

Gulf Ecosystem Monitoring and Research Program Data System

Project Number: 030455

Restoration Category: Data Management & Information Transfer

Proposer: EVOS Trustee Council Office, *Exxon Valdez* Oil Spill Trustee Council

Lead Trustee Agency: EVOS Trustee Council Office (ADFG)

Cooperating Agencies: None

Alaska SeaLife Center: No

Duration: 2nd year, on going project

Cost FY 03: \$212,900

Cost FY 04: \$285,000

Geographic Area: All

Injured Resource/Service: All

ABSTRACT

This project will provide continuing funding for ongoing development of the data management and information transfer system for the Gulf of Alaska Ecosystem Monitoring and Research (GEM) program. GEM is being designed to monitor the ecosystems of the northern Gulf of Alaska and the adjacent coastal regions for a very long time period (more than 100 years). Data collection, quality control and documentation, archiving, transfer, delivery, and presentation are critical components of GEM. Project funding will allow the GEM Data Systems Manager to provide the leadership and expertise necessary for this essential part of the GEM program, and hire support staff to make initial aspects of the program operational.

INTRODUCTION

In March of 1999 the Trustee Council decided to devote a large portion of the remaining settlement funds to a long-term monitoring and research program as part of the legacy of the *Exxon Valdez* oil spill. The draft GEM Program Document, which is scheduled for final adoption by the Trustee Council in Summer 2002, calls for clear and effective approaches to gathering information and making information widely available in well-documented and understandable formats. The data collected with Trustee Council funds must be handled and stored in ways that ensure easy and efficient access by a wide variety of users both now and in the future.

The GEM data policies incorporate ten broad elements (GEM Program Document):

1. A commitment to the maintenance and long-term availability of data.
2. Full and open sharing of data at low cost, after verification and validation.
3. Timely availability of data, depending on the type of data. Some data will be available almost immediately; other data may be available with 24 months.
4. Availability of data on the GEM public web site.
5. Identification of the origin of all data with a citation.
6. Adherence to data collection and storage standards.
7. Provision of citations to the GEM bibliography.
8. Encouragement of active participation in the GEM web site for all participants.
9. Long-term archiving of all data in a designated storage facility.
10. Acceptance of and adherence to the data policies as a condition for participation in the GEM program and receipt of funding.

Need for the Project

A. Statement of Problem

The Trustee Council established goals for the GEM program (April 2000) that make data management a top priority. The “Inform” goal states that the GEM program will provide integrated and synthesized information to the public, resource managers, industry and policy makers in order for them to respond to changes in natural resources. The “Solve” goal requires developing tools, technologies, and information that can help resource managers and regulators improve management of marine resources and address problems that may arise from human activities. The “Detect” goal also has a data management and communication aspect, as GEM is asked to serve as a sentinel (early warning) system by detecting annual and long-term changes in the marine ecosystem, from coastal watersheds to the central Gulf of Alaska.

During the development stages of any data system issues are identified and continually need to be resolved. This requires the guidance and direction of a professional data systems manager to develop and implement a successful network and database system. Timely implementation of a networking infrastructure, database system and associated web sites require additional technical assistance.

B. Rationale/Link to Restoration

In order to accomplish the Trustee Council's goals for the GEM program, management of monitoring and research data is a top priority. The purpose of this project is to provide funding to the GEM program Data Systems Manager and assistant Analyst/Programmer in the development and implementation of a data system for GEM.

C. Location

The Data Systems Manager and Analyst/Programmer will work in the *Exxon Valdez* Oil Spill Trustee Council Office in Anchorage. The Data Systems Manager will generally work under the supervision of the Science Director, although for some projects will work under the supervision of the Executive Director. The Analyst/Programmer will work for the Data Systems Manager.

Project Design

A. Objectives

The Data Systems Manager will work under the general direction and supervision of the Trustee Council's Science Director to:

- Design, implement and manage a data and information system consistent with the provisions of the GEM Program Document that provides data, information products (maps, tables, summary reports) and documentation for scientific researchers, resource managers, policy makers, and the public.
- Determine how best to incorporate existing and future data sets identified by the Science Director and other scientists into the data and information system.
- Develop data management plans and work with Principal Investigators for all data gathering projects funded by the GEM program.
- Chair a Data Advisory Committee; serve as liaison to federal/state agencies, other research entities, principal investigators, other technical support personnel, as well as stakeholders and the general public.

Specific duties will include:

1. Develop a data policy that specifies how, when, and in what format data collected under the GEM program will be provided to GEM.
2. Develop data archiving policies and procedures.

3. Develop procedures for determining how, where, and for how long different kinds of data and metadata should be stored.
4. Develop GEM data standards that are consistent with federal, state, and industry standards.
5. Develop procedures and strategies for processing and using both existing and various types of new data (e.g., time series, taxonomic surveys, geographic locations of seabird colonies).
6. Develop procedures for QA/QC, including validation of GEM data sets.
7. Maintain Internet accessible databases of Trustee Council data and assist in enhancements to the Council's web sites that allow access to GEM data and information.
8. Design and build solutions to manage complex scientific data, using existing software products (for both database systems and data analysis).
9. Account for integration, performance, and reliability of databases.

The assistant Analyst/Programmer will work under the general direction and supervision of the Data Systems Manager to:

- Implement a data and information system consistent with the provisions of the GEM Program Document that provides data, information products (maps, tables, summary reports) and documentation for scientific researchers, resource managers, policy makers, and the public.
- Incorporate existing and future data into the data and information system.

Specific duties will include:

1. Implement QA/QC procedures on incoming data and validate metadata for the GEM data system.
2. Assist in enhancements to the Council's web sites that allow access to GEM data and information.
3. Implement solutions to manage complex scientific data, using existing software products (for both database systems and data analysis).
4. Provide network and computer support for the GEM program, and, to the extent practicable, to the Trustee Council Office.

B. Methods

N/A

C. Cooperating Agencies, Contracts, and Other Agency Assistance

Technical data personnel from Trustee agencies and other research entities will be invited to serve on a data advisory subcommittee. The subcommittee will assist in setting goals and policies for the GEM data system. The data subcommittee will also assist in the development of the data system and advise on how best to address the target user communities' needs and the scope of the system.

SCHEDULE

A. Measurable Project Tasks for FY 03 (October 1, 2002 – September 30, 2003)

October 15:	Analyst/Programmer begins work and assists in development of data system
November 1-15:	New web server and software installed and Trustee Council/GEM websites updated
December-January:	Data Systems Manager prepares data management plans for FY 03 Phase II projects approved by Trustee Council
January:	Attend EVOS Trustee Council/GEM annual workshop
November-September:	Existing data sets identified, collected, documented and incorporated into GEM data system in an ongoing fashion

The primary objective of this project is to provide an ongoing service, consequently there are few set milestone dates or endpoints.

B. Completion Date

The data system will be an ongoing component of the GEM program.

PRINCIPAL INVESTIGATOR

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Exxon Valdez Oil Spill Trustee Council
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PRINCIPAL INVESTIGATOR

Mr. Walker has 19 years of analyst/programmer and biometrician experience with the Alaska Department of Fish and Game, where at various times he headed up the information management programs of the Divisions of Subsistence, Wildlife Conservation, and Sport Fish. He has been Data Systems Manager of the Trustee Council since April 2002.

FY 03 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

Budget Category:	Authorized FY 02	Proposed FY 03					
Personnel	\$47.5	\$151.2					
Travel	\$16.1	\$7.9					
Contractual	\$20.0	\$3.0					
Commodities	\$2.4	\$10.0					
Equipment	\$10.5	\$23.2	LONG RANGE FUNDING REQUIREMENTS				
Subtotal	\$96.5	\$195.3	Estimated				
General Administration	\$8.5	\$17.6	FY 04				
Project Total	\$105.0	\$212.9	\$285.0				
Full-time Equivalentents (FTE)		2.0					
Dollar amounts are shown in thousands of dollars.							
Other Resources							
Comments:							

FY03

Prepared:

Project Number: 030455
 Project Title: GEM Data System
 Agency: Restoration Office (ADF&G)

FY 03 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime
Name	Position Description				
Bob Walker	Data Systems Manager	22D	12.0	7.4	
Vacant	Analyst/Programmer III	18A	12.0	5.2	
		Subtotal	24.0	12.6	0.0
Personnel Total					
Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Per Diem
Description					
Anchorage to Juneau		0.4	2	4	0.2
Anchorage to Fairbanks		0.3	1	2	0.2
Anchorage to Cordova		0.2	1	3	0.2
Data Advisory Subcommittee Travel (two meetings)		0.4	6	12	0.2
Travel Total					

FY03

Project Number: 03455
 Project Title: GEM Data System
 Agency: Restoration Office (ADF&G)

Prepared:

FY 03 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

Contractual Costs:		
Description		
Staff training		
When a non-trustee organization is used, the form 4A is required.		Contractual Total
Commodities Costs:		
Description		
Software upgrades and licenses		
		Commodities Total

FY03

Project Number: 03455
 Project Title: GEM Data System
 Agency: Restoration Office (ADF&G)

Prepared:

FY 03 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

New Equipment Purchases:		Number of Units	Unit Price
Description			
R	Web server	1	12.0
	Analyst/Programmer PC	1	3.2
	Network scanner	1	3.2
	Server console switch	1	2.0
	Server UPS	1	1.8
	Network switch	1	1.0
Those purchases associated with replacement equipment should be indicated by placement of an R.			New Equipment Total
Existing Equipment Usage:		Number of Units	
Description			
Existing web server will be become a backup domain controller in Windows 2000 domain			

FY03

Project Number: 03455
 Project Title: GEM Data System
 Agency: Restoration Office (ADF&G)

Prepared: