I. FY07 Invitation: Narrative Forms for Proposals

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: Herring Data and Information Portal

Printed Name of PI: Steve Moffitt_____

Signature of PI: _____ Date _____

Printed Name of co-PI: Rob Bochenek_____

Signature of co-PI: _____ Date _____

Printed Name of co-PI: _____

Signature of co-PI: _____ Date _____

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

Trustee Council Use Only Project No. 070822 Date Received: _____

FY07 INVITATION
PROPOSAL SUMMARY PAGE

Project Title: Herring Data and Information Portal

Project Period: FY07

Proposer(s): Steve Moffitt

Study Location: Prince William Sound

Abstract: This project will consolidate, document, and enter data sets, metadata, and other electronic resources into a web portal. The web portal will provide public assess to information, data, and GIS visualizations. Scientist and researchers will utilize the web portal as a resource to assist in consolidating, accessing and synthesizing herring data. This project will also develop an ArcPad application for collecting herring aerial survey data directly into a GIS format. The project was conceived during an EVOS sponsored workshop in April 2006 that was tasked to identify Prince William Sound herring data gaps and develop restoration or research projects to help herring recovery. Participants indicated that knowledge of the spatial and temporal aspects of herring related data sets, e.g., herring spawn, was necessary to understand how restoration activities might affect herring abundance trajectories. Currently there are many herring related data sets that are not easily accessible to restoration researchers and managers. Several restoration projects proposed at the April 2006 meeting would require spatial and temporal knowledge of herring data as input to a model or as a measure of the success of a restoration project. This project would provide easier access and visualization of selected herring data sets and other electronic resources.

FUNDING:

EVOS Funding Requested for FY 07 (Including 9% G&A) = $ 132.1 K

TOTAL = $ 132.1 K

Non-EVOS Funds to be used in FY07 = $ 35.7 K

TOTAL = $ 35.7 K

Date: 8-1-2006

PROJECT PLAN

NEED FOR THE PROJECT
Statement of Problem

This project was conceived at an EVOS Trustee Council sponsored workshop on Prince William Sound (PWS) Pacific herring *Clupea pallasi* restoration in April 2006. Currently, existing PWS herring related research and monitoring data sets are dispersed and data are not easily accessible to researchers and managers. Additionally, the spatial and temporal relationships are not readily apparent because much data are not in a spatially enabled format. Many of the restoration project ideas from the April 2006 workshop require knowledge of the temporal and spatial relationships of past herring related data to assess possible future restoration success. For example, updating the circulation and larval drift model requires spatial and temporal herring spawn data as an input. The Alaska Department of Fish and Game (ADF&G) has been estimating the linear extent of herring shoreline spawning and spawning biomass since 1973 (e.g., Brady 1987 and Biggs et al. 1992). Additionally, there are data sets on herring biomass from spawn deposition surveys, and acoustics surveys (e.g., Willette et al. 1998); herring disease data (Marty et al. 2004); and other data sets, literature, and metadata that could be made available to researchers and managers.

This project would extend the work started by the ADF&G to make PWS herring aerial survey data sets and metadata available for visualization, analysis, or downloading.

Relevance to 1994 Restoration Plan Goals and Scientific Priorities

This project would support the 1994 Restoration Plan's Monitoring and Research category of general restoration actions by making PWS herring data available on the web for researchers working on restoration projects. Additionally, this project would indirectly support the recovery goals of herring, an injured biological resource, and indirectly support recovery of commercial fishing, a lost or reduced service. In order to design and evaluate restoration projects, an understanding of past spatial and temporal relationships of herring data is required. This project would consolidate and prioritize herring data sets, metadata, and other electronic information. This project will make the 1973-2006 aerial survey data on the linear extent of shoreline spawn available through a web-based portal. Additional information will be made available in priority order. The web portal would be flexible enough to integrate other electronic information when possible.

The temporal and spatial data on the linear extent of shoreline spawn is necessary for researchers working on the circulation/larval drift model. The results of the circulation/larval drift model will be necessary for planning intervention or enhancement projects that require the movement of eggs. This project does not directly address the restoration of services or resources; however, the information provided is necessary for designing and evaluating direct restoration efforts.

PROJECT DESIGN

Objectives

Objective 1. Consolidate herring data sets, metadata and other electronic resources to publicly accessible web portal for herring information.
Objective 2. Provide web accessible map based visualization of geospatially enabled herring data through a Mapserver and Google Earth client interface.
Objective 3. Develop Standard Operating Procedures (SOPs) for the absorption of additional herring datasets, metadata and information to the centralized herring datasystem. Provide system architecture documentation.
Objective 4. Develop Arcpad application to automate herring spawn data collection.

Procedure and Scientific Methods

Objective 1. Consolidation, assessment and documentation of existing herring resources

Existing herring data sets and electronic resources will be assessed, documented with metadata and centralized to a common access point for distribution and public access. Data sets will be documented via the Federal Geographic Data Subcommittee (FGDC) metadata standard. The metadata document will assist users of the system in utilizing, locating and interpreting the dataset posted on the web portal. Data sets will be stored in their native file formats and corresponding FGDC metadata will be stored as a XML document. Both the data set and corresponding metadata document will be available for download.

Objective 2. Create Geospatial Relational Database and GIS Visualization

Herring data which has a geospatial component will be absorbed into geospatial relational database. Geospatial relational database provides a way to associate data with temporal (time) and spatial (location) information, creating a "geodatabase" and a way to visualize and analyze data in terms of where and when it was collected. Creation of the geodatabase will require:

- Creation of geospatial data structures that describe herring observations and relevant measurements.
- Isolation of layers and shore zone maps to be used in visualizations

Once the geospatial database has been created, analysis and visualization layers will be added on top of the database. Figure 1 below demonstrates how this will be accomplished and provides a logical information flow diagram.

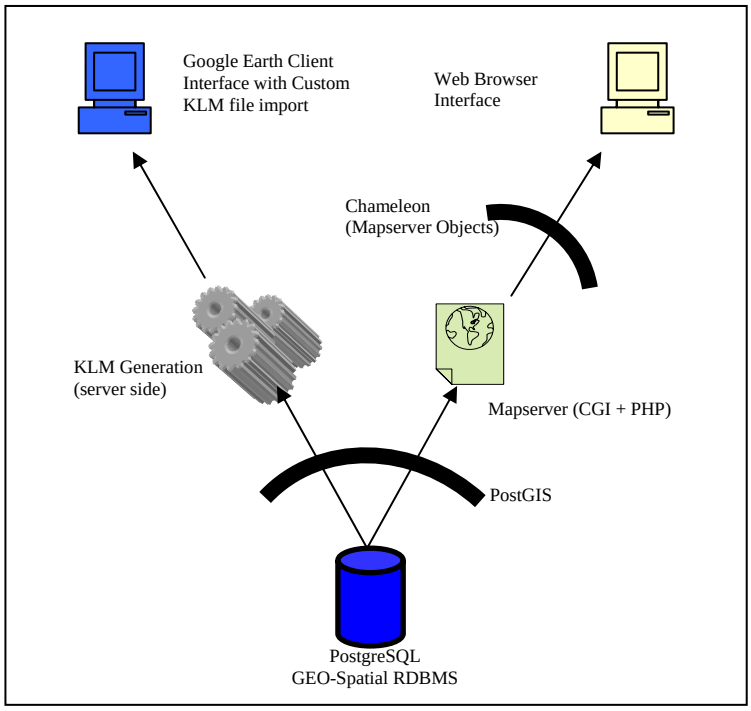

Figure 1. Technology and information flow for herring geospatial database and visualization.

The following is a description of the technologies referenced in Figure 1 broken up into logical information processing tiers. Tier 1 corresponds to data storage (database), tier 2 corresponds with analysis and aggregation of information (Business Logic) and tier 3 concerns itself with visualization (Client Interfaces).

Tier 1 – Relational Database

- PostgreSQL database – PostgreSQL is an open source, object-oriented and geospatially enabled database that can be tailored to the requirements of the herring geospatial database. When PostgreSQL database is coupled with PostGIS the combined database system is compliant with both ASCI SQL and with Open GIS Consortium (OGC) specifications, enabling PostgreSQL to communicate with enterprise relational databases and commercial and public GIS interfaces such as Mapserver and ESRI products. More information about OGC can be downloaded at http://www.opengeospatial.org/standards .

Tier 2 – Business Logic

- Business logic and tabular-based websites will be handled by server scripting languages such as Java, .NET and Cold Fusion to generate Keyhole Markup Language which is an XML schema used by the Goggle Earth interface.
- GIS business logic will be handled by POSTGIS (a GIS-specific Postgres package) and other map/cartographic libraries that blend with POSTGIS.
- Web based map generation will be handled by the Mapserver and Chameleon systems.

Tier 3 – Visualization/Client Interface

- Data visualization will occur for the user via a web based browser interface (thin client) or via the Google Earth client (thick client).

Objective 3. SOPs for absorption of additional herring data and system documentation.

Protocols will be developed to standardize and expedite the absorption of additional herring data resources into the web portal/GIS system. A document will be drafted which defines the various standard operating procedures for data migration into the system. It is envisioned that standard operating procedures will be developed to address the following issues.

- Metadata requirements for data sets and other electronic resources
- Procedures for the absorption of additional datasets to the system.
- Enabling geospatial datasets to be visualized through the systems GIS interface.

In addition to the development of data absorption SOPs, a system architecture document will be drafted to provide documentation of the technologies and methodologies utilized in creation of the herring data portal.

Objective 4. Develop ArcPad application to automate herring spawn data collection.

An ArcPad application will be developed to assist scientists in efficiently and accurately collecting hearing spawning location information. The ArcPad application will be utilized by data collectors during aerial surveys. ADF&G has developed analogous applications for the Bristol Bay herring fishery and those existing systems will be used as a template for the Prince William Sound version of the software.

Data Analysis and Statistical Methods

Data will not be produced from this project. Data and information will be up scaled into relational and geospatial databases if possible. In order for these relational and geospatial databases to be robust, methods of normalization and standards based database development will be employed. Geospatial data structures will be created with compliance to Open Geospatial Consortium (OGC) standards. Computer programming code will be written in an object oriented fashion to increase the potential for code reuse.

Description of Study Area

The majority of this project will involve consolidating existing data, metadata, and other electronic resources related to herring in PWS. The Arcpad application will require testing in ADF&G's Registration Area E. Area E is described in regulation (5AAC 27.300 Description of Prince William Sound Area): The Prince William Sound Area has as its western boundary a line extending south from Cape Fairfield, as its eastern boundary a line extending south from Cape Suckling and as its southern boundary 59° N. lat. The north, east, south, and west bounding coordinates of this area are 61.295, -143.880, 59.000, and -148.8710.

Coordination and Collaboration with Other Efforts

This project was conceived during a PWS herring restoration workshop held in Anchorage on 24 and 25 April, 2006. This workshop was attended by local fishers and researchers from the University of Alaska, University of Washington, National Oceanic and Atmospheric Administration, Alaska Department of Fish and Game, United States Fish and Wildlife Service, Prince William Sound Science Center, and the Oil Spill Recovery Institute, and others. One of the objectives of the workshop was to utilize the results of the workshop to focus the 2007 Invitation for Proposals. This project will collaborate with an ongoing ADF&G funded project to enter historical ADF&G aerial survey data into ArcView.

SCHEDULE

Project Milestones

Objective 1. Consolidate herring data sets, metadata and other electronic resources to publicly accessible web portal for herring information.
To be met by July 2007

Objective 2. Provide web accessible map based visualization of geospatially enabled herring data through a Mapserver and Google Earth client interface.
To be met by September 2007

Objective 3. Develop Standard Operating Procedures (SOPs) for the absorption of additional herring data sets, metadata and information to the centralized herring datasystem. Provide system architecture documentation.
To be met by October 2007

Objective 4. Develop ArcPad application to automate herring spawn data collection.
To be met by April 2007

Measurable Project Tasks

FY07, 2nd quarter (January 1, 2007 – March 31, 2007)

January:	Project funding approved by Trustee Council
February 1st:	Server procurement and configuration completed.

FY07, 3rd quarter (April 1, 2007 – June 30, 2007)

June 30th:	Herring information web portal up and running.
April 30th:	ArcPad Herring Spawn application completed.

FY07, 4th quarter (July 1, 2007 – September 30, 2007)

September 1st	Geodatabase and GIS visualization system complete.
September 30th	SOP and technical documentation complete.

RESPONSIVENESS TO KEY TRUSTEE COUNCIL STRATEGIES

Community Involvement and Tradition Ecological Knowledge (TEK)

This project was conceived during a PWS herring restoration workshop held in Anchorage on 24 and 25 April, 2006. This workshop was attended by local fishers and researchers from the University of Alaska, University of Washington, National Oceanic and Atmospheric Administration, Alaska Department of Fish and Game, United States Fish and Wildlife Service, Prince William Sound Science Center, and the Oil Spill Recovery Institute and others. This project will locally hire staff whenever possible, and the project PI will be physically located in Cordova.

Resource Management Applications

This project will develop technologies to make herring related data and other electronic resources more accessible and improve the timeliness and precision of aerial survey estimates of the length of shoreline used by spawning herring. PWS biomass projections use the total shoreline length of herring spawn ("mile-days) from aerial surveys as one of the abundance indices used to tune the catch-age model. More precise estimates of the shoreline miles of spawn should improve the fit of the model and improve the biomass projection. Local ADF&G area management staff can use improved preseason projections to help optimize the harvest of PWS herring. Additionally, more precise measures of the extent of shoreline used for spawning will also allow managers to direct wild spawn on kelp fisheries more efficiently.

PUBLICATIONS AND REPORTS

Because this project is intended to consolidate data and develop applications, the major products will be a web portal and an ArcPad application. A document describing the Standard Operating Procedures (SOPs) for the absorption of future data sets will be published. In addition, a technical manual documenting the system architecture will also be published.

LITERATURE CITED

Brady, J.A. 1987. Distribution, timing, and relative biomass indices for Pacific Herring as determined by aerial surveys in Prince William Sound 1978 to 1987. Alaska Department of Fish and Game, Division of Commercial Fisheries, Prince William Sound Data Report 87-14, Anchorage.

Biggs Evelyn D., Beth E. Haley, and Jean M. Gilman. 1992. Historic database for Pacific herring in Prince William Sound, Alaska, 1973-1991. Regional Information Report No. 2C91-11. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage, Alaska.

Marty, G. D., T. J. Quinn II, S. A. Miller, T. R. Meyers, and S. D. Moffitt. 2004. Effect of Disease on Recovery of Pacific Herring in Prince William Sound, Alaska, *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 030462), University of California, Davis, California.

Willette T.M., G.S. Carpenter, K. Hyer, and J.A. Wilcock. 1999. Herring natal habitats, *Exxon Valdez* Oil Spill Restoration, Project Final Report (Restoration Project 97166), Alaska Department of Fish and Game, Division of Commercial Fisheries, Cordova, Alaska.

Data Management and Quality Assurance/Quality Control

This project does not propose to collect measurements or process data. This project proposes to consolidate and up scale existing herring information and data resources. This will involve the creation of FGDC compliant metadata for those herring related electronic resources which do not currently have metadata. Datasets will also be up scaled in their data structures to ensure that information contained within the resource can be understood and utilized by other scientists and the public. Methods such as standard based naming conventions and normalization of relational database structures will be utilized whenever appropriate. GIS information will be structured into a geospatial database following the Open GIS Consortium standards to ensure longevity and usability of the geospatial database.

2554 Glacier Street
Anchorage, AK 99508
(907) 677-5930
rob@axiomdms.com

Robert Bochenek

Education

2000 University of Michigan Ann Arbor, MI

Bachelors of Science Engineering in Aerospace Engineering

Bachelors of Science in Mathematics

Bachelors of Science in Physics

Professional experience

Current Axiom Data Management Services Anchorage, AK

Information Architect/Consultant, Owner

- Provide information system assessment, design and deployment services specializing in multi-tiered applications utilizing a wide array of available technologies custom fit to the clients' needs.
- Function as lead developer/administrator of relational database management systems, data driven web technologies, geographic information systems and windows network domain infrastructure. Technologies include SQL Server, PostgreSQL Server, Coldfusion, Java, AJAX, Linux and Windows Server 2003.

2002 - 2006 State of Alaska Anchorage, AK

Data Systems Manager

- Administrator/Primary Developer of all Exxon Valdez Oil Spill Trustee Council (EVOS) databases, network servers, data driven web applications, and metadata and data policies.
- Developed, tested and deployed a 3-tiered intranet/extranet system to automate the administrative tasks associated with the EVOS business cycle. The information system was developed using SQL Server, Java, Cold Fusion, and Transaction SQL. Geospatial database functionality implemented through utilization of PostgreSQL database with PostGIS OGC compliant packages.
- Primary author of the Gulf Ecosystem Monitoring (GEM) data policy which dictates metadata and data format requirements for geospatial datasets being produced by GEM funded projects. The policy also includes protocols for salvaging pre-existing legacy datasets. These standards are being considered for the regional Alaska Oceanographic Observing System (AOOS).
- Supervised two analyst programmers, responsible for budgets and advocating GEM Data Management agenda in various technical and user groups.
- Planned, deployed and installed a Windows 2003 network domain that included two file servers, database server, primary and backup domain controller, backup system, web server and firewall device. Configuration of all network services.
- Supervisor: Michael Baffrey (907) 278-8012

2001 - 2002 ADF&G, Division of Habitat Anchorage, AK

Analyst Programmer

- Created the division's first data system that was accessible through a dynamic data driven web application (intranet). Five Departmental databases (Escapement, Annadromous Waters Catalogue, Permits, and nominations) were consolidated into a SQL Server Database. This system provided a common portal to the databases that previously were accessed through distributed MS Access Databases. The centralization of data solved the Division's dilemma concerning dataset bifurcations. The middle and presentation tier were written in Java, transactional SQL and Cold Fusion. Access to this system was provided on a statewide scale.
- Restructured the Habitat Permit database by up-scaling the system from MS Access to SQL Server. Data structures were reorganized through normalization and relational table structures were modified to allow proficient indexing. Data was QA/QC'd. Access to the database was provided through the Division's intranet site.
- Provided technical documentation and presentations detailing the functionality of the intranet system to divisional employees.
- Supervisor: Frank Wallice (907) 267-2299 or Ed Weiss (907) 267-2305

2000 - 2001 Splitfire Technologies Ann Arbor, MI

Analyst Programmer/Consultant

- Developed applications using languages such as Java, Java Script, XML, ASP, Visual Basic, and Numerical Python.
- Most applications developed in Java stressing the following APIs: IO, Java Database Connectivity (JDBC), Java Server Pages (JSP), Enterprise Java Beans (EJBs), and CRYPTO.
- Primary Author of a 400-page technical manual on Java Programming and Object Oriented Programming (OOP) design philosophy.
- Supervisor: Thomas Kelly (888) 284-6946

1996 - 1999 Unisys Lansing, MI

Network Technician

- Deployed and installed Windows NT network platform to United States Social Service departments and interfaced pre-existing computer and database systems to the new installed platform.
- Supervisor: John Kruze (517) 347-9751

Training

- PostgreSQL Database Administration Training – (7 days) September 2005
- ASP.Net Training – (5 days) May 2005
- OLAP Data Warehouse Training – (3 days) December 2004
- SQL Server Administration Training – (5 days) November 2003
- CORBA Middleware Training With XML – (5 days) March 2002
- Enterprise Java Beans Training – (5 days) May 2000
- Advanced Server Side Java Programming – (5 days) February 2000
- Introduction Java Programming – (5 days) January 2000

Steven D. Moffitt

P.O. Box 669
Cordova, Alaska 99574

Work: (907) 424-3212
FAX: (907) 424-3235
steve_moffitt@fishgame.state.ak.us

Professional Background:

Prince William Sound/Copper River Research Project Leader, Alaska Department of Fish and Game, August 2000 to present. Duties: Develop, implement, and evaluate research projects on Pacific herring, Pacific salmon, and eulachon in Prince William Sound and the Copper River. Specific duties include setting spawning escapement goals, preseason forecasts, evaluation of harvest policies, assessment of runs inseason, and local area network supervision. Supervise one full-time Fishery Biologist II and one 11-month seasonal Fishery Biologist I. Current supervisor: Mr. Lowell Fair, Regional Research Biologist.

Prince William Sound/Copper River Assistant Research Project Leader, Fishery Biologist II, Alaska Department of Fish and Game, November 1991 to August 2000. Duties: Responsible for sampling, compilation, and analysis of age, sex, size, and stock composition data; and salmon catch and escapement reporting. Responsible for assisting with inseason assessment of Pacific salmon and Pacific herring abundance. Supervise five seasonal employees and responsible for five project budgets. Supervisors: Mr. John Wilcock and Mr. Mark Willette, Area Research Biologists

Assistant Project Leader, Fishery Biologist II, Alaska Department of Fish and Game, July 1991 to November 1991. Planned work and supervised five employees in collecting and compiling pink and chum salmon fry/egg abundance and mortality data. Assisted with data analysis and damage assessment report writing. Supervisor: Mr. Sam Sharr, Area Research Biologist

Education:

B.S. Wildlife Management, University of Alaska Fairbanks, 1989.

Selected Publications:

Bue, B.G., S. Sharr, S.D. Moffitt, and A. Craig. 1996. Effects of the *Exxon Valdez* oil spill on pink salmon embryos and preemergent fry. Pages 619-627 *in* S.D. Rice, R. B. Spies, D. A. Wolfe, and B. A. Wright, editors. Proceedings of the *Exxon Valdez* oil spill symposium. American Fisheries Society Symposium 18.

Craig, A., S. Sharr, and S. Moffitt. 1995. A compilation of historical preemergent fry and egg deposition survey data from Prince William Sound, 1961-1995. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division. Regional Information Report No. 2A-95-49, Anchorage.

Lambert, M.B., D.J. Degan, A.M. Mueller, J.J. Smith, S. Moffitt, B. Marston, and N. Gove. 2002. Assessing methods to index inseason salmon abundance in the lower Copper River, 2002 Annual Report. USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Annual Report No. FIS01-021, Anchorage, Alaska.

Marty, G.D., T.R. Meyers, and S.D. Moffitt. 2002. Effects of disease on recovery of Pacific herring in Prince William Sound, Alaska, Fall 2000 and Spring 2001. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 01462), Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

Moffitt, S., B. Marston, and M. Miller. 2002. Summary of eulachon research in the Copper River Delta, 1998-2002. Report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Commercial Fisheries Division. Regional Information Report No. 2A02-34, Anchorage.

Recent collaborators:

Don Degan – Aquacoustics
Michael Lambert – Native Village of Eyak
Michael Link – LGL Consulting
Dr. Gary Marty – University of California Davis
Jason Smith – LGL Consulting

BUDGET JUSTIFICATION: FY 07 TOTAL REQUEST = $132.1K

Personnel: ($99.4K)

Funds are requested ($44.2K) to support an ADF&G Fishery Biologist I positions for 6 months and a Fish and Wildlife Technician III for 4 months. These staff will help consolidate, edit, and/or enter herring related data sets, meta data, and other electronic resources into an electronic format that can be consolidated into a geodatabase (*Objective 1)*. Funds are also requested (6 months, cost $55.2K) to support a private contractor (Rob Bochenek, Axiom Data Management Services) to help create the web portal, develop standard operating procedures for data absorption, and assist with the development of the ArcPad application (*Objectives 2, 3, and 4*).

ADF&G will provide an in-kind contribution of 0.5 man months of staff time (cost $3.2K) to supervise the technicians and 5 months of technician time (cost $20.0 k) to assist with consolidation, editing, and entering of data (*Objectives 1*).

Travel: ($5.3K)

Funds are requested ($4.5K) for Rob Bochenck to travel from Anchorage to Cordova (5 trips) to work with Cordova ADF&G staff on organizing data sets into a geospatial relational database, creating meta data, developing appropriate web based visualizations, developing SOPs for additional data absorption, and developing the ArcPad application (*Objectives 1,2,3, and 4*).

Funds are requested ($0.8K) for Steve Moffitt to travel from Cordova to Anchorage for the annual EVOS sponsored marine science symposium.

Contractual:

Contracts are for Axiom Data Management Services (Rob Bochenek) who will be responsible for providing the needed technical expertise to accomplish the objectives of this proposal. The contract calls for 6 months of salary, 5 round trips to Cordova, a server to host the information on, a flat panel monitor, and some required software for the development of the system. An amount of money is also set aside for 0.3 months of work for a graphic web designer to assist in making the web portal user friendly and aesthetically pleasing. The indirect cost rate for Axiom Data Management Services is 15% and is set there to cover the costs of a high speed internet connection, electricity, equipment configuration, data backup services, copying and general maintenance. The cost type details for the contracted services are explained herein within each individual cost type. Cost for this contract without Trustee Agency G&A is $$66.3K.

ADF&G will provide an in-kind contribution of $10.0 k for air charters used to test the ArcPad application for the collection of herring survey data (*Objective 4*).

Commodities: ($3.1K)

Funds are requested to purchase a 2 year license for Suse Linux OS 9.0 Enterprise Server software, an ESRI 9.2 ArcView license, and a Flat panel monitor (*Objective 2)*.

ADF&G will provide an in-kind contribution of $2.5 k for an ArcPad application builder license and 2 ArcPad licenses used to develop the ArcPad application (*Objective 4*).

Equipment: ($3.5K)

Funds are requested to purchase a Dell PowerEdge Server to host the web portal *Objectives 2).*

ADF&G will provide the following equipment as an in-kind contribution (*Objectives 1 & 2)*:

Dell desktop computers with ArcView 9.2 licenses	$7.0 K
HP tablet PC for ArcPad application	$3.0K
GPS for ArcPad application work	$0.2 K

Total Trustee Agency G&A: ($10.9K)

Total Contractor Indirect: ($9.9K)

Steve Moffitt 20060801 1 map This project will consolidate, document, and enter data sets, meta data, and other electronic resources into a web portal. The web portal will provide public assess to information, data and GIS visualizations. Scientist and researchers will utilize the web portal as a resource to assist in consolidating, accessing and synthesizing herring data. This project will also develop an ArcPad application for collecting herring aerial survey data directly into a GIS format. The project was conceived during an EVOS sponsored workshop in April 2006 that was tasked to identify Prince William Sound herring data gaps and develop restoration or research projects to help herring recovery. Participants indicated that knowledge of the spatial and temporal aspects of herring related data sets, e.g., herring spawn, was necessary to understand how restoration activities might affect herring abundance trajectories. Currently there are many herring related data sets that are not easily accessible to restoration researchers and managers. Several restoration projects proposed at the April 2006 meeting would require spatial and temporal knowledge of herring data as input to a model or as a measure of the success of a restoration project. This project would provide easier access and visualization of selected herring data sets and other electronic resources. This project was conceived at an EVOS Trustee Council sponsored workshop on Prince William Sound (PWS) Pacific herring restoration in April 2006. Currently, existing PWS herring related research and monitoring data sets are dispersed and the data is not easily accessible to researchers and managers. Additionally, the spatial and temporal relationships are not readily apparent because much of the data is not in a spatially enabled format. Many of the restoration project ideas from the April 2006 workshop require knowledge of the temporal and spatial relationships of past herring related data to assess possible future restoration success. For example, updating the circulation and larval drift model requires spatial and temporal herring spawn data as an input. ADF&G has been estimating the linear extent of herring shoreline spawning and spawning biomass since 1973 (e.g., Brady 1987 and Biggs et al. 1992). Additionally, there are data sets on herring biomass from spawn deposition surveys, and acoustics surveys (e.g., Willette et al. 1998); herring disease data (Marty et al. 2003); and other data sets, literature, and metadata that could be made available to researchers and managers. This project would extend the work started by the Alaska Department of Fish and Game (ADF&G) to make PWS herring aerial survey data sets and metadata available for visualization, analysis, or downloading. 20070101 20070930 publication date Planned Unknown -148.871 -143.88 61.295 59 Global Change Directory biomass biomasa biomassa Ecology ecología Ecologia fish peces GIS SIG SIG mortality mortalidad Global Change Directory Prince William Sound There are currently no access restraints for this projects deliverables There are currently no userestraints for this projects deliverables Point 20060801 Robert Bochenek Axiom Data Management Services Mailing and Physical Address
2554 Glacier
Anchorage AK 99508 USA 1-907-677-5930 rob@axiomdms.com FGDC Content Standards for Digital Geospatial Metadata FGDC-STD-001-1998

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

Budget Category:	Authorized FY 2006	Proposed FY 2007
Personnel		$44.2
Travel		$0.8
Contractual		$76.2
Commodities		$0.0
Equipment		$0.0
Subtotal	$0.0	$121.2
General Administration		$10.9
Project Total	$0.0	$132.1
Full-time Equivalents (FTE)		0.8
	Dollar amounts are shown in thousands of dollars.	
Other Resources		

Comments:

Cost-share Funds total: $35.7

This project will extend work done by ADF&G with existing State of Alaska general funds. Additionally, ADF&G will provide the following:

$ 3.2 K: ADF&G will provide 0.5 month of staff time to supervise the project.
$ 20.0 K: ADF&G will provide 5 months of FWT III time to help with data synthesis, editing, and proofing.
$ 10.0 K: ADF&G will provide funding for all aerial surveys to test the ArcPad applcation.
$ 1.5 K: ADF&G will provide a license for ArcPad Application builder to build the application.
$ 1.0 K: ADF&G will provide 2 licenses for ArcPad 7.0.

General Administration costs calculated as 9% of total direct costs per Invitation for proposals.

FY07

Project Number: 070822
Project Title: Herring Data and Information Portal
Agency: ADF&G

FORM 3A
TRUSTEE
AGENCY
SUMMARY

Prepared: 7/26/2006

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

Personnel Costs:		GS/Range/	Months	Monthly		Proposed
Name	Position Description	Step	Budgeted	Costs	Overtime	FY 2007
Vacant	Fishery Biologist I	14 A	6.0	4.7		28.2
Vacant	Fish and Wildlife Technician III	11A	4.0	4.0		16.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
	Subtotal		10.0	8.7	0.0	
					Personnel Total	$44.2

Travel Costs:	Ticket	Round	Total	Daily	Proposed
Description	Price	Trips	Days	Per Diem	FY 2007
Travel to annual EVOS sponsored marine science symposium	0.3	1	5	0.1	0.8
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.8

FY07

Project Number: 070822
Project Title: Herring Data and Information Portal
Agency: ADF&G

FORM 3B
Personnel
& Travel
DETAIL

Prepared: 7/26/2006

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

Contractual Costs:		Proposed
Description		FY 2007
See form 4AB for details Axiom Data Management Services		76.2
When a non-trustee organization is used, the form 4A is require	**Contractual Total**	$76.2

Commodities Costs:		Proposed
Description		FY 2007
	Commodities Total	$0.0

FY07

Project Number: 070822
Project Title: Herring Data and Information Portal
Agency: ADF&G

FORM 3B
Contractual & Commodities DETAIL

Prepared: 7/26/2006

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

New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FY 2007
			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.			0.0
		New Equipment Total	$0.0

Existing Equipment Usage:	Number	Inventory
Description	of Units	Agency
Desktop GIS computers	2	ADF&G
Hp tablet computer for ArcPad application	1	ADF&G

FY07

Project Number:
Project Title: Herring Data and Information Portal
Agency: ADF&G

FORM 3B
Equipment
DETAIL

Prepared: 7/26/2006

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

Budget Category:	Authorized FY 2006	Proposed FY 2007
Personnel		$55.2
Travel		$4.5
Contractual		$0.0
Commodities		$3.1
Equipment		$3.5
Subtotal	$0.0	$66.3
Indirect		$9.9
Project Total	$0.0	$76.2
Full-time Equivalents (FTE)		0.5
	Dollar amounts are shown in thousands of dollars.	
Other Resources		

Comments:
Indirect Cost Rate for Axiom Data Management Services is 15%

FY07

Prepared:

Project Number: 070822
Project Title: Herring Data and Information Portal
Name: Rob Bochenek, Axiom Data Management Services

FORM 4A
Non-Trustee
SUMMARY

2007 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

January 1, 2007 - September 30, 2007

Personnel Costs:			Months	Monthly		Proposed
	Name	Position Description	Budgeted	Costs	Overtime	FY 2007
	Robert Bochenek	Information Architect	6.0	8.8		52.8
		Graphic Designer	0.3	8.0		2.4
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
		Subtotal	6.3	16.8	0.0	
					Personnel Total	$55.2

Travel Costs:		Ticket	Round	Total	Daily	Proposed
	Description	Price	Trips	Days	Per Diem	FY 2007
	RT Anchorage - Cordova Bochenek	0.3	5	15	0.2	4.5
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
					Travel Total	$4.5

FY07

Prepared:

Project Number: 070822
Project Title: Herring Data and Information Portal
Name: Rob Bochenek, Axiom Data Management Services

FORM 4B
Personnel
& Travel
DETAIL

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

Contractual Costs:	Proposed
Description	FY 2007
Contractual Total	$0.0

Commodities Costs:	Proposed
Description	FY 2007
Suse Linux OS 9.0 Enterprise Server Software 2 yr licens	0.8
ESRI 9.2 Arcview License	1.5
Flat Panel Monitor	0.8
Commodities Total	$3.1

FY07

Prepared:

Project Number: 070822
Project Title: Herring Data and Information Portal
Name: Rob Bochenek, Axiom Data Management Services

FORM 4B
Contractual & Commodities DETAIL

2007 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

January 1, 2007 - September 30, 2007

New Equipment Purchases:	Number	Unit	Proposed
Description	of Units	Price	FY 2007
Dell Poweredge Server	1	3.5	3.5
			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	**New Equipment Total**		$3.5

Existing Equipment Usage:	Number	
Description	of Units	

FY07

Prepared:

Project Number: 070822
Project Title: Herring Data and Information Portal
Name: Rob Bochenek, Axiom Data Management Services

FORM 4B
Equipment
DETAIL