Valdez project Subtitle #8 ; Development of computer-based statistical methods for global examination of sediment and mussel hydrocarbon data produced for the Exxon Valdez NRDA effort for systematic bias, and for identification of probable sources of hydrocarbons. In addition, this project produced both hard-copy and computer display maps of all the sediment and mussel hydrocarbon data.
1994- 2001 Project leader for analysis of Trustee funded project :Pristane Monitoring in Mussels.
2001- Present: Project leader for Trustee funded project: Evaluation of Lingering Oil in the Intertidal.

Professional Experience:

Current	Research Chemist (since 19833)
Research Interests	(1) Oil pollution source identification, fate, and effects; (2) Environmental contaminant transport processes; (3) Effects of pristane on marine ecosystem structure
Professional Affiliations	American Chemical Society, American Fisheries Society, Society of Environmental Toxicology and Chemistry, AAAS
Awards	Bronze Medal, U. S. Department of Commerce, "For scientific research and publications describing the long-term, insidious effects of oil pollution on fish embryos at parts per billion levels".
Current Committees	- Alaska Regional Response Team's Science and Technology Committee - Lingering Oil Committee, Exxon Valdez Trustee Council
Reviewer for	- Exxon Valdez Trustee Council - Prince William Sound Regional Citizens' Advisory Council - Cook Inlet Regional Citizens' Advisory Council - National Research Council (USA) - Research Council of Norway - Arctic & Marine Oil spill Program Technical Seminars - Alaska Sea Grant - Environmental Science and Technology - Environmental Toxicology and Chemistry - Marine Environmental Research - National Wildlife Federation - San Francisco Bay Institute
International Collaborations	Sakhalin Research Institute of Fisheries and Oceanography (Russia) Rogaland Research Institute (Norway) Queen's University (Canada)

Five Recent Publications Related to the Lingering Oil Project:

Short, J.W., Maselko, J.M., Lindeberg, M.R., Harris, P.M., Rice, S.D. 2006. Vertical Distribution and Probability of Encountering Intertidal Exxon Valdez Oil on Shorelines of Three Embayments within Prince William Sound, Alaska. Environmental Science & Technology 40(12):3723-3729.

Irvine, G.V., D.H. Mann, and **J.W. Short**. (2006). Persistence of ten-year old *Exxon Valdez* oil on Gulf of Alaska beaches: The importance of boulder armoring. *Marine Pollution Bulletin(in press)*.

Payne, J.R., W.B. Driskell, M.R. Lindeberg, W. Fournier, M.L. Larsen, **J.W. Short**, S.D. Rice, and D. Janka. 2005. Dissolved- and particulate-phase hydrocarbons in interstitial water from Prince William Sound intertidal beaches containing buried oil thirteen years after the Exxon Valdez Oil Spill. 2005 International Oil Spill Conference, American Petroleum Institute.

Short, J. W., Lindeberg, M. R., Harris, P. M., Maselko, J. M., Pella, J. J., and Rice, S. D. 2004. An estimate of oil persisting on beaches of Prince William Sound, 12 years after the *Exxon Valdez* oil spill. Environmental Science and Technology, 38:19-26.

Irvine, G.V., D.H. Mann, **J.W. Short**. 1999. Multi-year persistence of oil mousse on high energy beaches distant from the *Exxon Valdez* spill origin. Marine Pollution Bulletin, 38(7): 572-584.

PERSONS WITH WHOM DR. SHORT HAS COLLABORATED ON A PROJECT OR PUBLICATION WITHIN THE LAST FOUR YEARS:

Brenda Ballachey, Alaska Science Center, USGS
James Bodkin, Alaska Science Center, USGS
Michel Boufadel, Temple University
Ted Cooney, University of Alaska Fairbanks
Roger Green, University of Western Ontario
Lew Haldorson, University of Alaska Fairbanks
Doug Helton, Damage Assessment Center, NOAA
Peter Hodson, Queen's University, Canada

DATA MANAGEMENT AND QUALITY ASSURANCE/ QUALITY CONTROL STATEMENT

Discuss the characteristics of the data that your project will produce:

(a) Electronic metalife data files (filename: datbase290 with the following extensions: .faqhtm; .htm;.sqml and .xml) emailed to EVOS office

(b) The data descriptions, chain of custody procedures, chemical analysis procedures for hydrocarbon analysis and analytical instrumentation are described in complete detail in:

Larsen, M., Holland, L., Fremgen, D., Lunasin, J., Wells, M., Short, J. 2003. Standard Operating Procedures for the Analysis of Petroleum Hydrocarbons in Seawater, Marine Sediments, and Marine Faunal Tissue at the Auke Bay Laboratory. Auke Bay

Laboratory, Alaska Fisheries Science Center, National Marine Fisheries Service, NOAA, 11305 Glacier Highway, Juneau, Alaska.

and

Short, J., Heintz,R., Nelson, B., Maselko, J., Kendziorek, M., Carls, M., Korn, S. User Manual: Exxon Valdez Oil Spill of 1989: State/Federal Trustee Council Hydrocarbon Database. Annual Report for project 290.

This SOP includes chain-of-custody, calculation methods and data storage procedures, in addition to the details of the analytical procedures. Calculation algorithms are either proprietary and part of the analytical hardware, or are available as Excel spreadsheets. These procedures we use for data collection, chain of custody and analysis have been in place since the Trustee Council started to gather hydrocarbon data from the spill. All of the data in this database is only from Trustee funded projects and follows the protocol established in 1989 and documented in the above citations. Since this project is only involved in data collection, sample transportation and analytical analysis of hydrocarbon sample, the explanation of the processes will be longer than the QA/QC statement allows.

METADATA:

Identification_Information:
Citation:
Citation_Information:
Originator: Bonita Nelson
Publication_Date: 20060910
Title: The Exxon Valdez Oil Spill Database
Geospatial_Data_Presentation_Form: atlas
Publication_Information:
Publication_Place: Juneau, Alaska
Publisher: NOAA Auke Bay Lab
Description:
Abstract:
The Exxon Valdez Trustee Hydrocarbon Database is the archive for all of the sample collection and analytical data collected for environmental and laboratory projects associated with hydrocarbon analysis for Trustee funded projects from 1989 to the present. Currently the database base contains sample collection information for 52,000 samples and the chemical analytical data for 17,000 of those samples. This database has been continuously funded by the Trustee Council since 1989 until 2006.
Purpose:

The purpose of this database is to archive hydrocarbon sample and analysis information collected for Trustee funded projects.
Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 19890323
Ending_Date: 20100101
Currentness_Reference: publication date
Status:
Progress: In work
Maintenance_and_Update_Frequency: None planned
Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: 148.71027
East_Bounding_Coordinate: 145.61536
North_Bounding_Coordinate: 61.2702
South_Bounding_Coordinate: 59.76364
Keywords:
Theme:
Theme_Keyword_Thesaurus: Database
Theme_Keyword: Ecological Dynamics
Access_Constraints: Only analyzed data which has passed AQ/QC data is released
Use_Constraints: None

Spatial_Data_Organization_Information:
Direct_Spatial_Reference_Method: Point

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Bonita Nelson
Contact_Organization: NOAA Auke Bay Lab
Contact_Address:
Address_Type: Mailing and Physical Address
Address:
Auke Bay Lab 11305 Glacier Highway
City: Juneau
State_or_Province: Alaska
Postal_Code: 99821
Country: USA
Contact_Voice_Telephone: 907-789-6071
Distribution_Liability: None

Metadata_Reference_Information:
Metadata_Date: 20060910

Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Bonita Nelson
Contact_Organization: NOAA Auke Bay Lab
Contact_Address:
Address_Type: Mailing and Physical Address
Address:
Auke Bay Lab 11305 Glacier Highway
City: Juneau
State_or_Province: Alaska
Postal_Code: 99821
Country: USA
Contact_Voice_Telephone: 907-789-6071
Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

Generated by mp version 2.6.0 on Thu Aug 10 09:32:25 2006

2007 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2006 - September 30, 2007

Budget Category:	Authorized FY 2006	Proposed FY 2007
Personnel	$10.5	$7.5
Travel	$3.9	$2.5
Contractual	$4.5	$14.0
Commodities	$1.5	$4.0
Equipment	$0.0	$0.0
Subtotal	$20.4	$28.0
General Administration	$1.8	$2.1
Project Total	$22.0	$30.1
Full-time Equivalents (FTE)		0.1
	Dollar amounts are shown in thousands of dollars.	
Other Resources		

Comments:
The Auke Bay Laboratory will provide one month of Marie Larsen's salary (8.7K) and one half month of Jeff Short's salary (6.2 K) and .5 month of Jacek Maselko's salary (3.3K) for a total of 18.2K as well as storage for all paperwork and environmental samples for database related materials (5K).

FY07

Prepared: 7/27/06

Project Number: 070290
Project Title: The *Exxon Valdez* Trustee Hydrocarbon Database
Agency: NOAA

2007 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 2006 - September 30, 2007

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	
Name	Position Description					
Bonita Nelson	Fishery Biologist	ZPIII	1.0	7.5		
	Subtotal		1.0	7.5	0.0	
						Personnel Total

Travel Costs:	Ticket Price	Round Trips	Total Days	Daily Per Diem	
Description					
Ak marine Science Symposium, Nelson	0.4	1	2	0.2	
NIST qualifying meeting, Larsen	0.9	1	4	0.2	
					Travel Total

FY07

Project Number: 070290
Project Title: The *Exxon Valdez* Trustee Hydrocarbon Database
Agency: NOAA

Prepared: 7/27/06

2007 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 2006 - September 30, 2007

Contractual Costs:	
Description	
Development of front end for ACCESS database (EVTHD) Data verification, freezer maintenance, disposal of samples	
When a non-trustee organization is used, the form 4A is required. **Contractual Total**	
Commodities Costs:	
Description	
Software	
Commodities Total	

FY07

Prepared: 7/27/06

Project Number: 070290
Project Title: The *Exxon Valdez* Trustee Hydrocarbon Database
Agency: NOAA

2007 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET
October 1, 2006 - September 30, 2007

New Equipment Purchases:	Number of Units	Unit Price	
Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.		**New Equipment Total**	

Existing Equipment Usage:	Number of Units	
Description		
Walk in storage freezer -80 ©	1	
File cabinets	1	
Computer	1	

FY07

Project Number: 070290
Project Title: The *Exxon Valdez* Trustee Hydrocarbon Database
Agency: NOAA

Prepared: 7/27/06