

11.14.04

# Exxon Valdez Oil Spill Trustee Council

441 W. 5<sup>th</sup> Ave., Suite 500 • Anchorage, Alaska 99501-2340 • 907/278-8012 • fax 907/276-7178



## AGENDA EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL MEETING

September 3, 2003 11:00 a.m.  
441 West 5<sup>th</sup> Avenue, Suite 500, Anchorage

DRAFT

### Trustee Council Members:

GREGG RENKES  
Attorney General  
State of Alaska

JAMES BALSIGER  
Administrator, Alaska Region  
National Marine Fisheries Service

ERNESTA BALLARD  
Commissioner  
Alaska Department of  
Environmental Conservation

DRUE PEARCE  
Senior Advisor to the Secretary  
for Alaskan Affairs  
U.S. Department of the Interior

KEVIN DUFFY  
Commissioner  
Alaska Department of Fish  
and Game

JOE MEADE  
Forest Supervisor  
U.S. Department of Agriculture  
Forest Service

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Meeting in Anchorage, Trustee Council Office, 441 West 5<sup>th</sup> Avenue, Suite 500  
\_\_\_\_\_ Federal Chair

1. Call to Order – 11:00 a.m.
  - Approval of Agenda
  - Approval of Meeting Notes  
July 24-25, 2003
2. Public comment – 11:05 a.m.
3. Executive Director comments – Gail Phillips
  - Domain name change
  - Investment Training Seminar
  - 15<sup>th</sup> Anniversary (March 2004)
  - Staff vacancies
    - Data Analyst/Programmer recruitment
  - FY 04 Work Plan

- June 6-8 and August 14 PAC meeting summaries – Brett Huber, PAC Chair
- Restoration Office Remodel
- Workshop on the North Pacific Ecosystem Status Report – Phil Mundy

Working lunch (provided)

4. NOAA/NOS Grant\*
5. Discussion and approval of Administrative Budgets\*
  - 040100 Administrative
  - 040455 Data Management
  - 040550 ARLIS
  - 040630 Science Management

Possible Executive session before adjournment.

Adjourn

Possible Executive session to discuss personnel, financial, small parcel and litigation issues.

\* Indicates action items.

# Exxon Valdez Oil Spill Trustee Council

441 W 5<sup>th</sup> Ave., Suite 500 • Anchorage, Alaska 99501-2340 • 907/278-8012 • fax 907/276-7178



## TRUSTEE COUNCIL MEETING NOTES

Anchorage, Alaska

July 24, 2003

**DRAFT**

By Kevin Duffy  
Trustee Council Member

**DRAFT**

### Trustee Council Members Present:

Joe Meade, USFS  
Drue Pearce, DOI  
James Balsiger, NMFS

\*Kevin Duffy, ADF&G  
Ernesta Ballard, ADEC  
Gregg Renkes, ADOL

\* Chair

Meeting convened at 9:03 a.m., July 24, 2003 in Anchorage at the EVOS Conference Room.

### 1. Approval of the Agenda

APPROVED MOTION: Approved the agenda for the July 24, 2003 meeting.  
(Attachment A)

Motion by Ballard, second by Balsiger

### 2. Approval of the Meeting Notes

APPROVED MOTION: Approved the April 23, 2003 meeting notes.  
(Attachment B)

Motion by Ballard, second by Balsiger

Public comment period began at 9:05 a.m.

**No public comment.**

### 3. Executive Session

APPROVED MOTION: Approved moving to executive session for the purpose of considering personnel matters.

Motion by Balsiger, second by Ballard

#### Federal Trustees

U S Department of the Interior  
U S Department of Agriculture  
National Oceanic and Atmospheric Administration

#### State Trustees

Alaska Department of Fish and Game  
Alaska Department of Environmental Conservation  
Alaska Department of Law

EXECUTIVE SESSION

Off the record: 9:06 am

On the record: 10:20 am

4. Approval of the Agenda

APPROVED MOTION: Approved the agenda for the July 24, 2003 meeting.

Motion by Pearce, second by Ballard

5. Approval to offer executive director position to Gail Phillips

APPROVED MOTION: Approval for Kevin Duffy and Jim Balsiger, as the committee which led Trustees through interview process, be empowered to enter into negotiations with Gail Phillips to serve as next *Exxon Valdez* Oil Spill executive director and report back to Trustees so that they can confirm by consensus the outcome.

Motion by Ballard, second by Renkes

6. Schedule meeting to approve funding for FY 04 project proposals

APPROVED MOTION: Approved scheduling a Trustee Council meeting for October 3, 2003 for the purpose of reviewing project proposals and coming to the decisions on which projects to fund.

Motion by Ballard, second by Balsiger

7. Schedule meeting to review and approve Administrative Budgets

APPROVED MOTION: Approved scheduling a Trustee Council meeting for September 3, 2003 for the purpose of approving four budgets associated with administration of the *Exxon Valdez* Oil Spill Trustee Council.

Motion by Ballard, second by Pearce

Public comment period was reopened at 10:45 a.m.

**Public comment received by one individual in Anchorage.**

Public comment was closed at 10:50 a.m.

8. Recess meeting until July 25, 2003



APPROVED MOTION: Approved recess of meeting until July 25, 2003,  
reconvening by teleconference at 4:00 p.m.

Motion by Ballard, second by Meade

Recessed - Off the record 10:45 a.m.

**July 25, 2003 teleconference on the record 4:10 p.m.**

9. Reconvene meeting

APPROVED MOTION: Approved reconvening meeting.

Motion by Ballard, second by Pearce

10. Hiring of Executive Director

APPROVED MOTION: Approved hiring Gail Phillips as Executive Director  
under the terms and conditions negotiated on July 24,  
2003.

Motion by Ballard, second by Renkes

Meeting adjourned at 4:20 p.m. Motion by Ballard, second by Pearce

## **Public Information and Administration**

**Project Number:** 040100

**Restoration Category:** Public Information and Administration

**Proposer:** Trustee Council Office

**Lead Trustee Agency:** All Trustee Agencies

**Alaska SeaLife Center:** No

**Duration:** Ongoing

**Cost FY 96:** \$3,439,600

**Cost FY 97:** \$2,940,500

**Cost FY 98:** \$2,796,300

**Cost FY 99:** \$2,495,700

**Cost FY 00:** \$2,033,900

**Cost FY 01:** \$1,500,000

**Cost FY 02:** \$1,500,000

**Cost FY 03:** \$1,114,300

**Cost FY 04:** \$915,000

**Geographic Area:** N/A

**Injured Resource/Service:** All

### **ABSTRACT**

Project 040100 provides overall support for public and community involvement and administration of the Trustee Council programs through the Trustee Council office. This includes funding support for the Trustee Council staff working at the direction of the Executive Director and public involvement efforts including the active participation

of the 20-member Public Advisory Committee (PAC).

## INTRODUCTION

The Trustee Council, established under the terms of a court approved civil settlement in 1991, is comprised of six members: the Commissioner of the Department of Environmental Conservation; the Commissioner of the Department of Fish and Game; the Attorney General of the State of Alaska; the Secretary of the Department of the Interior; the Secretary of the Department of Agriculture; and the Director of the National Oceanic and Atmospheric Administration. In order to manage the settlement funds as directed by the Trustee Council, the Public Information and Administration project (040100) provides for overall implementation of the Trustee Council programs.

This project makes extensive use of existing Trustee Council agency structures to keep administrative costs to a minimum. The proposed Project 040100 budget continues to make reductions in various areas of administrative and management costs. As proposed for FY 04, the budget is \$815,000.

Components of the 040100 Public Information and Administration project include:

**Trustee Council Office** - The Trustee Council office component includes funding for the Executive Director and staff. The Trustee Council office provides for basic program planning and implementation; intergovernmental and interagency coordination; investment fund management; public information; and overall program management functions of the Trustee Council. The Trustee Council office staff maintain the Trustee Council's financial records including preparation of the monthly investment reports, quarterly and annual financial reports; provide a quarterly report regarding the status of projects funded by the Trustee Council; and work closely with the STAC in facilitating the scientific review and evaluation process.

The budget also includes funding for public information, involvement and outreach. This includes funding associated with public meetings; Public Notice and advertising expenses; all work plan documents (i.e., annual Invitation, Draft Work Plan, Final Work Plan, Annual Status Report); other publications; the web site; and postage for mailings. Funding is also included for the annual external audit. In addition, this budget includes funding for the lease and operating costs for the Trustee Council office at 441 West Fifth Avenue, Anchorage.

**Public Advisory Committee** - The Public Advisory Committee (PAC) consists of 20 members. The PAC includes representatives of major interest groups (e.g., commercial tourism, recreation users, commercial fishing, Native landowners, marine transportation, subsistence, local government, tribal government, conservation/environmental, aquaculture and mariculture, sport hunting and fishing,

regional monitoring programs, science/technical and the public-at-large). The PAC helps provide meaningful public involvement including guidance and input to the Trustee Council on such items as the annual work plans, budgets, and overall development and implementation of the Trustee Council programs, including the GEM Program.

## **NEED FOR THE PROJECT**

The project provides the essential management and administration necessary to efficiently implement the Trustee Council programs.

### **A. Statement of the Problem**

Implementation of the Trustee Council programs, as directed by the Trustee Council and guided by the *Restoration Plan*, requires meaningful public involvement and program administration.

### **B. Rationale/Link to Restoration**

Project 040100 provides essential support to implement the restoration program as directed by the Trustee Council and guided by the *Restoration Plan*.

### **C. Location**

The Trustee Council's office is in Anchorage (441 West 5<sup>th</sup> Avenue, Anchorage, Alaska, 99501).

## **COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE**

Project 040100 supports various aspects of community involvement. This includes public information efforts to assist the general public and spill community residents to learn about and more effectively participate in the restoration program process.

## **PROJECT DESIGN**

### **A. Objectives**

The fundamental objective of the Public Information and Administration project is to implement a comprehensive, balanced restoration program consistent with the *Restoration Plan* and Trustee Council actions.

Specific objectives for FY 04 include:

- Implement the authorized FY 04 Work Plan.
- Compile, manage, synthesize, and disseminate information about the Trustee Council programs, including: (1) production of the Restoration Update newsletter; (2) publication of the Annual Status Report, and (3) updating the Trustee Council's web page.
- Continue planning and development and begin implementation of the Gulf Ecosystem Monitoring and Research Plan (GEM).
- Continue habitat evaluations, appraisals and negotiations with willing sellers under both the Large Parcel and Small Parcel Habitat Protection Programs as applicable.
- Conduct regular meetings of the Public Advisory Committee (PAC) as a means of obtaining public input into the Trustee Council process.
- Work with the Trustee Council-funded, community involvement projects.
- Develop the FY 05 Work Plan, including publication of the initial Invitation to Submit Proposals and preparation of a Draft Work Plan for public comment.
- Oversee and manage current and prior years' projects funded by the Trustee Council, including the production of quarterly and annual reports.
- Complete a tenth independent audit.
- Track equipment (per unit original cost at \$5,000 or more) purchased with settlement funds.
- Coordinate with other research programs, such as North Pacific Research Board, Prince William Sound and Cook Inlet Regional Citizens Advisory Councils, Prince William Sound Science Center, and Prince William Sound Oil Spill Recovery Institute.

#### **B. Methods**

All Trustee Council operations are governed by the state and federal laws and regulations that apply to the respective agencies that comprise the Trustee Council.

#### **C. Cooperating Agencies, Contracts and Other Agency Assistance**

Multiple agencies are involved in the implementation of Project 040100. The Alaska

Department of Fish and Game is the administering agency for most of the operations functions, although the Department of Interior, U.S. Geological Survey receives funding to pay for the Anchorage office's lease costs. The U.S. Department of the Interior receives funding for support in the Federal Budget Office as well as funding for participation of a federal officer associated with the Public Advisory Committee.

A variety of contracts will be administered under Project 040100, including the annual external audit and various desktop publishing contracts. A number of small contracts will also be administered under Project 040100 for support services such as equipment maintenance and publication of documents.

## **SCHEDULE**

The Trustee Council operates on the Federal Fiscal Year (October 1 - September 30).

### **A. Measurable Project Tasks for FY 04 (October 1, 2003 - September 30, 2004)**

Measurable project tasks include implementation of the FY 04 Work Plan and successful development of the FY 05 Work Plan.. Other measurable tasks include meetings of the Trustee Council and the Public Advisory Committee, preparation of quarterly financial reports and quarterly project status reports, preparation of habitat program status reports, completion of a tenth independent audit, and publication of the Restoration Update newsletter and the annual restoration program status report.

### **B. Milestones and Endpoints**

Project Authorization Consistent with Trustee Council action:	October-September
Final Trustee Council action on the Final FY 04 Work Plan:	October
Publish FY 04 Final Work Plan:	November
Complete FY 03 Audit:	January
Publish FY 05 Invitation:	February
Receive FY 05 Project Proposals:	April
Scientific/Technical/Policy/Legal Review of Proposals:	April-August
Publish FY 05 Draft Work Plan:	June
Trustee Council action on FY 05 Work Plan:	August
Executive Director authorizations to proceed:	August-September

### **C. Completion Date**

Project /100 will continue throughout the life of the Trustee Council programs.

## **PUBLICATIONS AND REPORTS**

See above (Measurable Project Tasks).

## **NORMAL AGENCY MANAGEMENT**

Funding in the Project 040100 budget supports the public information and involvement, and administrative functions that are required to implement the Trustee Council programs. The Trustee Council office and the functions included within the Project 040100 budget are budgeted for the sole purpose of supporting Trustee Council program activities and may not be used for other agency purposes.

## **COORDINATION AND INTEGRATION OF RESTORATION EFFORT**

At the direction of the Trustee Council, the Executive Director implements Project 040100 to provide overall coordination and integration of the Trustee Council programs. As part of the adaptive management process, the Trustee Council sponsors the Annual Workshop that brings together scientists, federal and state resource agency representatives, and members of the public to review the status of restoration. In addition, all project proposals are peer reviewed with regard to their coordination and integration aspects. Other coordination efforts include working with the project managers to implement the Trustee Council programs.

**EXPLANATION OF CHANGES IN CONTINUING PROJECTS**

Total funding for FY 04 is consistent with total funding for FY 03.

**PROPOSED PRINCIPAL INVESTIGATOR, IF KNOWN**

Not applicable to this project.



# **GEM RESEARCH PLAN**

## **I. NEED FOR THE PROJECT**

### **A. Statement of Problem**

The project provides the essential management and administration necessary to efficiently implement the Trustee Council programs. Implementation of the Trustee Council programs, as directed by the Trustee Council and guided by the Restoration Plan, requires meaningful public involvement and strong program administration.

The Trustee Council, established under the terms of a court approved civil settlement in 1991, is comprised of six members: the Commissioner of the Alaska Department of Environmental Conservation; the Commissioner of the Alaska Department of Fish and Game; the Attorney General of the State of Alaska; the Secretary of the U.S. Department of the Interior; the Secretary of the U.S. Department of Agriculture; and the Director of the National Oceanic and Atmospheric Administration. In order to manage the settlement funds as directed by the Trustee Council, the Public Information and Administration project (040100) provides for overall implementation of the Trustee Council programs.

Components of the 040100 Public Information and Administration project include:

**Trustee Council Office** – The Trustee Council office component includes funding for the Executive Director and staff. The Trustee Council office provides for basic program planning and implementation; intergovernmental and interagency coordination; investment fund management; public information; and overall program and project management and oversight. The Trustee Council staff maintains the Trustee Council's financial records including preparation of the monthly investment reports and quarterly and annual financial reports; oversees the status of projects funded by the Trustee Council; and works closely with the Science Management team (Project 040630) in facilitating the scientific review and evaluation process.

**Public Advisory Committee** – The Public Advisory Committee (PAC) consists of 20 members representing major interest groups (e.g., commercial tourism, recreation users, commercial fishing, Native landowners, marine transportation, subsistence, local government, tribal government, conservation/environmental, aquaculture and mariculture, sport hunting and fishing, regional monitoring programs, science/technical, and the public-at-large). The PAC helps provide meaningful public involvement by giving guidance and input to the Trustee Council on such items as the annual work plans, budgets, and overall development and implementation of the Trustee Council programs, including the GEM program.

## **B. Relevance to GEM Program Goals and Scientific Priorities**

This project administers the GEM Program, and in doing so, ensures that GEM goals and priorities are achieved. The project also provides for meaningful public involvement in all EVOS Programs, including GEM

## **II. PROJECT DESIGN**

### **A. Objectives**

The fundamental objective of the Public Information and Administration project is to implement a comprehensive, balanced restoration program consistent with the Restoration Plan and Trustee Council actions. Project 040100 provides essential support to implement the restoration program as directed by the Trustee Council. This project makes use of existing Trustee Council agency structures to keep administrative costs to a minimum. The proposed Project 040100 budget continues to make reductions in various areas of administrative and management costs. As proposed for FY 04, the budget is \$915K.

Specific objectives for FY 04 include:

Implement the authorized FY 04 Work Plan.

Compile, manage, synthesize, and disseminate information about the Trustee Council programs, including: (1) publishing the Annual Status Report, (2) updating the Trustee Council's web page, and (3) developing additional informational materials as needed.

Continue to develop and implement the Gulf Ecosystem Monitoring and Research Plan (GEM).

Continue habitat evaluations, appraisals and negotiations with willing sellers under both the Large Parcel and Small Parcel Habitat Protection Programs as applicable.

Conduct habitat evaluations, appraisals and negotiations with willing sellers under both the Large Parcel and Small Parcel Habitat Protection Programs as applicable.

Conduct regular meetings of the Public Advisory Committee (PAC) as a means of obtaining public input into the Trustee Council process.

Work with the Trustee Council-funded, community involvement projects. Implement those recommendations approved by the Trustee Council from the Community Involvement/Community-Based Monitoring Plan for GEM (Project 03575).

Develop the FY 05 Work Plan, including publication of the Invitation to Submit Proposals; preparation of a Draft Work Plan for public comment; review by the PAC and STAC (Scientific and Technical Advisory Committee); and development of final recommendations.

Oversee and manage current and prior years' projects funded by the Trustee Council, including the production of quarterly and annual reports.

Complete a tenth independent audit.

Track equipment (per unit original cost of \$5000 or more) purchased with settlement funds.

A variety of contracts will be administered under Project 040100, including the annual external audit and various desktop publishing contacts. A number of small contracts will also be administered under Project 040100 for support services such as equipment maintenance and publication of documents.

#### **B. Procedural and Scientific Methods**

All Trustee Council operations are governed by the state and federal laws and regulations that apply to the respective agencies that comprise the Trustee Council.

#### **C. Data Analysis and Statistical Methods**

N/A

#### **D. Description of Study Area**

All

#### **E. Coordination and Collaboration with Other Efforts**

At the direction of the Trustee Council, the Executive Director implements Project 040100 to provide overall coordination and integration of the Trustee Council programs. As part of the adaptive management process, the Trustee Council sponsors the Annual Workshop each year in January that brings together scientists, federal and state resource agency representatives, and members of the public to review the status of restoration. In addition, all project proposals are peer reviewed with regard to their coordination and integration aspects. Other coordination efforts include working with the Trustee agency project managers to implement the Trustee Council programs, and coordinating with other research programs, such as the North Pacific Research Board, Alaska Ocean Observing System, Prince William Sound and Cook Inlet Regional Citizens' Advisory Councils, Prince William Sound Science Center, and Prince William Sound Oil Spill Recovery Institute.

Multiple agencies are involved in the implementation of Project 040100. The Alaska Department of Fish and Game is the administering agency for most of the operations functions, although the Department of Interior, U.S. Geological Survey receives funding to pay for the Anchorage office's lease costs. The U.S. Department of the Interior receives funding for support in the Federal Budget Office as well as funding for participation of the federal officer associated with the public advisory committee.

### **III. SCHEDULE**

The Trustee Council operates on the Federal Fiscal Year (October 1 – September 30). Project /100 will continue throughout the life of the Trustee Council programs.

#### **A. Project Milestones**

Trustee Council action on the Final FY 04 Work Plan:	October
Publish FY 04 Final Work Plan:	November
Complete FY 03 Audit	January
Publish FY 05 Invitation:	February
Receive FY 05 Project Proposals:	April
Scientific/Technical/Policy/Legal Review of Proposals:	April-August
Publish FY 05 Draft Work Plan:	June
Trustee Council action on FY 05 Work Plan:	August
Executive Director authorizations to proceed:	August-September

#### **B. Measurable Project Tasks**

Measurable project tasks include implementation of the FY 04 Work Plan and successful development of the FY 05 Work Plan. Other measurable tasks include meetings of the Trustee Council and the Public Advisory Committee, preparation of quarterly financial reports and quarterly project status reports, preparation of monthly Investment Fund Reports, preparation of habitat program status reports, completion of a tenth independent audit, and publication of the annual restoration program status report.

### **IV. RESPONSIVENESS TO KEY TRUSTEE COUNCIL STRATEGIES**

#### **A. Community Involvement and Traditional Ecological Knowledge (TEK)**

Project 040100 supports various aspects of community involvement. This includes public information efforts to assist the general public and spill community residents to learn about and more effectively participate in the restoration program.

#### **B. Resource Management Applications**

Funding in the Project 040100 budget supports the public information and involvement and administrative functions that are required to implement the Trustee Council programs. The Trustee Council office and the functions included within the Project 040100 budget are budgeted for the sole purpose of supporting Trustee Council program activities.

### **V. PUBLICATIONS AND REPORTS**

N/A

## **VI. PROFESSIONAL CONFERENCES**

N/A

## **Project 040100 – BUDGET JUSTIFICATION**

### **ADF&G/Trustee Council Office Component**

#### **Personnel (\$433.7)**

The administrative budget includes 6 fulltime positions one of which is jointly funded with NOS, and one that is paid by General administration funds, annual salaries include employer costs; Executive Director, (vacant, 12 months salary at Range 28, Step M, \$142.6); Science Director, Phil Mundy (12 months salary at Range 26 Step M, \$132.2); Program Director (vacant, 12 months salary at Range 24, Step A, \$90.6); Administrative Assistant Brenda Hall (12 months salary at Range 13 Step A, \$52.5); Administrative Assistant, Cherri Womac (3 months salary at Range 14 Step K, \$15.8), the remaining 9 months are supplemented by the NOS grant (9 months salary, \$47.7); Administrative Assistant, Paula Banks, (months salary at Range 14 Step C, \$56.5), 12 months salary is supported 100% out of the General Administration fee generated by the by project 040100. Budgeted amount assumes vacant positions are to be filled by Oct. 1, 2003.

#### **Travel (\$45.8)**

TC Office/Science staff – 2 trips Juneau (\$3.9), 5 trips for travel to community involvement/public meetings (\$4.0), 20 member Public Advisory Committee travel to 2 meetings in Anchorage (\$20.8), Travel for 3 Investment Working Group members to attend Investment training (\$3.0), National conferences/meetings (\$6.6), 3 trips to Washington DC (\$7.5).

#### **Contractual (\$149.6)**

The Alaska Department of Fish and Game is the administering agency for most of the operations functions. A number of small contracts are administered under Project 03100 for support services such as equipment maintenance and printing and publication of documents, desktop publishing services. The day to day function of the office includes costs for, phone, teleconferencing, postage, parking, statutorily required public notices, staff training, meeting space rental, T1 Line/DIS-WAN Access, transcription services, FY 2003 audit.

#### **Commodities (\$15.5)**

Miscellaneous office supplies and equipment to support meetings and the day to day office functions, and software upgrades

#### **DOI Component (\$141.2)**

The Department of Interior, U.S. Geological Survey receives funding to pay for the Anchorage office's lease costs, (lease cost does not generate GA) (\$141.2).

Personnel (\$18.0)

The U.S. Department of the Interior receives funding for support in the Federal Budget Office as well as funding for participation of a federal officer associated with the Public Advisory Committee (\$18.0).

# FY 04 Exxon Valdez Trustee Council Project Budget

October 1, 2003 - September 30, 2004

Budget Category:	Authorized FFY 2003	Proposed FFY 2004	PROPOSED FFY 2003 TRUSTEE AGENCIES TOTALS					
			ADEC	ADF&G	ADNR	USFS	DOI	NOAA
				\$702.5			\$160.8	
Personnel	\$605.4	\$451.7						
Travel	\$69.8	\$45.8						
Contractual	\$340.4	\$290.8						
Commodities	\$18.3	\$15.5						
Equipment	\$0.0	\$0.0						
Subtotal	\$1,033.9	\$803.7	LONG RANGE FUNDING REQUIREMENTS					
General Administr.	\$80.5	\$59.6		Estimated FFY 2005				
Project Total	\$1,114.3	\$863.3		TBD				
Full-time Equivalents (FTE)	7.2	6.2						
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments:								
This budget reflects further reduction of expenses associated with administration of the Trustee Council's programs.								
Major changes in this budget from FY 03:								
Reduction in travel, postage, and printing costs to reflect actual spending levels the last two years.								
Personnel costs in FY04 are lower due to eliminating the Admin Manager position, and shifting cost for 9 months of Cherri Womacs salary to the Science Management budget (040630A); total costs reflect an increase in health insurance costs.								
The Public Advisory Committee (PAC) section has been eliminated. PAC travel has been moved to the Operations section; and the personnel for the designated federal officer has been moved to the DOI section.								
General Administration formula is not calculated on entire subtotal amount as USGS does not get GA on the lease amount of \$141.2.								

**2004**

Project Number: 040100  
 Project Title: Public Information and Administration - Trustee Council  
 Office  
 Agency: Multiple

FORM 2A  
 MULTI-TRUSTEE  
 AGENCY  
 SUMMARY



# **FY 04 Exxon Valdez Trustee Council Project Budget**

October 1, 2003 - September 30, 2004

Budget Category:	Authorized FFY 2003	Proposed FFY 2004							
Personnel	\$583.2	\$433.7							
Travel	\$52.6	\$45.8							
Contractual	\$200.5	\$149.6							
Commodities	\$18.3	\$15.5							
Equipment	\$0.0	\$0.0							
Subtotal	\$854.6	\$644.5	LONG RANGE FUNDING REQUIREMENTS						
General Administration	\$76.9	\$58.0		Estimated FFY 2005					
Project Total	\$931.5	\$702.5		TBD					
Full-time Equivalents (FTE)	7.0	6.0							
Dollar amounts are shown in thousands of dollars.									
Other Resources									
<p>Comments:</p> <p>The Administrative Assistant II (P. Banks) position (\$56.5) is funded through General Administration funds.</p>									

**2004**

Project Number: 040100  
 Project Title: Public Information and Administration - Trustee Council Office  
 Agency: AK. Dept. of Fish and Game

FORM 3A  
 TRUSTEE  
 AGENCY  
 SUMMARY

# FY 04 Exxon Valdez Trustee Council Project Budget

October 1, 2003 - September 30, 2004

Personnel Costs:		GS/Range/Step	Months Budgeted	Monthly Costs	Overtime	Proposed FFY 2004
Name	Position Description					
Vacant	Executive Director		12.0	11.9		142.6
Mundy	Science Director		12.0	11.0		132.2
Vacant	Program Director		12.0	7.5		90.6
Banks	Administrative Assistant *		12.0	4.7		0.0
Womac	Administrative Assistant		3.0	5.3		15.8
Hall	Administrative Assistant		12.0	4.4		52.5
Overtime						0.0
* Note: This position supported with GA funds (\$56.5).		Subtotal	63.0	44.8	0.0	
Personnel Total						\$433.7
Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Hotel & Per Diem	Proposed FFY 2004
Description						
In-State Travel						
Anchorage to Juneau (administrative travel)		0.4	5	10	0.2	3.9
Community involvement/public meetings		0.3	5	10	0.2	3.5
Car rental (daily rate of \$45.00)				10		0.5
PAC - 1 day in person meeting (Anchorage)		0.4	16	1	0.2	8.8
PAC - 2 day in person meeting (Anchorage)		0.4	16	2	0.2	12.0
Out-of-State Travel						
Anchorage - Washington D.C.		1.7	3	8	0.3	7.5
National conferences/meetings		1.7	3	5	0.3	6.6
Investment training travel		0.5	3	5	0.3	3.0
Travel Total						\$45.8

2004

Project Number: 040100  
 Project Title: Public Information and Administration - Trustee Council Office  
 Agency: AK. Dept. of Fish and Game

FORM 3B  
 Personnel  
 & Travel  
 DETAIL

# FY 04 Exxon Valdez Trustee Council Project Budget

October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>	
Description	Proposed FFY 2004
FY 2003 Audit	49.0
Phone, teleconferencing and fax	26.0
Postage (metered mail 1.5, bulk mail 1.5)	3.0
Courier service	1.4
Parking (6 spaces * \$52.25 * 12 mon = \$3,762, 3 spaces are included in the lease for a total of 9 spaces)	3.8
Printing and publications	9.0
Desktop Publishing Services Contracts	20.0
Equipment Maintenance Agreements (copiers, fax machines, postage meter in Anchorage)	10.6
Public Notice (TC meetings 1.7, PAC 1.0, other 0.5)	3.2
ADA Compliance (special access to meetings)	0.5
Transcription Services	5.0
Staff training	3.0
CORE Membership	1.5
Meeting space rental (out of building)	1.0
T1 Line /DIS-WAN Access (ACS 12 Emp x \$793 per yr = \$9516)	9.6
Investment Training/Working Group Costs	3.0
When a non-trustee organization is used, the form 4A is required.	
<b>Contractual Total</b>	<b>\$149.6</b>

**2004**

Project Number: 040100

Project Title: Public Information and Administration - Trustee Council  
Office

Agency: AK Dept. of Fish and Game

FORM 3B  
Contractual &  
Commodities  
DETAIL

October 1, 2003 - September 30, 2004

2004

FORM 3B  
Contractual &  
Commodities  
DETAIL

October 1, 2003 - September 30, 2004

FORM 3B  
Equipment  
DETAIL

# FY 04 Exxon Valdez Trustee Council Project Budget

October 1, 2003 - September 30, 2004

Budget Category:	Authorized FFY 2003	Proposed FFY 2003						
Personnel	\$19.2	\$18.0						
Travel	\$0.0	\$0.0						
Contractual	\$139.9	\$141.2						
Commodities	\$0.0	\$0.0						
Equipment	\$0.0	\$0.0						
Subtotal	\$159.1	\$159.2	LONG RANGE FUNDING REQUIREMENTS					
General Administration	\$1.7	\$1.6		Estimated FFY 2005				
Project Total	\$160.8	\$160.8						
Full-time Equivalents (FTE)	0.2	0.2						
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments:								
No GA will be paid to USGS on building lease (sponsor for the building leased space) per agreement with USGS.								

**2004**

Project Number: 040100  
 Project Title: Public Information and Administration - Trustee Council Office  
 Agency: Dept. of the Interior

FORM 3A  
 TRUSTEE  
 AGENCY  
 SUMMARY

# FY 04 Exxon Valdez Trustee Council Project Budget

October 1, 2003 - September 30, 2004

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FFY 2004
Name	Position Description					
Nesslage Mutter (PAC)	Federal Budget Officer		1.5	10.0		15.0
	Regional Environmental Assistant		0.5	6.0		3.0
Subtotal			2.0	16.0		
<b>Personnel Total</b>						<b>\$18.0</b>

Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FFY 2004
Description						
<b>Travel Total</b>						<b>\$0.0</b>

**2004**

Project Number: 040100

Project Title: Public Information and Administration - Trustee Council Office

Agency: Dept. of the Interior

FORM 3B  
Personnel  
& Travel  
DETAIL

# FY 04 Exxon Valdez Trustee Council Project Budget

October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>		Proposed FFY 2004
Description		
Building Lease Space (USGS sponsored) - 12 months at \$11,664/mo, includes an 8% GSA fee & \$.18 * sq ft for service fee An additional \$.1 per month is factored in to the total for an anticipated increase in service fees.		141.2
When a non-trustee organization is used, the form 4A is required. <span style="float: right;"><b>Contractual Total</b></span>		\$141.2
<b>Commodities Costs:</b>		Proposed FFY 2004
Description		
<b>Commodities Total</b>		\$0.0

## 2004

Project Number: 040100  
 Project Title: Public Information and Administration - Trustee Council  
 Office  
 Agency: Dept. of the Interior

FORM 3B  
 Contractual &  
 Commodities  
 DETAIL



# FY 04 Exxon Valdez Trustee Council Project Budget

October 1, 2003 - September 30, 2004

<b>New Equipment Purchases:</b>		Number of Units	Unit Price	Proposed FFY 2004
	Description			
Those purchases associated with replacement equipment should be indicated by placement of an R.			<b>New Equipment Total</b>	\$0 0
<b>Existing Equipment Usage:</b>		Number of Units	Inventory Agency	
	Description			

2004

Project Number: 040100  
 Project Title: Public Information and Administration - Trustee Council  
 Office  
 Agency: Dept. of the Interior

FORM 3B  
Equipment  
DETAIL

## Gulf Ecosystem Monitoring and Research Program Data System

Project Number: 040455

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: 3rd year, on going project

Cost FY 03: \$212,900

Cost FY 04: \$156,800

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 designed to monitor the ecosystems of the northern Gulf of Alaska and 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

The GEM program encompasses a long term effort to monitor ecosystem dynamics in the Gulf of Alaska. In order to extract scientific understanding from these monitoring efforts, the information collected over the years must be readily accessible for analysis and synthesis. GEM data management is charged with creating the technological structure to archive and disseminate this information. The following excerpt, taken from the National Research Council's review of the GEM Program Document, stresses the importance of concrete data and information management as it pertains to the GEM program:

*The legacy of the GEM program will be the data it collects. Given the objective of establishing a long-term measurement program in the Gulf of Alaska and its importance to both regional and national interests, GEM must make a strong commitment to data and information management. The goals must be to facilitate data exchange among GEM scientific investigators, make data available to the public and others outside the scientific community, and archive GEM data products.*

The success of the GEM program relies heavily on the efforts of the GEM data management section. Efforts which both contribute to the construction of a robust data archiving system and guide principal investigators to produce adequate data management plans will ensure that information harvested through the GEM program will be readily available to anyone for future scientific analysis and synthesis. Internally, the GEM data management section will provide a productive technological environment for all EVOS staff through the maintenance and support of network and computing systems located within the Trustee Council Office. In this regard a high priority for the GEM data management section is the production of an automated administrative system to expedite the processes associated with the registration, documentation, and review of GEM projects.

The GEM data policies, as detailed in the GEM Program Document, incorporate ten broad elements:

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 (Gem Program Document, 2002)) 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 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 requires 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 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. Continue to develop a data policy that specifies how, when, and in what format data collected under the GEM program will be provided to GEM.
2. Implement and apply data archiving policies and procedures to potential datasets.
3. Develop procedures for determining how, where, and for how long different kinds of data and metadata should be stored.
4. Ensure that GEM data standards are consistent with federal, state, and industry standards and make required changes to GEM data standards if needed.
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/Implement procedures for QA/QC, including validation of GEM data sets.
7. Develop and maintain a data system which interfaces with other regional data systems.
8. Design, build, and maintain 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 Analyst/Programmer will work under the general direction and supervision of the Data Systems Manager to:

- Provide for computer and network needs of office staff, including Web site.
- 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 the overall 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 have been 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 04 (October 1, 2003 – September 30, 2004)**

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

October 15:	LINUX Server installed and testing and implementation of data system begins.
December:	Installation of OPeNDAP DODS server and connection to IOOS
October-January:	Data Systems Manager prepares data management plans for FY 04 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

## **B. Completion Date**

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

### **PRINCIPAL INVESTIGATOR**

Rob Bochenek  
Data Systems Manager  
*Exxon Valdez* Oil Spill Trustee Council  
441 West 5<sup>th</sup> Ave., Suite 500  
Anchorage, AK 99501  
(907) 278-8012  
(907) 276-7178 (fax)  
rob\_bochenek@oilspill.state.ak.us

### **PRINCIPAL INVESTIGATOR**

Mr. Bochenek has degrees in mathematics, physics, and aerospace engineering and has worked in scientific programming most of his professional life. He has been Data Systems Manager of the Trustee Council since April 2003, and prior to that, Analyst/Programmer since October of 2002.

# GEM RESEARCH PLAN

## I. NEED FOR THE PROJECT

### A. Statement of Problem

The Trustee Council established goals for the GEM program (Gem Program Document, 2002)) 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 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 requires additional technical assistance.

### B. Relevance to GEM Program Goals and Scientific Priorities

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 Analyst/Programmer in the development and implementation of a data system for GEM.

The GEM program encompasses a long term effort to monitor ecosystem dynamics in the Gulf of Alaska. In order to extract scientific understanding from these monitoring efforts, the information collected over the years must be readily accessible for analysis and synthesis. GEM data management is charged with creating the technological structure to archive and disseminate this information. The following excerpt, taken from the National Research Council's review of the GEM Program Document, stresses the importance of concrete data and information management as it pertains to the GEM program:

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information harvested through the GEM program will be readily available to anyone for future scientific analysis and synthesis. Internally, the GEM data management section will provide a productive technological environment for all EVOS staff through the maintenance and support of network and computing systems located within the Trustee Council Office. In this regard a high priority for the GEM data management section is the production of an automated administrative system to expedite the processes associated with the registration, documentation, and review of GEM projects.

The GEM data policies, as detailed in the GEM Program Document, incorporate ten broad elements:

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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.

## **II. PROJECT DESIGN**

### **A. Objectives**

Objective 1. 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.

Objective 2. Determine how best to incorporate existing and future data sets identified by the Science Director and other scientists into the data and information system.

Objective 3. Develop data management plans and work with Principal Investigators for all data gathering projects funded by the GEM program.

Objective 4. Provide for computer and network needs of office staff, including Web site.

Objective 5. 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.

#### **B. Procedural and Scientific Methods**

N/A

#### **C. Data Analysis and Statistical Methods**

N/A

#### **D. Description of Study Area**

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.

#### **E. Coordination and Collaboration with Other Efforts**

Technical data personnel from Trustee agencies and other research entities have been 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.

### **III. SCHEDULE**

#### **A. Project Milestones**

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

#### **B. Measurable Project Tasks**

October 15: LINUX Server installed and testing and implementation of data system begins October 15.

December: Installation of OPeNDAP DODS server and connection to IOOS in December.

October-January: Data Systems Manager prepares data management plans for FY 04 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

#### **IV. RESPONSIVENESS TO KEY TRUSTEE COUNCIL STRATEGIES**

##### **A. Community Involvement and Traditional Ecological Knowledge (TEK)**

N/A

##### **B. Resource Management Applications**

N/A

#### **V. PUBLICATIONS AND REPORTS**

GEM Data Management is not requesting funding for publication.

#### **VI. PROFESSIONAL CONFERENCES**

GEM Data Management is not requesting funding for professional conferences. GEM Data Management principal investigators will attend the annual GEM workshop.

## **Robert J Bochenek**

Exxon Valdez Oil Spill Trustee Council  
441 West 5<sup>th</sup> Ave, Suite 500  
Anchorage, Alaska 99501  
(907) 278-8012  
rob\_bochenek@oilspill.state.ak.us

Mr. Bochenek has degrees in mathematics, physics, and aerospace engineering and has worked in scientific programming most of his professional life. He has been Data Systems Manager of the Trustee Council since April 2003, and prior to that, Analyst/Programmer for the Trustee Council since October of 2002.

### **Professional Experience:**

Exxon Valdez Oil Spill Trustee Council	2002 - present
Data System Manager (2003 - present)	
Analyst Programmer III (2002 - 2003)	
Alaska Department of Fish and Game	2001 - 2002
Analyst Programmer III (2002 - 2002)	
Analyst Programmer II (2001 - 2002)	

### **Education:**

Bachelor of Science Engineering in Aerospace Engineering  
University of Michigan – Ann Arbor, 2001

Bachelor of Science in Mathematics  
University of Michigan – Ann Arbor, 2001

Bachelor of Science in Physics  
University of Michigan – Ann Arbor, 2001

### **Publications:**

Bochenek, R. and Kelley, T. 1993. Introduction to Object Oriented Programming Methodology.  
Splitfire Technologies

### **Affiliations:**

Alaska Oceanographic Observing System (AOOS) Data Management Committee (DMAC)

## **Project 040455 – BUDGET JUSTIFICATION**

### **ADF&G/Trustee Council Office Component**

#### **Personnel (\$97.2)**

The GEM data systems budget includes 2 full time positions one of which is jointly funded with NOS. Data Systems Manager, Rob Bochenek (12 months salary Range 21 B, \$80.4). Analyst Programmer (3 months salary at Range 18 Step A, \$16.8) (NOS grant provides 9 months of salary, \$50.4) - Position currently vacant. Intend to hire. Budgeted amount assumes full-time position is filled by Oct. 1, 2003 at a Range 18 Step A.

#### **Travel (\$19.2)**

TC Office data management staff (\$6.2) – Based on FY 03 actual expenses, which included travel to Fairbanks, Juneau, and various data management conferences/meetings.

Data Subcommittee meeting travel (\$13) – Includes out of town travel expenses for Data Management Subcommittee members to attend GEM data management meetings.

#### **Contractual (\$8.0)**

Staff Training (\$8.0) – This is to cover the expense of Four to Five professional technology courses to assist the GEM Data Systems Manager and Analyst Programmer in performing their job responsibilities.

#### **Commodities (\$20.6)**

Software Upgrades and Licenses (\$10)

Tapes for Tape Backup (\$2.6)

Linux Development Server (8.0)

# FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2003 - September 30, 2004

Budget Category:	Authorized FY 03	Proposed FY 04							Authorized FY 02
Personnel	\$151.2	\$97.2							\$47.5
Travel	\$7.9	\$19.2							\$16.1
Contractual	\$3.0	\$8.0							\$20.0
Commodities	\$10.0	\$20.6							\$2.4
Equipment	\$23.2	\$0.0	LONG RANGE FUNDING REQUIREMENTS						\$10.5
Subtotal	\$195.3	\$145.0	Estimated						\$96.5
General Administration	\$17.6	\$11.8	FY 05						\$8.5
Project Total	\$212.9	\$156.8	TBD						\$105.0
Full-time Equivalents (FTE)		1.3							
			Dollar amounts are shown in thousands of dollars.						
Other Resources									
Comments:									

**FY04**

Prepared: 05/29/03

Project Number: 040455  
Project Title: GEM Data System  
Agency: Restoration Office (ADF&G)

FORM 3A  
TRUSTEE  
AGENCY  
SUMMARY

**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**

October 1, 2003 - September 30, 2004

<b>Personnel Costs:</b>		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FY 03
Name	Position Description					
Rob Bochenek	Data Systems Manager	21B	12.0	6.7		0.0
Vacant	Analyst/Programmer III	18A	3.0	5.6		80.4
						16.8
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			15.0	12.3	0.0	
<b>Personnel Total</b>						<b>\$97.2</b>
<b>Travel Costs:</b>		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 03
Description						
Anchorage to Juneau		0.4	2	4	0.2	0.0
						1.6
Anchorage to Fairbanks		0.3	1	2	0.2	0.0
						0.7
Meeting/Conference Travel		0.7	3	9	0.2	0.0
						3.9
Data Subcommittee meeting travel						0.0
						13.0
						0.0
						0.0
<b>Travel Total</b>						<b>\$19.2</b>

**FY04**

Prepared: 05/29/03

Project Number: 04455  
Project Title: GEM Data System  
Agency: Restoration Office (ADF&G)

FORM 3B  
Personnel  
& Travel  
DETAIL

**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**

October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>		Proposed
Description		FY 03
Staff training		8.0
When a non-trustee organization is used, the form 4A is required.		
<b>Contractual Total</b>		\$8.0
<b>Commodities Costs:</b>		Proposed
Description		FY 03
Software upgrades and licenses		10.0
Tapes for Tape Backup		2.6
Linux Development Server		8.0
<b>Commodities Total</b>		\$20.6

**FY04**

Prepared: 05/29/03

Project Number: 04455  
 Project Title: GEM Data System  
 Agency: Restoration Office (ADF&G)

FORM 3B  
 Contractual &  
 Commodities  
 DETAIL



**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
October 1, 2003 - September 30, 2004

[illegible]

FY04

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

FORM 3B  
Equipment  
DETAIL

Prepared: 05/29/03

# **GEM Data Management Strategic Plan**

## Abstract

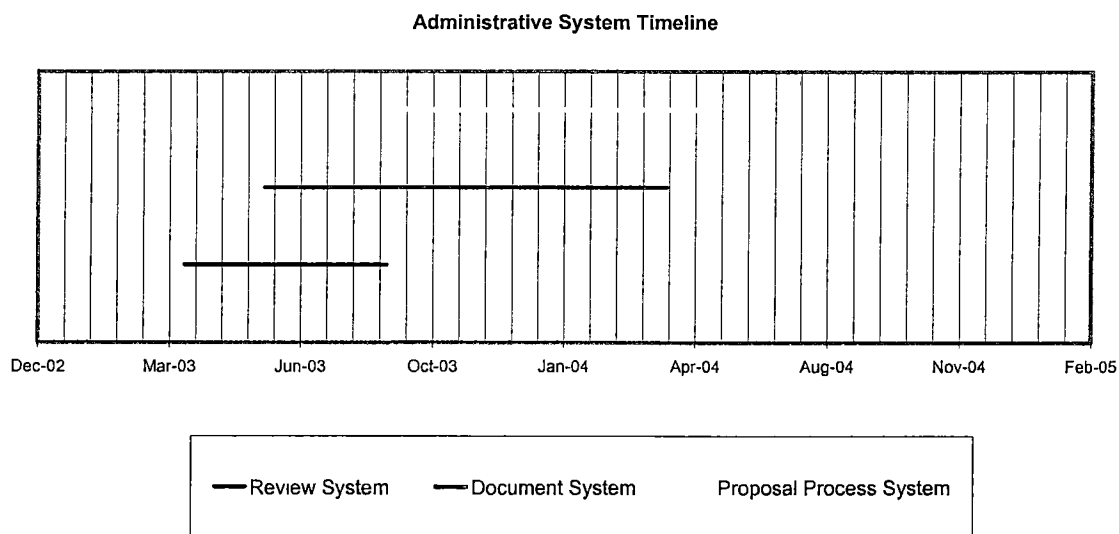
The GEM program encompasses a long term effort to monitor ecosystem dynamics in the Gulf of Alaska. In order to extract scientific understanding from these monitoring efforts the information collected over the years must be readily accessible for analysis and synthesis. GEM data management is charged with creating the technological structure to archive and disseminate this information. The following excerpt, taken from the National Research Council's review of the GEM Program Document, stresses the importance of concrete data and information management as it pertains to the GEM program.

*The legacy of the GEM program will be the data it collects. Given the objective of establishing a long-term measurement program in the Gulf of Alaska and its importance to both regional and national interests, GEM must make a strong commitment to data and information management. The goals must be to facilitate data exchange among GEM scientific investigators, make data available to the public and others outside the scientific community, and archive GEM data products.*

The success of the GEM program relies heavily on the efforts of the GEM data management section. Efforts which both contribute to the construction of a robust data archiving system and guide principal investigators to produce adequate data management plans will ensure that information harvested through the GEM program will be readily available for future scientific analysis and synthesis to anyone who needs to use it. Internally the GEM data management section will provide a productive technological environment for all EVOS staff through the maintenance and support of network and computing systems located within the Trustee Council Office. In this regard a high priority for the GEM data management section is the production of an automated administrative system to expedite the processes associated with the registration, documentation, and review of GEM projects. The following is a brief analysis and description detailing the timeframes and processes associated with accomplishing these goals.

## Data System

The primary responsibility of the GEM data management section is the development of a data system which archives and disseminates data and information produced by GEM sponsored projects. In addition, a related responsibility is to create and maintain information pathways to other relevant distributed data systems. This data and information includes, but is not limited to data sets, project documents, computational models, and portals to information produced or stored outside the confines of the data system. The data system will assist scientist in realizing their individual goals in addition to assisting GEM staff in accomplishing the tasks outlined in the GEM Program Document and GEM Science Plan. Creation of the data system can be grouped into three distinct phases. Each phase will iterate through a continual cycle of development and testing with the previous testing period acting as the basis for the following development cycle.



**Fig. 2:** Timeline detailing the development and implementation of the GEM automated administrative system.

## Network/User Support

A computer network is defined as a system of computers and their respective users. Computer networks require periodic maintenance to function correctly. In order for users to harness the power of their computer systems, staff must exist within an organization to provide support in the use of that technology. Each computer must be monitored for general system health and assessed for system patches and software upgrades. License information must be kept current for each instance of a software product to ensure system legality. Security upgrades must be implemented on a regular basis to ensure that data and information are protected. These types of maintenance tasks are ongoing and require constant staff time to ensure the technological health of the network and associated computing systems.

## Data Policy

A primary responsible of the GEM data management section is the creation of each project's unique data plan. Each principal investigator will work with the GEM Data Manager to define his or her own specific data plan. Data plans will be constructed from themes contained within the GEM data policy, GEM Program Document, GEM Science Plan, and from technical characteristics of the GEM data system. Development of these plans will coincide with the proposal cycle and will be generated after the registration, review, and selection of successful projects has occurred.

- **Phase One: Relational Database Model**

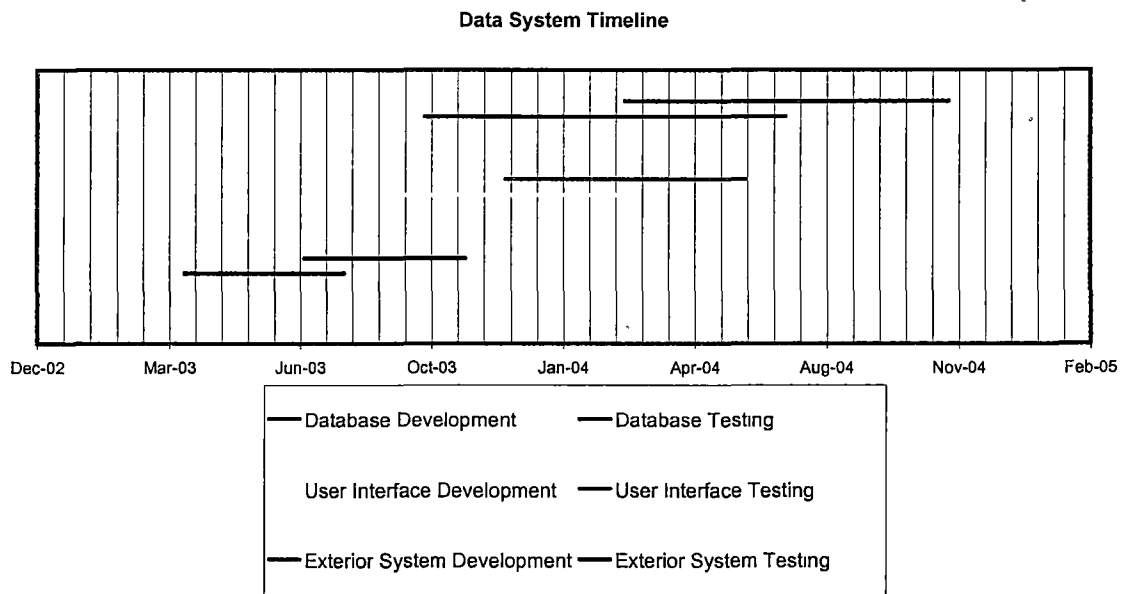
At the core of the data system is the Relational Database Management System (RDBMS) which constitutes the structures which organize and hold all relevant GEM data. The system will act as the engine for information dissemination. The first instance of the model will finish testing by November 2003 and will subsequently go into production.

- **Phase Two: User Interface**

Information must be supplied to individuals and this will be facilitated through the creation of a user interface to the relational database model. The GEM data system will be both accessible via the WEB and through client software connections. A completely operational data dissemination system will be in place by June 2004.

- **Phase Three: Exterior System Interface**

A primary goal of the GEM data system is the ability to interact with other data systems. The creation of pathways to other systems through the application of middleware technologies such as OPeNDAP will accomplish this goal. Simple connectivity to other distributed data sources is projected to occur around November 2004.



**Fig. 1:** Timeline detailing the first cycle of development and testing of primary aspects of the data system.

## **Administrative System**

The GEM program requires a considerable amount of administrative choreography to ensure correct and diligent administrative function for its proposal cycle. An effort exists, started by data management staff, to automate these administrative duties to expedite the administrative processes associated with the GEM project cycle and improve efficiency. The administrative system can be broken down into three distinct parts which can be developed concurrently.

### **Review System**

The peer review process was moved in-house with the FY 03 proposal cycle (prior to this time, peer review was handled by an outside contractor). An automated peer review system is currently being developed. Dynamic web applications have been developed to allow potential reviewers to classify their areas of expertise according to the GEM specialty lists. Future efforts in this sector will include an application for matching up peer reviewers with proposals that have common specialty areas. In addition, an application for peer reviewers to submit their reviews online is also in the works. Projected completion times for these applications will coincide with the FY 03 proposal cycle. The entire review system is scheduled for completion by July 2003.

### **Document System**

Currently an electronic filing scheme exists for the organization and storage of documents associated with projects. An effort is underway to create a relational database system for the further classification of these documents. The system will assist in the posting of these documents on the web and aid in the general organization of these materials. This system will be fully developed with a web interface to search for materials by March 2004.

### **Proposal Process System**

The proposal process is being automated through the development of an online proposal application system. Project proposers will file their proposals online, reducing the administrative responsibilities of the GEM staff. Automation of this process will also further expedite the assigning of peer reviewers and the production of automated reports. Implementation of the online proposal system will coincide with the FY 05 proposal process.

# GEM RESEARCH PLAN

## I. NEED FOR THE PROJECT

### A. Statement of Problem

Over the years, a vast array of scientific literature has been produced as a result of the *Exxon Valdez* oil spill and subsequent restoration and GEM programs. ARLIS serves as a repository of all reports and publications generated as a result of the restoration and research process, provides guidance to the principal investigators regarding preparation of the reports, and distributes the reports to individuals and libraries as appropriate. ARLIS also supplies the principal investigators with research materials and reference service pertinent to their restoration and GEM projects.

All research begins with identifying and compiling existing information. This is especially true of the restoration process and GEM program, wherein a review of current knowledge is built into the research process. ARLIS's comprehensive natural and cultural resources collection provides access to current and historic information, some of which is available nowhere else. Materials not available directly from ARLIS are borrowed from other libraries, making comprehensive access to information possible for researchers.

The ARLIS collection contains 150,000 books, including agency publications, technical reports, and masters and doctoral theses, 700 journals, maps and atlases, legal reference materials, federal and state documents, public review documents, administrative records, videotapes, audiotapes, slides, photographs, electronic databases, environmental education kits, and a circulating collection of furs, skulls, and mounted birds. These materials are cataloged in a global bibliographic database making most circulating items accessible to users around the world. The library catalog is available for searching at the ARLIS website at [www.arlis.org](http://www.arlis.org).

ARLIS provides universal access to Alaska natural and cultural resources information. Since it was established in October 1997, ARLIS annually receives 21,000 visitors, responds to 15,000 requests for information, performs over 15,000 interlibrary loans and circulates 14,000 books.

Approximately 15% of the use of the library is directly related to the *Exxon Valdez* oil spill and the Trustee Council's restoration and GEM programs. In addition, 15% of the materials borrowed by other libraries from ARLIS are EVOS materials.

The 10<sup>th</sup> anniversary of the *Exxon Valdez* oil spill in 1999 brought an increase in public and media attention to the spill and subsequent restoration and research efforts. It is anticipated that the 15<sup>th</sup> anniversary in 2004 will bring a similar increase and require more librarian time devoted to meeting the information needs of the media, students, and the public. Funding for Project 040550 will support 1.75 FTE librarians to meet this increased need. Funding in FY 05 and FY 06 will support 2 FTE librarians to meet the ongoing information and research needs of the Trustee Council staff, the Public Advisory Committee, GEM researchers, resource managers, and the general public.

## **B. Relevance to GEM Program Goals and Scientific Priorities**

Project 040550 provides essential support to implement the GEM program. The Trustee Council's policies, as specified in the *Restoration Plan* and the GEM Program Document, include a strong commitment to public information. ARLIS ensures that findings and results of research and restoration efforts are available to the public, scientists, and agency staff to help understand the status of injured resources and services, plan for future restoration, research and monitoring, and provide documentation of a body of scientific research on which future studies can build. The ARLIS staff provides reference service, literature searches, and document delivery to Trustee Council staff and principal investigators creating documents and databases for the GEM program.

While ARLIS facilitates implementation of all GEM goals through support provided to researchers, the library's mission (stated below) and established networks, partnerships, and procedures make it particularly well suited to be a vehicle for accomplishing Goal 3, "Inform: Provide integrated and synthesized information to the public, resource managers, industry and policy makers in order for them to respond to changes in natural processes."

**ARLIS Mission Statement: Alaska Resources Library and Information Services** provides universal access to natural and cultural resources information. The library staff and ARLIS's federal, state, university, and future partners recognize that improved understanding of Alaska's resources facilitates wise development, conservation and management. ARLIS serves the diverse information needs of its customers in an unbiased and effective manner.

Libraries provide value to researchers through comprehensive access to materials through extensive subject indexing and complete item description. In recognition of the need for accessibility, the National Research Council's comments and recommendations for the GEM program (NRC, 2002:83) point to the importance of comprehensive data and information management. Such an effort should include both physical and electronic accessibility, permanent storage for print resources resulting from and important to the program, cataloged access to electronic resources for and generated by research, and reference service for both researchers and those seeking to use the results of the research.

## **II. PROJECT DESIGN**

### **A. Objectives**

- Objective 1. Support the research efforts and information needs of the Trustee Council Office staff, the principal investigators, resource managers, and the general public through reference service, document delivery, and acquisition of relevant materials.
- Objective 2. Provide reliable, permanent access to EVOS, restoration, and GEM program information and materials for local, state, national, and international users.



## **B. Procedural and Scientific Methods**

Objective 1. Support the research efforts and information needs of the Trustee Council Office staff, the principal investigators, and the general public through reference service, document delivery, and acquisition of relevant materials.

ARLIS provides access to information through participation in library networks and a global bibliographic database. Through cooperative collection development efforts, appropriate books, technical reports, journals, gray literature, videotapes, maps, and other materials are acquired and cataloged. A web accessible library catalog, through a partnership with the University of Alaska Anchorage/Alaska Pacific University Consortium Library and the Anchorage Municipal Libraries, provides worldwide access to ARLIS materials through interlibrary loan services. Thousands of fulltext publications are available through web links in the catalog record. Reference service is provided on-site and off-site via phone, mail, fax and email. Local and remote founding agency patrons receive document delivery of in-house materials and books and journal articles obtained from libraries throughout the world. The library provides in-house access to topical databases to the general public and desktop access to agency users. Additional databases are available through a partnership with the UAA/APU Consortium Library.

Objective 2. Provide reliable, permanent access to EVOS, restoration, and GEM program information and materials for local, state, national, and international users.

In addition to print materials, ARLIS has cataloged thousands of web-based documents and publications. In the process, the staff has encountered the instability of electronic documents on the web. Documents change location; new versions replace earlier versions; documents disappear completely. Electronic documents are often comprised of multiple files, as many as fifty for large documents, and getting the complete document is not assured. ARLIS catalogers use national standards and practices to catalog electronic documents completely and accurately. Broken links are tracked to ensure the catalog records contain current URLs. In addition, housing EVOS, restoration and GEM print materials at ARLIS circumvents the unreliability of web-based documents and associated hardware/software obsolescence and incompatibility issues, and ensures permanent access to these important materials.

## **C. Data Analysis and Statistical Methods**

ARLIS keeps detailed statistics on library use, including the number of visitors, requests for information, interlibrary loan transactions, items cataloged, books circulated, and web site use, which are analyzed to identify changes and trends in library use. These statistics are presented regularly to the ARLIS Founders Board, of which the EVOS TC Executive Director is a member.

## **D. Description of Study Area**

ARLIS serves GEM researchers in all study areas, and provides EVOS and GEM related information and materials to users nationwide and throughout the world.

#### **E. Coordination and Collaboration with Other Efforts**

**ARLIS is a partnership:** ARLIS is a consolidation of eight libraries and information centers from state and federal agencies and a university institute:

Alaska Department of Fish and Game  
Bureau of Land Management  
Environment and Natural Resources Institute (UAA)  
Exxon Valdez Oil Spill Trustee Council  
Fish and Wildlife Service  
Minerals Management Service  
National Park Service  
U.S. Geological Survey

The University of Alaska Anchorage is also a partner, although its library collection is not a part of ARLIS, as is the U.S. Army Fort Richardson Environmental Division. Representatives of the eight founding agencies comprise the ARLIS Founders Board, which is responsible for policy and budget decisions for the library. The EVOS TC Executive Director is a member of the Founders Board.

**Shared library catalog:** ARLIS shares a library catalog with the Anchorage Municipal Libraries, the UAA/APU Consortium Library, and the Anchorage Museum of History and Art Library. The holdings of all partner libraries can be searched 24 hours a day by anyone with Internet access. A cooperative borrowing agreement allows patrons to use library cards issued from one partner library at all other partner libraries.

**Statewide virtual reference service:** ARLIS is also a partner in a statewide collaboration to bring virtual library reference service to Alaska. Funded by grant money from the Alaska State Library, the "Ask an Alaska Librarian" service will be launched in the summer of 2003 by reference staff at ARLIS, Alaska State Library, Anchorage Municipal Library, Juneau Public Library, Fairbanks North Star Borough Library, UAA/APU Consortium Library, University of Alaska Fairbanks Elmer E. Rasmuson Library, and University of Alaska Southeast William A. Egan Library. The service will provide live, online, interactive reference service to remote users throughout the state and elsewhere. Initial hours of operation will be limited, however, the ultimate goal is to offer virtual reference service 24 hours a day, 7 days a week through the combined efforts of the partnership.

**Data management:** As stated in the *GEM Program Invitation Booklet for FFY 04*, "Data Management and Information Transfer provides the essential function of extracting the full scientific and societal benefits from GEM projects." Accessibility to findings and results of GEM research is key to maximizing the research benefit. ARLIS complements the data management functions by serving as a permanent repository for print materials, providing

cataloged access to electronic resources, and facilitating the dissemination of GEM information. ARLIS serves as a two-way channel providing information service to the researchers and a means of conveying research findings and results to those in need of the information.

### **III. SCHEDULE**

#### **A. Project Milestones**

Objective 1. Support the research efforts and information needs of the Trustee Council Office staff, the principal investigators, resource managers, and the general public through reference service, document delivery, and acquisition of relevant materials.

On-going.

Objective 2. Provide reliable, permanent access to EVOS, restoration, and GEM program information and materials for local, state, national, and international users.

On-going.

#### **B. Measurable Project Tasks**

FY 04, 1st quarter (October 1, 2003-December 31, 2003)

October: Project funding approved by Trustee Council

FY 04, 2nd quarter (January 1, 2004-March 31, 2004)

January 12-16 (tentative): Annual GEM Workshop

January: Quarterly report of library usage/projects for FY 04, 1<sup>st</sup> Quarter

FY 04, 3rd quarter (April 1, 2004-June 30, 2004)

April 30: Quarterly report of library usage/projects for FY 04, 2<sup>nd</sup> Quarter

FY 04, 4th quarter (July 1, 2004-September 30, 2004)

July: Quarterly report of library usage/projects for FY 04, 3<sup>rd</sup> Quarter

FY 05, 1st quarter (October 1, 2004-December 31, 2004)

October: Quarterly report of library usage/projects for FY 04, 4<sup>th</sup> Quarter

FY 05, 2nd quarter (January 1, 2005-March 31, 2005)

(dates not yet known) Annual GEM Workshop

January: Quarterly report of library usage/projects for FY 05, 1<sup>st</sup> Quarter

FY 05, 3rd quarter (April 1, 2005-June 30, 2005)

April: Quarterly report of library usage/projects for FY 05, 2<sup>nd</sup> Quarter

FY 05, 4<sup>th</sup> quarter (July 1, 2005-September 30, 2005)

July: Quarterly report of library usage/projects for FY 05, 3<sup>rd</sup> Quarter

FY 06, 1st quarter (October 1, 2005-December 31, 2005)

October: Quarterly report of library usage/projects for FY 05, 4<sup>th</sup> Quarter

FY 06, 2nd quarter (January 1, 2006-March 31, 2006)

(dates not yet known): Annual GEM Workshop

January: Quarterly report of library usage/projects for FY 06, 1<sup>st</sup> Quarter

FY 06, 3rd quarter (April 1, 2006-June 30, 2006)

April: Quarterly report of library usage/projects for FY 06, 2<sup>nd</sup> Quarter

FY 04, 4th quarter (July 1, 2004-September 30, 2004)

July: Quarterly report of library usage/projects for FY 06, 3<sup>rd</sup> Quarter

On-going tasks that apply to both objectives throughout each fiscal year:

1. Review and approve format of final reports, maintain a list of completed reports, and distribute reports to appropriate libraries and the National Technical Information Service; catalog reports in a global bibliographic database for access throughout the world.
2. Maintain for public review the public record copy of the Trustee Council official record.
3. Maintain for public access a file of peer reviewed journal articles and conference papers resulting from Trustee Council funded research.
4. Provide reference service for EVOS, restoration, and GEM related topics and other information needs to the Trustee Council Office staff, science review staff, principal investigators, public advisory committee, media, students and faculty, spill area residents, resource agency professionals, and the general public.
5. Acquire and catalog publications generated by the Trustee Council.
6. Acquire and catalog other oil spill, restoration, and monitoring related materials deemed appropriate for the collection and necessary to support the restoration process and GEM program research.
7. Maintain an annotated list of web sites relevant to EVOS, the restoration process, and the GEM program.
8. Annually update related topic bibliographies for the Trustee Council web site.
9. Provide monthly reports to the Trustee Council Office on the status of the report format review and distribution process.
10. Provide quarterly reports and an annual summary of library usage statistics and staff projects.

#### **IV. RESPONSIVENESS TO KEY TRUSTEE COUNCIL STRATEGIES**

##### **A. Community Involvement and Traditional Ecological Knowledge (TEK)**

Project 040550 supports various aspects of community involvement. As a public facility that is well used by the community, ARLIS is in the forefront with assisting the general public and spill community residents to learn about the restoration process and GEM program. One particular focus of the ARLIS collection is materials that document the use, interpretation, and compilation of traditional ecological knowledge. ARLIS also provides research support to those principal investigators conducting research in the areas of subsistence and traditional ecological knowledge.

## **B. Resource Management Applications**

ARLIS was created in 1997 by the directors of resource management agencies to better serve existing information needs in the agencies. Several of these agencies (FWS, ADF&G, MMS) have direct ties to the management of marine resources. All ARLIS agencies address the impacts of human activities on the resources they manage as part of their normal agency operations. ARLIS reference librarians collaborate with and assist resource management agency staff on a daily and ongoing basis with research needs and project objectives. ARLIS staff continually develop additional tools and acquire advancing information technologies to assist agency staff in fulfilling information needs. Through the ARLIS Founders Board, via a direct collaboration with agency directors, this project perpetuates the development of resource management applications in ARLIS's area of specialization.

## **V. PUBLICATIONS AND REPORTS**

ARLIS is not requesting funding for publication.

## **VI. PROFESSIONAL CONFERENCES**

ARLIS is not requesting funding for travel to professional conferences. ARLIS principal investigators will attend the annual GEM workshop.

## Carrie Holba

Alaska Resources Library & Information Services (ARLIS)  
3150 C Street, Suite 100  
Anchorage, Alaska 99503

(907) 27-ARLIS (272-7547) reference desk  
(907) 271-4511 office  
(907) 271-4742 fax  
[carrie@arlis.org](mailto:carrie@arlis.org)

Ms. Holba holds a masters degree in Library and Information Science. In February 1991, she joined the staff of the Oil Spill Public Information Center (OSPIC), serving as public services librarian and then as director since 1992. Since OSPIC was consolidated with ARLIS in October 1997, Ms. Holba has served as reference services coordinator and a member of the ARLIS library management team, and continues to specialize in EVOS related reference service. She is employed by the Alaska Department of Fish and Game, with funding from the EVOS Trustee Council.

### Professional Experience:

Alaska Resources Library & Information Services (ARLIS)	1997 - present
Management team (1997 - present)	
Reference Services Coordinator (1997 - present)	
Oil Spill Public Information Center (OSPIC)	1991 - 1997
Director (1992 - 1997)	
Public Services Librarian (1991 - 1992)	

### Education:

Master of Library and Information Science (MLIS)  
University of Wisconsin - Milwaukee, 1988

Bachelor of Science in Early Childhood Education (BS ECED)  
University of Wisconsin - Milwaukee, 1979

### Publications:

Holba, C., M. McGee, and P. Thompson. 1993. Oil Spill Public Information Center: its role in the flow of information on the *Exxon Valdez* oil spill. Page 866 in 13<sup>th</sup> International Oil Spill Conference: Prevention, Preparedness, Response: Proceedings, March 29 - April 1, 1993, Tampa, Florida, American Petroleum Institute, 4580.

### Collaborations:

ARLIS Management Team:  
Juli Braund-Allen, UAA's Environment and Natural Resources Institute  
Christine Huffaker, Minerals Management Service

Celia Rozen, Alaska Department of Fish and Game  
Nancy Tileston, U.S. Fish and Wildlife Service  
Cathy Vitale, Bureau of Land Management

**Statewide Virtual Reference Service Team:**

Mary Ellen Baker, Fairbanks North Star Borough Library  
Cate Burnstead, Juneau Public Library  
Rheba Dupres, UA Fairbanks, Elmer E. Rasmuson Library  
Carrie Keene, Anchorage Municipal Libraries  
Mike Mitchell, Alaska State Library  
Peg Thompson, Anchorage Municipal Libraries  
Elise Tomlinson, UA Southeast, William A. Egan Library

**DRA Joint Public Access Catalog Work Group:**

Trina Carter, UAA/APU Consortium Library  
Susan Elliott, UAA/APU Consortium Library  
Carrie Keene, Anchorage Municipal Libraries  
Peg Thompson, Anchorage Municipal Libraries

**DRA Circulation Work Group:**

Robin Hanson, UAA/APU Consortium Library  
Peg Thompson, Anchorage Municipal Libraries

**Professional Affiliations:**

American Library Association  
Special Libraries Association  
Alaska Library Association

**Awards:**

2001 *National Award for Museum and Library Service* - the only national level award for library service; awarded by the Institute of Museum and Library Service, for innovation, partnership, and excellence in library service, and presented by First Lady Laura Bush.

2001 *Alaska State Legislative Citation* - honoring ARLIS for the National Award for Museum and Library Service.

1997 *National Performance Review "Golden Hammer" Award* from Vice President Al Gore - for the Alaska Natural Resources Library Group's efforts to establish ARLIS for efficiency in cost and function.

## Celia M. Rozen

3711 Amber Bay Loop  
Anchorage, Alaska 99515  
(907) 271-4560  
[celia@arlis.org](mailto:celia@arlis.org)

### **Current position:**

Collection Development Coordinator  
Alaska Resources Library & Information Services  
Employer: Alaska Department of Fish and Game

### **Publications:**

Fink, Mark, Celia Rozen, and Glenn Seaman. 1993. Nonregulatory Mechanisms for Habitat Protection: Section 309 Grant Project: Assessment and Control of Cumulative Impacts of Coastal Uses on Fish Habitat of the Kenai River. Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

Forrest, Celia. 1984. Index to the Petersburg Newspapers, 1913-1916. Alaska Historical Commission, Juneau, Alaska.

Parry, Betsy L., Celia M. Rozen, and Glenn A. Seaman. 1993. Restoration and Enhancement of Aquatic Habitats in Alaska: Project Inventory, Case Study Selection, and Bibliography. Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

Rozen, Celia. 1993. Bibliography of Kenai River Studies. Alaska Department of Fish and Game, Habitat and Restoration Division, Anchorage, Alaska.

### **Education:**

University of Alaska Anchorage  
B.A. Justice and Paralegal Studies, 1992

### **Affiliations:**

Alaska Library Association

### **Collaborations:**

ARLIS Management Team:

Juli Braund-Allen, UAA's Environment and Natural Resources Institute  
Carrie Holba, *Exxon Valdez* Oil Spill Trustee Council  
Christine Huffaker, Minerals Management Service  
Nancy Tileston, U.S. Fish and Wildlife Service  
Cathy Vitale, Bureau of Land Management



Statewide Database Selection Advisory Committee

Collaborators: Barbara Berg, Rheba Dupras, David Ongley, June Pinnell-Stevens, Steve Rollins, Robin Turk, Heike Wilmoth, Mary Ellen Wilson

Nutrient and Energy Pathways in the Kenai River Watershed. EVOS Project 030684.

Collaborators: Bob Clark, William Hauser, Mark Johannes

DRA Cataloging/Acquisitions Work Group: Loussac Library, University of Alaska Anchorage/Alaska Pacific University Consortium Library, and Anchorage Museum of History and Art collection development and cataloging staff.

**Awards:**

2001 *National Award for Museum and Library Service* - the only national level award for library service; awarded by the Institute of Museum and Library Service, for innovation, partnership, and excellence in library service, and presented by First Lady Laura Bush.

2001 *Alaska State Legislative Citation* - honoring ARLIS for the National Award for Museum and Library Service.

1997 *National Performance Review "Golden Hammer" Award* from Vice President Al Gore - for the Alaska Natural Resources Library Group's efforts to establish ARLIS for efficiency in cost and function.

1989 Alaska Department of Fish and Game Habitat Employee of the Year. Awarded for meritorious service in organizing the library and providing services to staff.

## **OTHER KEY PERSONNEL**

Although ARLIS was established as a cost saving measure in response to state and federal budget cuts, the resulting library provides a vastly more comprehensive collection of Alaska resource information in a single location, served by highly qualified staff specializing in resource related information. As a founding agency of ARLIS, the Trustee Council benefits from the combined services of the library staff, including reference librarians, interlibrary loan staff, collection development staff, catalogers, and web development specialists, all trained to meet the information needs of founding agency staff. ARLIS is a recipient of the 1997 National Performance Review "Golden Hammer" Award and the 2001 National Award for Museum and Library Service, for innovation, partnership, and excellence in library service.

## **GEM PROJECT BUDGET JUSTIFICATION**

**TITLE:** Alaska Resources Library and Information Services (ARLIS)

**PROJECT:** 040550

This budget is for the Trustee Council contribution to funding for the Alaska Resources Library and Information Services (ARLIS). With the exception of Fiscal Year 1994, this activity has historically been funded under the Public Information, Science Management, and Administration Budget (Project /100). Funding as a separate project began in Fiscal Year 2001, as Project 01550.

Established in 1997, ARLIS is a consolidation of eight libraries focused on Alaska natural and cultural resources, including the former Oil Spill Public Information Center, and is funded by contributions from its founding agencies: Alaska Department of Fish and Game, Bureau of Land Management, UAA's Environment and Natural Resource Institute, *Exxon Valdez* Oil Spill Trustee Council, U.S. Fish and Wildlife Service, Minerals Management Service, National Park Service, U.S. Geological Survey, and the University of Alaska Anchorage. The U.S. Army, Fort Richardson Environmental Division is a contributing partner.

### **FY 04 Project 040550**

**Personnel:** Funding covers salary and employer costs through the Alaska Department of Fish and Game, Division of Administration, for one FTE Librarian III, Carrie Holba, at Range 19, \$7,500 per month for 12 months, for a total cost of \$90,000.

**Travel:** None.

**Contractual:** Funding covers salary and employer costs through the Alaska Department of Fish and Game, Division of Sport Fish, for one FTE Librarian II, Celia Rozen, at Range 17, \$6,400 per month for 9 months, for a total cost of \$57,6000.

**Commodities:** None.

**Equipment:** None.

**General Administration:** \$13,300 (9% of the subtotal of Personnel and Contractual).

**FY 04 Project Total:** \$160,900.

### **FY 05 - Project 050550**

**Personnel:** Funding covers salary and employer costs through the Alaska Department of Fish and Game, Division of Administration, for one FTE Librarian III, Carrie Holba, at Range 19, \$7,500 per month for 12 months, for a total cost of \$90,000.

**Travel:** None.

**Contractual:** Funding covers salary and employer costs through the Alaska Department of Fish and Game, Division of Sport Fish, for one FTE Librarian II, Celia Rozen, at Range 17, \$6,400 per month for 12 months, for a total cost of \$76,800.

**Commodities:** None.

**Equipment:** None.

**General Administration:** \$15,000 (9% of the subtotal of Personnel and Contractual).

**FY 05 Project Total:** \$181,800.

**FY 06 - Project 060550**

**Personnel:** Funding covers salary and employer costs through the Alaska Department of Fish and Game, Division of Administration, for one FTE Librarian III, Carrie Holba, at Range 19, \$7,500 per month for 12 months, for a total cost of \$90,000.

**Travel:** None.

**Contractual:** Funding covers salary and employer costs through the Alaska Department of Fish and Game, Division of Sport Fish, for one FTE Librarian II, Celia Rozen, at Range 17, \$6,400 per month for 12 months, for a total cost of \$76,800.

**Commodities:** None.

**Equipment:** None.

**General Administration:** \$15,000 (9% of the subtotal of Personnel and Contractual).

**FY 06 Project Total:** \$181,800.

**FY 04 - 06 Project Total:** \$524,500.

**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL  
DETAILED BUDGET FORM FY 04 - FY 06**

Budget Category:	Proposed FY 04	Proposed FY 05	Proposed FY 06	TOTAL PROPOSED
Personnel	\$90.0	\$90.0	\$90.0	\$270.0
Travel	\$0.0	\$0.0	\$0.0	\$0.0
Contractual	\$57.6	\$76.8	\$76.8	\$211.2
Commodities	\$0.0	\$0.0	\$0.0	\$0.0
Equipment	\$0.0	\$0.0	\$0.0	\$0.0
Subtotal	\$147.6	\$166.8	\$166.8	\$481.2
General Administration (9% of Subtotal)	\$13.3	\$15.0	\$15.0	\$43.3
Project Total	\$160.9	\$181.8	\$181.8	\$524.5

**Cost-share Funds:**

This budget is for the Trustee Council contribution to funding for the Alaska Resources Library and Information Services (ARLIS). With the exception of Fiscal Year 1994, this activity has historically been funded under the Public Information, Science Management, and Administration Budget (Project /100). Funding as a separate project began in Fiscal Year 2001, as Project 01550.

Established in 1997, ARLIS is a consolidation of eight libraries focused on Alaska natural and cultural resources, including the former Oil Spill Public Information Center, and is funded by contributions from its founding agencies: Alaska Department of Fish and Game, Bureau of Land Management, UAA's Environment and Natural Resource Institute, *Exxon Valdez* Oil Spill Trustee Council, U.S. Fish and Wildlife Service, Minerals Management Service, National Park Service, U.S. Geological Survey, and the University of Alaska Anchorage. The U.S. Army, Fort Richardson Environmental Division is a contributing partner.

**FY 04-  
06**

Date Prepared:

Project Number: 040550  
Project Title: ARLIS - Alaska Resources Library &  
Information Services  
Agency: Alaska Department of Fish and Game

**FORM 3A  
TRUSTEE  
AGENCY  
SUMMARY**

**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL  
DETAILED BUDGET FORM FY 04 - FY 06**

<b>Personnel Costs:</b>		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Personnel Sum
Name	Description					
C Holba	Librarian III	19	12.0	7.5		90.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			12.0	7.5	0.0	
<b>Personnel Total</b>						\$90.0

<b>Travel Costs:</b>		Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum
Description						
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
<b>Travel Total</b>						\$0.0

**FY 04**

Project Number: 040550  
 Project Title: ARLIS - Alaska Resources Library &  
 Information Services  
 Agency: Alaska Department of Fish and Game

**FORM 3B  
 Personnel  
 & Travel  
 DETAIL**

<b>Contractual Costs:</b>						<b>Contract Sum</b>
Description						
C Rozen	Librarian II	17	9.0	6.4		57.6
If a component of the project will be performed under contract, the 4A and 4B forms are required.						
<b>Contractual Total</b>						\$57.6
<b>Commodities Costs:</b>						<b>Commodity Sum</b>
Description						
<b>Commodities Total</b>						\$0.0

Project Number: 040550  
Project Title: ARLIS - Alaska Resources Library & Information Services  
Agency: Alaska Department of Fish and Game

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[illegible]

Project Number: 040550  
Project Title: ARLIS - Alaska Resources Library & Information Services  
Agency: Alaska Department of Fish and Game

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**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL  
DETAILED BUDGET FORM FY 04 - FY 06**

<b>Personnel Costs:</b>		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Personnel Sum
Name	Description					
C Holba	Librarian III	19	12.0	7.5		90.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			12.0	7.5	0.0	
<b>Personnel Total</b>						\$90.0

<b>Travel Costs:</b>		Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum
Description						
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
<b>Travel Total</b>						\$0.0

**FY 05**

Project Number: 050550  
 Project Title: ARLIS - Alaska Resources Library &  
 Information Services  
 Agency: Alaska Department of Fish and Game

**FORM 3B  
Personnel  
& Travel  
DETAIL**

[illegible]

Project Number: 050550  
Project Title: ARLIS - Alaska Resources Library & Information Services  
Agency: Alaska Department of Fish and Game

**FORM 3B**  
**Contractual &**  
**Commodities**  
**DETAIL**

[illegible]

Project Number: 050550  
Project Title: ARLIS - Alaska Resources Library & Information Services  
Agency: Alaska Department of Fish and Game

7 of 10

**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL  
DETAILED BUDGET FORM FY 04 - FY 06**

<b>Personnel Costs:</b>		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Personnel Sum
Name	Description					
C Holba	Librarian III	19	12.0	7.5		90.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			12.0	7.5	0.0	
<b>Personnel Total</b>						<b>\$90.0</b>

<b>Travel Costs:</b>		Ticket Price	Round Trips	Total Days	Daily Per Diem	Travel Sum
Description						
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
<b>Travel Total</b>						<b>\$0.0</b>

**FY 06**

Project Number: 060550  
Project Title: ARLIS - Alaska Resources Library & Information Services  
Agency: Alaska Department of Fish and Game

**FORM 3B  
Personnel  
& Travel  
DETAIL**

**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL**  
**DETAILED BUDGET FORM FY 04 - FY 06**

[illegible]

FY 06

Project Number: 060550  
Project Title: ARLIS - Alaska Resources Library & Information Services  
Agency: Alaska Department of Fish and Game

**FORM 3B**  
**Contractual &**  
**Commodities**  
**DETAIL**

**EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL**  
**DETAILED BUDGET FORM FY 04 - FY 06**

[illegible]**FY 06**

Project Number: 060550  
Project Title: ARLIS - Alaska Resources Library & Information Services  
Agency: Alaska Department of Fish and Game

FORM 3B  
Equipment  
DETAIL

## SCIENTIFIC MANAGEMENT UNDER GEM AND LINGERING OIL PROGRAMS

Project Number: 040630/040630A

Restoration Category: Research/Monitoring

Proposer: Restoration Office / Trustee Council

Lead Trustee Agency: ADF&G (Restoration Office)

Cooperating Agencies: All

Alaska SeaLife Center: No

Duration: Ongoing

Cost FY 04: \$391.6 (\$639.9 without NOS funding)

Cost FY 05: \$ Approximately same

Geographic Area: Spill area wide

Injured Resource/Service: All injured resources and services

### ABSTRACT

This project will provide scientific oversight of the Gulf of Alaska Ecosystem Monitoring and Research (GEM) program and of lingering effects of oil on injured resources. Implementation will be based on the GEM Program Document (GPD), which describes how a network of monitoring and supporting activities will be implemented over a five-year period starting in FY 03 using synthesis, research, and modeling, and how the results will be captured and communicated through data management and information transfer. In FY 04, the project will support the Scientific and Technical Advisory Committee (STAC), three GEM subcommittees (habitat, data management and lingering oil), four workshops for developing GEM and other aspects of the scientific review process, develop the FY04 *Invitation to Submit Proposals*, provide peer review recommendations and scientific support for the FY 04 Work Plan, continue developing a "State of the Gulf Report" and provide regional input to a status report on North Pacific resources now being developed by PICES.

## INTRODUCTION

In conjunction with the 10<sup>th</sup> anniversary of the 1989 *Exxon Valdez* oil spill, the Trustee Council, in March 1999, formally dedicated a portion of the Restoration Reserve to long-term monitoring and research in the spill area and adjacent northern Gulf of Alaska. This project will continue planning for implementing the Trustee Council's vision, now known as the Gulf of Alaska Ecosystem Monitoring and Research program (GEM). In FY 00 a draft scoping document, the Draft GEM Science Program (April 2000), was developed and submitted to the National Research Council (NRC) for preliminary review. This report was preceded and followed by an extensive public involvement process. Meetings to gather advice on the content and future of GEM were held in communities throughout the spill-affected region with stakeholder groups, Alaska Native organizations and tribes, state and federal policy makers, and scientists. This consultation continued into FY 01 with a statewide GEM workshop that drew attendance from throughout the U.S. Building on ideas from the consultations, the workshop and preliminary NRC recommendations, the draft GEM Program Document (GPD), including a draft monitoring and research plan, was produced and forwarded to the NRC for its review in August 2001. The NRC's final report was received in May 2002, revisions to the GEM Program Document were made, and final approval by the Trustee Council was received in July 2002. In FY 04, this project will support the Scientific and Advisory committee (STAC), three subcommittees (habitat data management and information transfer and lingering oil effects), up to four workshops for GEM development, and other aspects of the scientific review and advisory process; support implementation efforts for Alaska Ocean Observing System, AOOS, (formerly CAOS); provide peer review recommendations and scientific support for the FY 04 GEM II Work Plan; develop the FY05 *Invitation to Submit Proposals*; provide peer review recommendations and scientific support for the FY 04 Work Plan; continue developing a "State of the Gulf Report" as well as regional input to a status report on North Pacific resources now being developed by PICES.

## NEED FOR THE PROJECT

### A. Statement of the Problem

In order for the Trustee Council's vision for GEM to be implemented over a five-year period starting in FY 04, the following six activities need to be completed in FY 04: 1) support the STAC, three subcommittees (habitat, data management and lingering oil), four workshops necessary to GEM development, and other aspects of the scientific review and advisory process; 2) support implementation efforts for a Coastal Alaska Observing System (CAOS); 3) provide scientific support for the FY 04 GEM Phase II Work Plan; 4) develop the FY04 *Invitation to Submit Proposals*; 5) support peer review and scientific review process for the FY 04 Work Plan; 6) continue development of "State of the Gulf Report" as well as regional input to a status report on North Pacific resources now being developed by PICES.

### B. Rationale/Link to Restoration

In deciding to allocate a significant portion of the Restoration Reserve for long-term monitoring and research, the Trustee Council explicitly recognized that complete recovery from the oil spill will not occur for decades and that long-term observation and, possibly, restoration actions are needed if injured resources and services are to be fully restored. The Council further recognized that conservation and improved management of these resources and services will require a



substantial ongoing investment to improve understanding of the biology and marine and coastal ecosystems that support the services as well as the people of the spill region. Hence, the Council made a commitment to development of a long-term monitoring and research program for the spill region that will inform and promote the full recovery and restoration, conservation, and improved management of spill-area resources.

### **C. Location**

The transition to the GEM program will occur primarily at the Trustee Council's Office in Anchorage, with input from spill-area communities and key experts outside Alaska. Monitoring and research carried out under GEM will take place mostly in the coastal and marine environment within the oil spill area and, to the extent necessary, in adjacent parts of the northern Gulf of Alaska.

## **COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE**

The incorporation of substantial community involvement and use of traditional ecological knowledge into the overall GEM program is an important goal and strategy to be addressed during this phase of planning for the GEM project. Trustee Council staff will work closely with the Public Advisory Committee, tribes, stakeholder-groups, and other members of the public in order to ensure that community interests are well represented in the plans for long-term monitoring and research. Community and TEK experts will be included as committees and work groups are developed and will be encouraged to participate in workshops as the program develops.

## **PROJECT DESIGN**

### **A. Objectives**

Specific objectives are to:

- 1) Support the Scientific and Advisory committee (STAC), two subcommittees (habitat and data management), workshops necessary to GEM development, and other aspects of the scientific review and advisory process:
  - a) Provide scientific guidance and support to the Scientific and Technical Advisory Committee (STAC), the habitat and data management subcommittees, work groups, and maintain and enhance procedures for peer review and proposal solicitations.
  - b) Maintain the GEM Program Document and associated databases, and publish the GEM Scientific background
  - c) Provide scientific support to the committees in furthering development of the GEM Monitoring and Research Science Plan; including updating and maintaining the GEM gap analysis database and GEM ProCite bibliographies, and holding as many as four workshops necessary to GEM development.
  - d) Assist Data Systems Manager in developing and implementing data and information policies and procedures.

- e) Work with tribes, stakeholders, interested community groups, and existing community-based projects to develop meaningful ways to incorporate traditional ecological knowledge and community involvement and resource management applications into the program.
- f) Consult and coordinate with other marine research efforts to develop a network of partnerships to complement core monitoring efforts, aid in the peer review process, and expand the scope of the GEM Program. Anticipated partners include NEP GLOBEC, USGOOS, CORE, PICES, NPRB, NPAFC, AAAS, the Northern Fund, World Fisheries Congress, and others.
- 2) Support implementation of the Alaska Ocean Observing System, AOOS (formerly CAOS);
- 3) Provide technical and scientific peer review and support for the FY 04 GEM Work Plan;
- 4) Develop the FY05 *Invitation to Submit Proposals*;
- 5) Provide peer review and scientific support for the FY 05 Work Plan;
- 6) Continue developing a "State of the Gulf Report" as well as regional input to a status report on North Pacific resources now being developed by PICES; and

## B. Methods

The methods described below are organized by project objective (in parentheses):

- 1) Support the Scientific and Advisory committee (STAC), two subcommittees (habitat and data management), four workshops necessary to GEM development, and other aspects of the scientific review and advisory process.

This objective will take the combined efforts of the existing Trustee Council staff, including the Science Director and Science Coordinator, as we conclude the transition to the GEM Program. During FY 03, all the administrative functions of the program were reviewed (procedures for issuing invitation for proposals, receiving and reviewing proposals, reporting requirements, project management, etc.). The Trustee Council adopted significant changes in these procedures and policies in FY 03 in order to streamline the program, increase efficiency, reduce costs, and ensure public input and involvement and scientific credibility. The office will continue this review in FY 04. In addition, staff will

- a. Provide scientific guidance and support in working with the Scientific and Technical Advisory Committee (STAC), Habitat, Data Management, and Lingering Oil subcommittees, and work groups. Staff will be instrumental in refining the processes, locating replacement members when needed, and supporting development of the subcommittees. In addition, staff will continue to test and refine automated procedures for peer review and proposal solicitations as a joint effort with the Data Systems Manager.
- b. Provide scientific support to the subcommittees in furthering development of the GEM Monitoring and Research Science Plan. This will include organizing meetings as needed and improving and maintaining the GEM gap analysis database, the GEM and Trustee Council ProCite bibliographies and supporting document collections.
- c. Organize and hold up to four workshops as may be identified by the STAC as necessary for the development of GEM. Workshops are an essential part of the GEM program. Workshops are expected to be needed to clarify aspects of work needing to be done in the habitat types, modeling, lingering oil, data management, community involvement, management applications, and other areas. Work shops

are recommended by the STAC, the subcommittees and the Science Director in response to questions raised during review of proposals and reports.

- d. Assist Data Systems Manager in implementing data and information policies and procedures. Quality data management is a priority for the GEM Program. Working with the Data Management Subcommittee, rescuing previously acquired data, and implementing and refining data and information policies and procedures will involve substantial staff time.
  - e. Work with tribes, stakeholders, interested community groups, and existing community-based projects to develop meaningful ways to incorporate traditional ecological knowledge, community involvement, and resource management applications into the program. Staff will support and participate in the efforts of ongoing projects and planning efforts. Staff will review all project proposals for opportunities for TEK, community involvement and resource management applicability.
  - f. Consult and coordinate with other marine research efforts.
    - i. Develop a network of partnerships. This will be accomplished through participation in CORE and PICES, active memberships on the Alaska SeaLife Center Scientific Advisory Committee, the Science Coordination Panel of the Southeast Sustainable Salmon Fund, the Board of the North Pacific Research Board, the PICES MONITOR Task Team, and the US GOOS Steering Committee, and by attending and making presentations on GEM at meetings of scientific organizations and other marine research institutions including NEP-GLOBEC, NPAFC, AFS, AAAS, AGU, ASLO, KBRR, PWSSC-OSRI, and at academic institutions such as UAF and UAA. In addition, staff will support efforts to establish a formal Memorandum of Agreement with other research and monitoring entities at the Trustee Council's direction.
    - ii. Assist with other meetings. The Trustee Council is frequently asked to contribute to the costs of other scientific and policy meetings and symposia that would be of benefit to the GEM Program. Participation in this manner greatly aids in building partnerships. In FY 04 these include the PICES MONITOR meeting, a joint meeting with the North Pacific Research Board, and planning for the World Fisheries Congress in 2004.
- 2) Continue planning efforts for the Alaska Ocean Observing System, AOOS (formerly CAOS). Staff will participate in developing AOOS through meetings, e-mail.
  - 3) Provide peer review recommendations and scientific support for the FY 04 GEM Work Plan. Staff will organize technical peer review of all proposals and provide recommendations to the STAC. Staff will support STAC review of proposals.
  - 4) Develop the FY05 *Invitation to Submit Proposals*, in consultation with the STAC, the Habitat, Data Management and Lingering Oil subcommittees, the Public Advisory Committee, and other entities.
  - 5) Provide peer review recommendations and scientific support for the FY 04 Work Plan, as in (2) above.
  - 6) Continue development of a "State of the Gulf Report" and provide regional input to a status report on the North Pacific. Working in cooperation with the PICES Secretariat and PICES members, begin developing the "State of the Gulf Report" as part of a larger north Pacific effort now being organized and coordinated by the PICES Secretariat.

### **C. Cooperating Agencies, Contracts, and Other Agency Assistance**

Federal and state resource agencies will be actively involved in further development of GEM, as will other institutions, particularly the scientific committees involved with planning and implementing monitoring and research in the North Pacific Ocean. These include, for example, the North Pacific Research Board, the North Pacific Marine Science Organization (PICES), the North Pacific Anadromous Fish Commission (NPAFC), the Northern Fund, the Southeast Sustainable Salmon Fund, the Global Oceans Ecosystems Dynamics (GLOBEC) Northeast Pacific Project funded by NOAA and NSF, the Ocean Carrying Capacity (OCC) study of the National Marine Fisheries Service (NMFS), the Fisheries and Oceanography Coordinated Investigations (FOCI) of NMFS-PMEL, and other NOAA entities.

## **SCHEDULE**

### **A. Measurable Project Tasks**

October 2003: Present draft FY 04 Work Plan to Council for adoption  
October 2003: Participate in PICES MONITOR task team meeting to develop contents of the State of the Gulf and State of the North Pacific Reports  
October 2003: Initiate development of FY 05 Invitation and solicit comments on Science Plan  
November 2003: Receive and organize comments on Invitation and Science Plan and distribute to PAC, STAC, and subcommittees  
November 2003: Review and update gap analysis database  
January 2004: Hold joint meeting of Public Advisory Committee and Habitat Subcommittee.  
January 2004: EVOS Annual Meeting in conjunction with NPRB  
January 2004: STAC meeting on FY 05 Science Plan and Invitation  
February 2004: Issue FY 05 Invitation for proposals  
March 2004: Review and improve peer reviewer database in preparation for FY 04 proposal review process.  
March 2004: Issue inquiry of interest and availability for peer review  
April 2004: Receive proposals for FY 05 and distribute to STAC  
April 2004: Process FY 04 proposals, conduct peer review of proposals, develop staff comments on proposals, assign STAC members to review proposals.  
May 2004: Distribute peer reviews to STAC  
May 2004: STAC meeting to review of FY 05 proposals and develop recommendations for FY 04 work plan.  
June 2004: Circulate Draft FY 05 Work Plan for review  
July 2004: Respond to comments on FY 05 Work Plan, produce Council's draft  
August 2004: Present draft FY 05 Work Plan to Council for adoption  
September 2004: Initiate development of FY 06 Invitation and solicit comments on Science Plan

### **B. Project Milestones and Endpoints**

Objective 1: STAC recommendations for FY 05 projects. Obtain recommendations for FY 04-05 Science Plans and Invitations from PICES MONITOR Task Team meeting. Obtain STAC and subcommittee recommendations on FY 05 Invitation for Proposals and Science Plan. Obtain recommendations for FY 05 Invitations and Science Plan from workshops when necessary.

- Objective 2: Implementation of AOOS office, database and project planning activities  
Objective 3: Scientific recommendations for FY 04 Work Plan  
Objective 4: Develop the FY04 *Invitation to Submit Proposals*.  
Objective 5: Peer review recommendations and scientific support for the FY 05 GEM Work Plan.  
Objective 6: Continued development of "State of the Gulf Report" and pilot status report on the North Pacific now being developed by PICES.

**C. Completion Date**

This project provides ongoing scientific support and management for the GEM and Lingering Oil Programs.

**PUBLICATIONS AND REPORTS**

The products of this project will be the FY 05 Invitation for Proposals, the FY 04-05 Work Plan, a report on the FY 04 peer review process, continued development of the GEM Science Plan, reports or memoranda summarizing the outcome of the four workshops, occasional reports and memoranda from the STAC and subcommittees, and the beginnings of a State of the Gulf Report. No additional reports will be required and no additional publications are expected.

**PROFESSIONAL CONFERENCES**

For the purposes of coordination with, and dissemination of information to, other scientists the GEM Program will use the annual PICES and NPAFC meetings, the U.S. GOOS Steering Committee meetings, GLOBEC principal investigators meetings, the American Fisheries Society National Meeting, and other local and regional scientific meetings. Attendance at additional professional conferences may be required for coordination and integration with other programs.

**NORMAL AGENCY MANAGEMENT**

A program providing coordinated and integrated long-term monitoring and research is beyond the normal management capacity of federal and state agencies.

**COORDINATION AND INTEGRATION OF RESTORATION EFFORT**

This project will be fully coordinated with and among Trustee agencies, scientific peer reviewers, the Public Advisory Committee, and other regional monitoring and research efforts.

**PROPOSED PRINCIPAL INVESTIGATORS**

Dr. Phil Mundy, Science Director  
*Exxon Valdez* Oil Spill Trustee Council

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Anchorage, Alaska 99501  
907-278-8012  
907-276-7178 (fax)  
[phil\\_mundy@oilspill.state.ak.u](mailto:phil_mundy@oilspill.state.ak.u)

Dr. Robert Spies, Chair  
Lingering Oil Effects Subcommittee  
Exxon Valdez Oil Spill Trustee Council  
Applied Marine Sciences  
4749 Bennett Drive, Suite L  
Livermore, California 94550  
925-373-7142  
925-373-7834 (fax)  
[spies@amarine.com](mailto:spies@amarine.com)

TBD, Science Coordinator  
*Exxon Valdez* Oil Spill Trustee Council  
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Anchorage, Alaska 99501  
907-278-8012  
907-276-7178 (fax)  
[katharine\\_miller@oilspill.state.ak.us](mailto:katharine_miller@oilspill.state.ak.us)

Dr. Mundy has 29 years of experience as a fisheries scientist, including 25 years in Alaskan fisheries research and management. As Science Director, Phil has been key to development of the Gulf Ecosystem Monitoring (GEM) program. He has worked as a reviewer of research on the oil spill since 1989.

Dr. Spies has 35 years of experience as a scientist in marine ecology, marine pollution and toxicology, the effects of petroleum on marine organisms, and benthic ecology. He is president of Applied Marine Sciences, Inc. and has been the Trustee Council's Chief Scientist since 1991.

## **Project 040630 – BUDGET JUSTIFICATION**

### **ADF&G/Trustee Council Office Component**

#### **Personnel (\$18.6)**

Science Coordinator (3 months salary at Range 20 Step B, \$18.6) (NOS grant provides 9 months of salary, \$55.8) - Position currently vacant. Intend to hire; position description needs to be finalized with new Executive Director. Budgeted amount assumes full-time position is filled by Oct. 1, 2003 at a Range 20 Step B.

#### **Travel (\$56.4)**

TC Office science staff (\$16.7) – Based on FY 03 actual expenses, which included travel to Fairbanks, Juneau, Kodiak, Cordova, Homer, Seward, Seattle, Washington D.C., Seoul Korea, and Vancouver Canada to participate in various PICES, lingering oil, GLOBEC leadership, World Ocean, American Fisheries workshops and meetings.

STAC (\$6.4) (NOS grant \$8.0) – Based on FY 03 actual expenses, which included Scientific Advisory Committee members travel to proposal review meeting, Annual Workshop, subcommittee, Public Advisory Committee and GEM planning meetings.

Subcommittee meetings, GEM planning meetings, workshops (\$39.5) – Based on FY 03 actual expenses, which include travel expenses for 10 out of town Habitat and GEM subcommittees members, workshop panelists and speakers.

#### **Contractual (\$173.8)**

Annual Workshop (\$23.0) – Based on actual costs in each of the last several years. Funds are primarily for space rental, which is competitively bid and typically includes some meals and conference equipment (e.g., rental of computer projectors, microphones, etc.). Budgeted amount assumes no workshop registration fee.

State of the North Pacific Report for PICES (\$16.6) – Assumes continuation of current contract with PICES. Funds are for finalizing and publishing the North Pacific Ecosystem Final Status Report and supporting PICES meetings concerning the report.

STAC compensation (\$10.0) (NOS grant \$40.0) – Based on actual costs in FY 03. STAC members are paid for their time, which averaged roughly 20 days each in FY 03 (primarily for proposal review and participation in workshops).

Space rental for STAC subcommittees and workshops (\$12.2) – Assumes 4 off-site meetings with room rental space of \$3.5 per meeting. These funds may be reduced when arrangements can be made for donated space, which is normally used whenever available.

AOOS support (\$32.0) – TC would contribute this amount to implementation of the Alaska Ocean Observing System. AOOS total annual budget is roughly \$200.0, with balance contributed by grant from NOAA/NOS and other participating organizations.

World Fisheries Congress (\$5.0) (WFC) meeting support – In FY 03, TC approved \$5.0 for developing the WFC's 2004 meeting (to be held May 4-6, 2004 in Vancouver, BC) and committed to additional \$5.0 to support meeting costs in FY 04.

Publication of GEM Scientific Background (\$75.0) – This is a one-time expense for an Alaska Sea Grant publication. This budget item may be more appropriate as a separate project in FY 04 than as part of the 040630 budget. Costs are expected to be offset by donation of peer review services resulting from better recognition of GEM in the scientific community.

#### Commodities (\$2.7)

Software upgrades (\$2.7) – Annual expense. Amount based on prior year expenditures.

#### **ADNR Component**

##### Contractual (\$95.0)

Dr. Spies contract (\$95.0) – Dr. Spies will continue to serve as the Chairman of the STAC Subcommittee on Lingering Oil. Budget estimate is based FY 03 expenditures, but actual amount depends on services actually provided.

##### USGS/DOI Component (\$12.8)

Personnel (\$12.8) – As in FY 03, Dede Bohn/USGS EVOS Project Manager, would coordinate up to 4 workshops, as identified by the STAC and Science Director in the course of review of FY 04 proposals, incoming reports, and other information.



October 1, 2003 - September 30, 2004

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October 1, 2003 - September 30, 2004

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**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**

October 1, 2003 - September 30, 2004

<b>Personnel Costs:</b>		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FY 04
Name	Position Description					
Vacant	Science Coordinator		3.0	6.2		0.0
		18.6				
		0.0				
		0.0				
		0.0				
		0.0				
		0.0				
		0.0				
		0.0				
		0.0				
		0.0				
Subtotal			3.0	6.2	0.0	
<b>Personnel Total</b>						\$18.6

<b>Travel Costs:</b>		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 04
Description						
Travel for Trustee Council Office science staff as needed						10.5
Travel for STAC						6.4
Travel for PICES and MONITOR meetings						0.0
Travel for subcommittee meetings, GEM planning meetings, workshops						39.5
Habitat subcommittee meeting travel - \$14.5						0.0
Workshop travel - \$25.0						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
<b>Travel Total</b>						\$56.4

FY04	Project Number: 040630 Project Title: Scientific Management for GEM and Lingering Oil Programs Agency: ADFG/Trustee Council Office	FORM 3B Personnel & Travel DETAIL
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**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
 October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>		Proposed
Description		FY 04
Annual Workshop (January 2004 with GLOBEC and Steller Sea Lion Investigations)		23.0
State of the North Pacific Report for PICES, Gulf of Alaska component		16.6
STAC compensation		10.0
4 STAC/Subcommittee workshops		12.2
AOOS Support (RSA with the University of Alaska)		32.0
World Fisheries Congress Meeting Support		5.0
Alaska Sea Grant Publication of GEM Scientific Background		75.0
When a non-trustee organization is used, the form 4A is required.		
<b>Contractual Total</b>		<b>\$173.8</b>
<b>Commodities Costs:</b>		Proposed
Description		FY 04
Software upgrades		2.7
<b>Commodities Total</b>		<b>\$2.7</b>
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="border: 1px solid black; padding: 10px; width: 15%;"> <p align="center" style="font-size: 1.2em; font-weight: bold;">FY04</p> </div> <div style="border: 1px solid black; padding: 10px; width: 60%;"> <p>Project Number: 040630            Project Title: Scientific Management for GEM and Lingering Oil Programs            Agency: ADFG/Trustee Council Office</p> </div> <div style="border: 1px solid black; padding: 10px; width: 20%; text-align: center;"> <p>FORM 3B            Contractual &amp;            Commodities            DETAIL</p> </div> </div>		

October 1, 2003 - September 30, 2004

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# FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2003 - September 30, 2004

Budget Category:	Authorized FY 03	Proposed FY 04						
Personnel	\$0.0	\$0.0						
Travel	\$0.0	\$0.0						
Contractual	\$95.0	\$95.0						
Commodities	\$0.0	\$0.0						
Equipment	\$0.0	\$0.0						
Subtotal	\$95.0	\$95.0	LONG RANGE FUNDING REQUIREMENTS					
General Administration	\$8.6	\$8.6						
Project Total	\$103.6	\$103.6						
Full-time Equivalents (FTE)								
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments:								

**FY04**

Project Number: 040630  
 Project Title: Scientific Management for GEM and Lingering Oil Programs  
 Agency: ADNR

FORM 3A  
 TRUSTEE  
 AGENCY  
 SUMMARY

**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
October 1, 2003 - September 30, 2004

<b>Personnel Costs:</b>		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FY 04
Name	Position Description					
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			0.0	0.0	0.0	
<b>Personnel Total</b>						<b>\$0.0</b>

<b>Travel Costs:</b>		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 04
Description						
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
<b>Travel Total</b>						<b>\$0.0</b>

<b>FY04</b>	Project Number: 040630 Project Title: Scientific Management for GEM and Lingering Oil Programs Agency: ADNR	FORM 3B Personnel & Travel DETAIL
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October 1, 2003 - September 30, 2004

**FY04**

Project Number: 040630  
Project Title: Scientific Management for GEM and Lingering Oil Programs  
Agency: ADNR

FORM 3B  
Contractual &  
Commodities  
DETAIL



## October 1, 2003 - September 30, 2004

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# FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2003 - September 30, 2004

Budget Category:	Authorized FY 03	Proposed FY 04						
Personnel	\$0.0	\$0.0						
Travel	\$0.0	\$0.0						
Contractual	\$12.8	\$12.8						
Commodities	\$0.0	\$0.0						
Equipment	\$0.0	\$0.0						
Subtotal	\$12.8	\$12.8	LONG RANGE FUNDING REQUIREMENTS					
General Administration	\$1.2	\$1.1						
Project Total	\$14.0	\$13.9						
Full-time Equivalents (FTE)								
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments:								

**FY04**

Project Number: 040630  
 Project Title: Scientific Management for GEM and Lingering Oil Programs  
 Agency: USGS/DOI

FORM 3A  
 TRUSTEE  
 AGENCY  
 SUMMARY

# FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2003 - September 30, 2004

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FY 04
Name	Position Description					
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			0.0	0.0	0.0	
Personnel Total						\$0.0

Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 04
Description						
						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
Travel Total						\$0.0

<b>FY04</b>	Project Number: 040630	FORM 3B Personnel & Travel DETAIL
	Project Title: Scientific Management for GEM and Lingering Oil Programs	
	Agency: USGS/DOI	

**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>		Proposed
Description		FY 04
2 months of Dede Bohn's Time to coordinate workshops (Requested in November)		12.8
When a non-trustee organization is used, the form 4A is required.		<b>Contractual Total</b> \$12.8
<b>Commodities Costs:</b>		Proposed
Description		FY 04
<b>Commodities Total</b>		\$0.0

**FY04**

Project Number: 040630  
 Project Title: Scientific Management for GEM and Lingering Oil Programs  
 Agency: USGS/DOI

FORM 3B  
 Contractual &  
 Commodities  
 DETAIL

**FY 04 EXXON VALDEZ TRUST COUNCIL PROJECT BUDGET**  
 October 1, 2003 - September 30, 2004

<b>New Equipment Purchases:</b>		Number of Units	Unit Price	Proposed FY 04
Description				
				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.			<b>New Equipment Total</b>	\$0.0
<b>Existing Equipment Usage:</b>		Number of Units	Inventory Agency	
Description				
<b>FY04</b>	Project Number: 040630 Project Title: Scientific Management for GEM and Lingering Oil Programs Agency: USGS/DOI		FORM 3B Equipment DETAIL	

## **Project 040630A – BUDGET JUSTIFICATION**

### **ADF&G/Trustee Council Office Component**

#### **NOS Grant Cost Support:**

The NOS grant is for \$745,125 over three years (\$248,375). Year 1 will be July 1, 2003-June 30, 2004. Year 2 will be July 1, 2004-June 30, 2005. Year 3 will be July 1, 2005-June 30, 2006.

#### **Personnel (\$153.9)**

All positions are full time, supported jointly by NOS and EVOS FY 04-FY 06. Science Coordinator (vacant, 9 months salary at a Range 20 Step B, \$55.8), Data Analyst (vacant, 9 months salary at a Range 18 Step A, \$50.4) - Positions are currently vacant. Intend to hire; position description needs to be finalized with new Executive Director. Budgeted amounts assume full-time positions are filled by Oct. 1, 2003. Administrative Assistant, Cherri Womac (9 months salary at a Range 14 Step K, \$47.7) currently a full time position.

#### **Travel (\$33.9)**

TC Office science staff (\$16.7) – Based on FY 03 actual expenses, which included travel to Fairbanks, Juneau, Kodiak, Cordova, Homer, Seward, Seattle, Washington D.C., Seoul Korea, and Vancouver Canada to participate in various PICES, lingering oil, GLOBEC leadership, World Ocean, American Fisheries workshops and meetings.

STAC (\$8.0) – Based on FY 03 actual expenses, which included Scientific Advisory Committee members travel to proposal review meeting, Annual Workshop, subcommittee, Public Advisory Committee and GEM planning meetings.

Subcommittee meetings, GEM planning meetings, workshops (\$9.2) – Based on FY 03 actual expenses, which include travel expenses for 10 out of town Habitat and GEM subcommittees members, workshop panelists and speakers.

#### **Contractual (\$40.0)**

STAC compensation (\$40.0, which is \$10.0 for each of 4 members) – Based on actual costs in FY 03. STAC members are paid for their time, which averaged roughly 20 days each in FY 03 (primarily for proposal review and participation in workshops).

October 1, 2003 - September 30, 2004

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October 1, 2003 - September 30, 2004

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**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**

October 1, 2003 - September 30, 2004

<b>Personnel Costs:</b>		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FY 04
Name	Position Description					
Vacant	Science Coordinator		9.0	6.2		0.0
Cherri Womac	Administrative Asst		9.0	5.3		55.8
Vacant	Data Analyst		9.0	5.6		47.7
						50.4
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
<b>Subtotal</b>			27.0	17.1	0.0	
<b>Personnel Total</b>						\$153.9

<b>Travel Costs:</b>		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 04
Description						
Travel for Trustee Council Office science staff as needed						16.7
Travel for STAC						8.0
Travel for PICES and MONITOR meetings						9.2
						0.0
						0.0
						0.0
						0.0
						0.0
<b>Travel Total</b>						\$33.9

<b>FY04</b>	Project Number: 040630A Project Title: Scientific Management for GEM and Lingering Oil Programs Agency: ADFG/Trustee Council Office	FORM 3B Personnel & Travel DETAIL
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**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
 October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>		Proposed FY 04
Description		
STAC compensation - Honararium for non-governmetnal members @ \$500 day.		40.0
When a non-trustee organization is used, the form 4A is required.		<b>Contractual Total</b>
		\$40 0
<b>Commodities Costs:</b>		Proposed FY 04
Description		
<b>Commodities Total</b>		\$0.0

**FY04**

Project Number:040630A  
 Project Title: Scientific Management for GEM and Lingering Oil Programs  
 Agency: ADFG/Trustee Council Office

FORM 3B  
 Contractual &  
 Commodities  
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October 1, 2003 - September 30, 2004

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October 1, 2003 - September 30, 2004

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**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
October 1, 2003 - September 30, 2004

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FY 04
Name	Position Description					
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			0.0	0.0	0.0	
					<b>Personnel Total</b>	<b>\$0.0</b>

Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 04
Description						
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
					<b>Travel Total</b>	<b>\$0.0</b>

FY04	Project Number: 040630A Project Title: Scientific Management for GEM and Lingering Oil Programs Agency: ADNR	FORM 3B Personnel & Travel DETAIL
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**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**

October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>		Proposed
Description		FY 04
When a non-trustee organization is used, the form 4A is required.		<b>Contractual Total</b>
		\$0 0
<b>Commodities Costs:</b>		Proposed
Description		FY 04
		<b>Commodities Total</b>
		\$0 0

FY04

Project Number: 040630A

Project Title: Scientific Management for GEM and Lingering Oil Programs

Agency: ADNR

FORM 3B  
Contractual &  
Commodities  
DETAIL

**October 1, 2003 - September 30, 2004**

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## FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2003 - September 30, 2004

Budget Category:	Authorized FY 03	Proposed FY 04						
Personnel	\$0.0	\$0.0						
Travel	\$0.0	\$0.0						
Contractual	\$12.8	\$0.0						
Commodities	\$0.0	\$0.0						
Equipment	\$0.0	\$0.0						
Subtotal	\$12.8	\$0.0	LONG RANGE FUNDING REQUIREMENTS					
General Administration	\$1.2	\$0.0						
Project Total	\$14.0	\$0.0						
Full-time Equivalents (FTE)								
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments:								

FY04

Project Number: 040630A  
 Project Title: Scientific Management for GEM and Lingering Oil Programs  
 Agency: USGS/DOI

FORM 3A  
 TRUSTEE  
 AGENCY  
 SUMMARY



**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**

October 1, 2003 - September 30, 2004

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	Proposed FY 04
Name	Position Description					
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
Subtotal			0.0	0.0	0.0	
<b>Personnel Total</b>						<b>\$0.0</b>

Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Per Diem	Proposed FY 04
Description						
						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
<b>Travel Total</b>						<b>\$0.0</b>

FY04	Project Number: 040630A Project Title: Scientific Management for GEM and Lingering Oil Programs Agency: USGS/DOI	FORM 3B Personnel & Travel DETAIL
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**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
 October 1, 2003 - September 30, 2004

<b>Contractual Costs:</b>		Proposed
Description		FY 04
When a non-trustee organization is used, the form 4A is required.		<b>Contractual Total</b> \$0.0
<b>Commodities Costs:</b>		Proposed
Description		FY 04
		<b>Commodities Total</b> \$0.0

**FY04**

Project Number: 040630A  
 Project Title: Scientific Management for GEM and Lingering Oil Programs  
 Agency: USGS/DOI

FORM 3B  
 Contractual &  
 Commodities  
 DETAIL

**FY 04 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET**  
October 1, 2003 - September 30, 2004

[illegible]

## Meeting Summary

**A. GROUP:** *Exxon Valdez Oil Spill (EVOS) Public Advisory Committee (PAC)*

**B. DATE/TIME:** June 7, 2003

**C. LOCATION:** Cordova, Alaska

**D. MEMBERS IN ATTENDANCE:**

<u>Name</u>	<u>Principal Interest</u>
Torie Baker	Commercial Fishing
Gary Fandrei	Aquaculture/Mariculture
Brett Huber	Sport Hunting & Fishing
Pat Lavin	Conservation/Environmental
Chuck Meacham	Science/Technical
Brenda Norcross	Science/Technical and STAC
Ed Page	Marine Transportation
Martin Robards	Conservation/Environmental
Stacy Studebaker	Recreation Users
Kate Williams	Conservation/Environmental
Ed Zeine	Local Government

**E. NOT REPRESENTED:**

<u>Name</u>	<u>Principal Interest</u>
John Devens	Regional Monitoring
John Gerster	Public-at-Large
Charlie Hughey	Subsistence
RJ Kopchak	Public-at-Large
Pat Norman	Native Landowner
Gerald Sanger	Commercial Tourism
Stan Senner	Conservation/Environmental
Scott Smiley	Public-at-Large
Michael Vigil	Tribal Government

**F. OTHER PARTICIPANTS:**

<u>Name</u>	<u>Organization</u>
Ken Adams	Commercial Fisherman
Ed Backus	Ecotrust
Mimi Hogan	Chugachmuit
Molly McCammon	Trustee Council Executive Director
Ross Mullins	Commercial Fisherman
Phil Mundy	Trustee Council Staff
Doug Mutter	Designated Federal Officer, Dept. of the Interior (DOI)

Bruce Painter  
Drue Pearce  
Cherri Womac

Alyeska SERVS  
Trustee Council Member for DOI  
Trustee Council Staff

## G. SUMMARY:

The meeting was opened by Doug Mutter at 4:00 p.m. with a roll call.

Ed Zeine made a motion (second by Torie Baker) that Brett Huber be elected as Chairperson for the PAC, and that Chuck Meacham be elected as Vice-Chairperson. The motion passed unanimously.

Huber asked each PAC member to introduce themselves.

Gary Fandrei made a motion (second by Meacham) to change the number of PAC members required to constitute a quorum from 10 to 11. The motion passed unanimously.

Molly McCammon gave a briefing on the background and status of the EVOS restoration program and the creation of the Gulf Ecosystem Monitoring (GEM) program (see Handout). She noted that the GEM Program document was available on the EVOS web site. The GEM Science Plan is a working document. This will be her last meeting, since she has resigned as Executive Director of the EVOS Trustee Council, effective July 2, 2003.

Huber offered the appreciation of the PAC to Molly McCammon for her work as Executive Director. He said:

This is our last opportunity as a PAC to meet with you as our Executive Director for EVOS. I think it is appropriate to say a couple of things. We have talked among ourselves about how sometimes certain personalities, certain skill sets, just really fit to make a program click, make things work, to make things get accomplished, more so than it would with anyone else. I think clearly your personality and skill set in this position has done exactly that. Personally, it has been a pleasure to work with you over the last several years. As you move on to new challenges, because of your professionalism and your personality, which you brought to this position, you can take a great deal of pride and satisfaction with you for the work you have accomplished and the good you have brought the impacted communities. Thank you.

The session was opened for public comment. Ross Mullins discussed the need for baseline studies and the hope that GEM will provide this information for use into the future. Ken Adams recommended that GEM be responsive to the needs of the stakeholders. Commercial fishers, in particular, rely heavily on the natural resources and are a major economic driver in Alaska. He also recommended continued joint research/development projects with other institutions and industry.

Huber thanked Cherri Womac for handling the logistics of the field trip across Prince William

Sound and around Cordova. He asked for PAC member input on the agenda for the next meeting in August. He noted that the community involvement project is of particular interest for the PAC and should be discussed this summer. Individual PAC members are encouraged to comment, as well.

Zeine thanked the PAC and EVOS staff for coming to Cordova.

Meacham asked where the impetus came from for setting aside some of the restoration money to establish a long-term program. He noted Jim King, former PAC member as one who pushed for some type of long-term program. McCammon agreed and said the PAC was instrumental, and that others, such as Arlis Sturgulewski and (then) Senator Murkowski, were also strong advocates.

Brenda Norcross suggested checking the EVOS web site for a recent report of a workshop on shoreline mapping and data collection. The types of physical and biological data and information discussed would be useful for community uses.

Stacy Studebaker appreciated the field trip stop at Herring Bay and the discussion by Jeep Rice of oil remaining buried in the intertidal zone. She said it would be good to get new Trustee Council members out there to see the lingering oil.

Womac reviewed the remaining itinerary of the field trip (the field trip started in Whittier Friday, June 6, and ended with a return from Cordova on Sunday, June 8).

The meeting adjourned at 5:00 p.m.

#### **H. FOLLOW-UP:**

1. Cherri Womac will survey PAC members to determine dates for the upcoming teleconference and meeting.
2. Womac will distribute to the PAC the results of public comment on the community involvement plan when available.

#### **I. NEXT MEETINGS:**

- A teleconference briefing July 22 or 23 about the draft Community Involvement project
- A meeting in late August

#### **J. ATTACHMENTS: (Handouts, for those not present)**

1. EVOS Trustee Council Briefing PowerPoint Slides
2. A Plan for Community Involvement and Community-Based Monitoring in the GEM Program (May 30, 2003, draft)

3. Planning for Community Involvement in GEM, EVOS Project 030375

**K. CERTIFICATION:**

\_\_\_\_\_  
**PAC Chairperson**

\_\_\_\_\_  
**Date**

## Meeting Summary

**A. GROUP:** Exxon Valdez Oil Spill (EVOS) Public Advisory Committee (PAC)

**B. DATE/TIME:** August 14, 2003

**C. LOCATION:** Anchorage, Alaska

### **D. MEMBERS IN ATTENDANCE:**

<u>Name</u>	<u>Principal Interest</u>
Torie Baker	Commercial Fishing
John Devens (telecon)	Regional Monitoring
Gary Fandrei	Aquaculture/Mariculture
John Gerster	Public-at-Large
Brett Huber	Sport Hunting & Fishing
RJ Kopchak	Public-at-Large
Pat Lavin	Conservation/Environmental
Chuck Meacham	Science/Technical
Brenda Norcross	Science/Technical and STAC
Ed Page	Marine Transportation
Martin Robards	Conservation/Environmental
Stan Senner	Conservation/Environmental
Scott Smiley	Public-at-Large
Stacy Studebaker	Recreation Users
Kate Williams	Conservation/Environmental
Ed Zeine	Local Government

### **E. NOT REPRESENTED:**

<u>Name</u>	<u>Principal Interest</u>
Charlie Hughey	Subsistence
Pat Norman	Native Landowner
Gerald Sanger	Commercial Tourism
Michael Vigil	Tribal Government

### **F. OTHER PARTICIPANTS:**

<u>Name</u>	<u>Organization</u>
Paula Banks	Trustee Council Staff
Nancy Bird	Prince William Sound Science Center
Rob Bochenek	Trustee Council Staff
Gina Belt	U.S. Department of Justice
Dede Bohn	U.S. Geological Survey
Kevin Callahan	Patton Boggs
Barat La Porte	Patton Boggs



Ross Mullins  
Phil Mundy  
Doug Mutter  
Riki Ott  
Gail Phillips  
Cherri Womac

Commercial Fisherman  
Trustee Council Staff  
Designated Federal Officer, Dept. of the Interior (DOI)  
Alaska Forum for Environmental Responsibility  
Trustee Council Executive Director  
Trustee Council Staff

## G. SUMMARY:

The meeting was opened by Brett Huber at 8:37 a.m. He welcomed Gail Phillips as the new Trustee Council Executive Director. He reported that he recently attended the Science and Technology Advisory Committee (STAC) meeting to review FY 2004 project proposals. He also noted that a summary of the recent briefing on the Community Involvement Plan was distributed to PAC members. Doug Mutter read the roll call, a quorum was present.

Phillips said that the transition of Executive Directors was going well and that she had an open door policy for PAC members who wished to contact her. She noted that she would make recommendations on the proposed FY 2004 work plan after hearing from the STAC, PAC, and staff. Also acknowledged and thanks the staff for keeping everything in order during the transition.

There was no public comment other than a presentation by Riki Ott regarding the effects of lingering oil, unanticipated impacts, and her recommendation that the PAC request the Trustee Council pursue the \$100 million re-opener feature of the settlement between Exxon companies and the governments (a handout was distributed to PAC members prior to the meeting).

Paula Banks reviewed the proposed Administrative budgets for FY 2004 (handouts #1-5). The PAC is included in this budget category. The budget covers two PAC meetings in Anchorage and PAC members attending the annual symposium. A field trip will not be scheduled for FY 2004. She said that a grant was received from the National Oceanic and Atmospheric Administration's National Ocean Survey (NOS) to support ocean observing systems—this is a one-time \$750,000 grant. She expects to use one-third of the funds per year over a three year period. Authorization from the State Legislature is required to spend the money. **John Gerster moved, second by Chuck Meacham, to recommend that the Trustee Council accept this NOS grant and request authorization from the legislature to spend the funds. Passed unanimously.**

Banks said the grant money would replace some administrative funds, which would free-up money to use for the observing systems. Meacham cautioned about this approach, since after three years the administrative budget would need readjusted. Banks said the administrative budget was going to be reduced in three years, so this should not be a problem.

She reported that the budget for the Alaska Resources Library and Information System (ARLIS) just covered personnel costs, and their move to the University would not be a factor in the EVOS budget. Also, she said there are two vacant positions in the administrative budget and the decision whether to fill them has not been made. A data analyst position will be filled. The total administrative budget for FY 2004 is about \$1.5 million (and one-third of the NOAA

grant). This is a reduction from FY 2003.

Stacy Studebaker asked about Trustee Council staffing. Phillips identified the current Trustee Council staff (see below). She noted that Bob Spies is now on contract, as are STAC members. There were four additional positions last year.

Gail Phillips, Executive Director  
Phil Mundy, Science Director  
Cherri Womac, Admin Assistant  
Brenda Hall, Admin Assistant  
Paula Banks, Financial  
Rob Bochenek, Data Management/Computers  
Vacant, Data Analyst

Stan Senner asked about the target staff size. Phillips said there is no firm answer, it depends on how much of the Gulf Ecosystem Monitoring (GEM) process can be automated (e.g. the peer review process). Rob Bochenek said that this year the work plan was produced ahead of schedule with one-half the staff due to automation. Phil Mundy stated that they have saved \$85,000 annually in mailing costs. Banks noted that GEM start-up costs are higher than anticipated operating costs and that there is also an additional contract for financial auditing.

The group discussed the pilot project for small parcel habitat protection. Phillips said the contract is over at the end of September. Senner asked that the PAC be given an opportunity to comment on the pilot when information was available and before the Trustee Council took further action. Huber stated that he would report to the Trustee Council that the PAC would like to comment on the pilot small parcel habitat protection project before the Trustee Council takes further action.

Pat Lavin suggested the PAC may want to further discuss the re-opener at the next PAC meeting. Huber said he understood the re-opener to be a U.S. Department of Justice/Alaska Department of Law decision that the PAC had little impact on, and that it may be premature to discuss it. Lavin stated that there are new PAC and Trustee Council members since the last discussion on the re-opener and that the timeline for a decision was shrinking. Studebaker suggested inviting public comment on the issue. R.J. Kopchak said that if the Trustee Council was going to consider both the small parcel project and the re-opener, the PAC should have the opportunity to comment. He said the public will want to know that we have used all available money for restoration. Senner asked if the re-opener was a sensitive issue calling for a closed PAC session. Mutter reported on the lengthy process provided under the Federal Advisory Committee Act for closing advisory group meetings. Ed Zeine wondered why we need a closed meeting, since the PAC is not a decision-making body. Huber concurred, asking why a "public" group should have a closed meeting. Meacham stated that we needed more background on why we should or should not make a recommendation on the re-opener. Gary Fandrei agreed, saying the PAC needs more scientific and legal information before taking formal action. Ed Page said he was comfortable with the PAC asking the Trustee Council to take a serious look at this issue. Lavin agreed, saying it was not necessary for a closed meeting, but useful to have a sense of the PAC to consider the re-opener. Huber said he would convey to the Trustee Council the PAC's continuing interest in the re-opener issue.

and would ask the Trustee Council if they would like the PAC to deliberate further and make a formal recommendation on this.

Mundy discussed the FY 2004 work plan (handouts #6-8). Previously distributed to PAC members were the proposal abstracts with STAC recommendations. The request for proposals was based on the GEM science plan (on the web site). Each proposal received went through 2-6 peer reviews and the STAC has reviewed them and made recommendations. Recommendations on proposals to fund will be going public shortly. STAC, PAC, and staff recommendations, and other public comment will all be sent to the Trustee Council for their use in deciding the FY 2004 work plan. The Trustee Council is expected to take action at their October 3 meeting. The federal Fiscal Year 2004 starts October 1, 2003.

Gerster asked how "fund contingent" fit into the timeline. Huber said the proposal author must complete missing information, reports, etc. and resubmit a revised proposal before the project is approved. Brenda Norcross noted that all lingering oil projects are "fund contingent" pending results from a planned fall 2003 lingering oil workshop. Mundy said that questions that relate to whether a re-opener is likely will be addressed at the workshop. The facts for a case for the re-opener must be developed, which will be costly. He said he hoped not to divert many resources away from GEM for re-opener studies. Mundy went on to review each proposal, grouped by categories.

#### Synthesis proposals

Lavin stated that the Synthesis project seemed to be an important foundation for GEM, and he wondered if the staff were happy with only two "fund" projects. Mundy replied that he was not happy and that the staff should be more aggressive in soliciting good proposals for this category, perhaps outside the annual work plan process. Martin Robards said he was surprised the Mann proposal was not recommended for "fund." Mundy said he was, too, but that the STAC believed it was not the direction GEM needed to go at this time. Scott Smiley said that new information about how small amounts of oil could have effects on resources should be discussed at the upcoming workshop. Mundy said it would. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

#### Data Management proposals

Bochenek explained the proposals for this category. This is the first time this category has been included. A substantial effort is underway to build standards and metadata for accessing data on different platforms handled by different researchers. The EVOS efforts are linked to national efforts. Gerster stated that it is important to consider follow-up maintenance and support of these systems, once up and running. Torie Baker agreed, saying this was a long-term commitment. Mundy said they have a long-term data management plan. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

#### Modeling proposals

Mundy stated that they want to get the Sound Ecosystem Assessment (SEA) model working for pink salmon in Prince William Sound and get the GEM model running. A good pink salmon model has not been proposed. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

#### Community Involvement proposals

Mundy said he expected a report shortly on how to integrate and prioritize community involvement efforts. Gerster commented that the Cooper proposal seemed expensive and the methods unclear. Mundy said the author was revising the proposal. It will be a good test of how to obtain quality assurance from citizen-based sampling. Fandrei asked if, over the three-year life of the project, there was a way to get out if problems arose. Mundy said an annual report and review was required, and funding could be deferred or deleted.

Studebaker asked if the completion of the Community Involvement plan would change how these proposals were handled. Huber said yes, it should set priorities for funding proposals. Robards called for accountability in multi-year projects. Norcross said that priorities were needed since not all work could be accomplished. Mundy noted that several projects in other categories have community involvement built into them. Meacham asked what the Schneider proposal would accomplish, and if it was a model they should present it to other areas for implementation. Mundy said it related the classic youth area watch to GEM. Huber recalled that STAC thought it a model for others. Page said it was good to encourage and coach people in public involvement and give them good models. Smiley said that putting "winner" proposals on the web is a useful way to outreach to others. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

#### Lingering Oil Effects proposals

Mundy stated that they were looking for comparative studies as well as an actual hydrocarbon sample data base. They want to examine remaining oil and its effects and how to track it in the ecosystem. Huber asked if the PAC wished to reiterate its recommendation that **Principal Investigators with work products still outstanding not be given additional funds by the Trustee Council until those outstanding issues are resolved.** The PAC agreed.

Baker asked why the subsistence project was so expensive. Mundy replied that it involves a lot of travel and training of community assistants. It is not viewed as "normal agency work" since it is related directly to EVOS. Kate Williams noted that it involved tribes and rural communities and shows them that subsistence is a high priority. Smiley stated that EVOS funding of the lingering oil effects workshop was a good idea, since a lot of local community concerns are about the effects of oil still in the environment. Further, he suggested putting together an information "road show" on the subject. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

#### Alaska Coastal Current proposals

Mundy explained the need to obtain data in an inexpensive manner, thus the look toward using vessels of opportunity for data collection. He noted that there may be some missing current data for Prince William Sound since a Principal Investigator is leaving the state. Gerster suggested looking at satellite transmission of data. The group discussed access to the State ferries, non-crude carriers, fishing tenders, container ships, and oil tankers as possible data collection platforms. Meacham said that using the Alaska Marine Highway System ferries was a good place to start. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

#### Nearshore proposals

Mundy noted that the first GEM projects were Nearshore and that the upcoming year would emphasize Watersheds. They are specifically looking for projects that will directly benefit resource management decisions. Kopchak suggested a seafood waste study may be beneficial and would relate to ecosystem, community and resource management needs. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

#### Watersheds proposals

Mundy stated that they wished to identify problems (especially with marine linkages), measure them over the next three years, and then go into a long-term monitoring program. Smiley was concerned about the amount of interchange in watersheds and suggested that a symposium at the end of the projects would be useful. Huber noted that there was to be a meeting after two years of project work. Smiley suggested the Spiridon Lake project also examine volcanic effects. Mundy replied that Alaska Department of Fish and Game limnology protocols would be followed, which include elements such as phosphorus. Meacham stated that he liked the direction of this category of projects—it was fine science. Mundy noted that the results from these efforts could revolutionize salmon management in the Pacific Northwest. Huber asked if the PAC agreed with the STAC recommendations for projects, or if they wished to comment further. No additional questions were raised.

Huber asked if there were any additional discussions on proposed projects. Robards asked why the Mann proposal was rejected, since it seemed to provide a synthesis of long-term data. Mundy replied that the money allocated for projects was met on higher priority projects and that it is a project that can be done later. **The PAC agreed to support funding the Mann proposal if money is available.** Meacham said he supported using the Schneider proposal as a model for Cook Inlet and Prince William Sound. Smiley stated that some close to shore work needed to be done in Alaska Coastal Currents projects, since the current runs close in some areas.

Kopchak suggested providing a thumbnail reference for proposals and projects to make it easier to locate them. Studebaker recognized the good work of Sandra Schubert while she was with the Trustee Council.

Huber noted that it was useful to have STAC members at the PAC meetings. He asked PAC

members to submit agenda items for upcoming meetings.

The meeting adjourned at 4:09 p.m.

#### **H. FOLLOW-UP:**

1. Phillips will let the PAC know about the schedule for consideration of the small parcel program.

#### **I. NEXT MEETINGS:**

- Possibly a teleconference meeting before the October 3, 2003, Trustee Council meeting
- Possibly a meeting at the EVOS Annual Symposium around January 12, 2004

#### **J. ATTACHMENTS: (Handouts, for those not present)**

1. Project 040100 Admin Budget Justification (including public info)
2. Project 040550 ARLIS Budget Justification
3. Project 040630 Admin Budget Justification
4. Project 040630A NOS Grant Budget Justification
5. Project 040455 Data System Budget Sheets
6. STAC Recommendations per Invitation Category
7. Project Funding Status as of Aug. 7<sup>th</sup>, 2003
8. EVOS Trustee Council Confidential
9. Written comment from Charlie Hughey

#### **K. CERTIFICATION:**

\_\_\_\_\_  
**PAC Chairperson**

\_\_\_\_\_  
**Date**

## Exxon Valdez Oil Spill (EVOS) Legacy: Shifting Paradigms in Oil Ecotoxicology<sup>1</sup>

Riki Ott, Ph.D., Charles Peterson, Ph.D., and Stanley Rice, Ph.D.<sup>2</sup>

**Abstract.** Oil is much more toxic to coastal fish, birds, and mammals than previously predicted by short-term laboratory bioassay studies used during the 1970s and 1980s to develop a "paradigm" or model understanding of oil toxicity. Hundreds of comprehensive field assessments and lab studies conducted by government and academic researchers after the Exxon Valdez oil spill (EVOS) show that oil is persistent in important shoreline environments and causes long-term, population-level injury to coastal sealife. These 1990s studies frame a new oil toxicity paradigm, showing that risk evaluation or "ecotoxicity" models developed in the 1970s severely understate environmental damage from chronic oil pollution. Public policies based on the 1970s oil toxicity paradigm are not adequately protective of sealife. Policies guiding every phase of oil use from production to consumption and waste disposal need to be reevaluated in light of the 1990s oil toxicity paradigm.

### 1970s Oil Toxicity Paradigm: History & Limitations

With the passage of the federal Clean Water Act in 1972, scientists developed standards to protect fish and wildlife in marine and fresh water environments from harmful levels of oil, among other chemicals. Scientists used short-term (usually 96-hour) laboratory "bioassays" as a way of exposing organisms to oil dissolved in the water column or the "water soluble fraction" (WSF) and then measuring the effects of this exposure (usually as mortality) to determine what levels of oil were harmful (1).

The oil toxicity paradigm<sup>3</sup> that emerged as a result of these bioassays (2) held that

the primary compounds of concern in crude oil, which is composed of hundreds of different hydrocarbons, were the 1- and 2-ring aromatic hydrocarbons, which dissolve rapidly in water or air. Other larger aromatic hydrocarbons (3-5 rings) were more toxic, but they did not dissolve or mix into the water rapidly, and were not a factor in the short-term bioassays. The 1- and 2-ring aromatic hydrocarbons were quick in toxic action, but also short in duration - easily diminished by dilution, volatilization, and dispersal. Hence, the 1970s oil toxicity paradigm was based on acute toxicity, with toxic concentrations to fish and invertebrates in the low parts per million. There was some concern for long-term toxicity and safety factors were

<sup>1</sup>Briefing Paper for Power Point presentation on [www.alaskaforum.org](http://www.alaskaforum.org)

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<sup>3</sup>Note: in this paper, a "paradigm" is a theoretical framework created by scientists to explain a functional relationship in natural science. Paradigms are fluid, not static, models and they shift to accommodate new understanding as science advances. For example, a scientific paradigm once held that the world was flat, but we no longer believe this.

suggested by guess work: for example, 1/100<sup>th</sup> of the acute toxicity *should* be safe.

### What was Wrong with the 1970s Acute Toxicity Paradigm for Oil?

There are two basic problems with the acute toxicity model that evolved out of the 1970s - persistence and toxic mechanism. First, persistence of toxic compounds was not considered to be a problem. 1- and 2-ring aromatics do not persist in the natural environment, but their larger 3-, 4-, 5- ring cousins can. The larger compounds are not volatile, not soluble, but much more difficult to degrade. Second, the mechanism for toxicity is very different between the small and large aromatics. The 1- and 2-ring aromatics are toxic to membrane function and cause a "narcosis" type of toxicity. This acts quickly and leads to a variety of system failures. Fish, for example, lose equilibrium when exposed to 1-ring aromatics, there are function failures in gills and other organs, and the fish typically die within minutes of exposure.

In contrast, the mechanism of toxicity for larger compounds operates within the cell, where proteins and DNA can be directly affected. Embryos will suffer injury where cellular DNA is damaged and then replicated during embryonic growth, creating more cells with damaged DNA. Rather than causing an acute narcosis death, this damage affects "fitness" and results in a juvenile that is less capable of normal growth, avoiding predators, or capturing prey. In contrast to a direct narcosis death, this mechanism is more indirect (getting eaten, for example), but the result is still a loss in numbers of recruiting individuals. Populations slowly decline.

The limitations of the 1970s oil toxicity paradigm, based on acute toxicity, are such that it cannot be used to predict oil toxicity in an environment where oil may persist for some time (1). Acute bioassays were designed originally to measure potency of insecticides, not assess environmental safety to wildlife, where there are complex and long-term interactions among growth, body condition, maturation, diseases, reproduction, and predation.

Until now after results of EVOS studies have been compiled, resource and environmental managers only had available the 1970s oil toxicity paradigm to use to establish water quality standards and develop environmental risk models. A body of public policy (environmental laws) emerged, based on the 1970s paradigm, supposedly to protect aquatic and marine life from oil pollution.

### 1990s Oil Toxicity Paradigm & Supporting Studies

The 1970s oil toxicity paradigm failed to predict the long-term impacts of the EVOS, stemming from persistent oiling and subsequent bioavailability of oil in critical nearshore habitats (1, 3). As part of the Restoration Program undertaken by the federal and Alaska state governments, scientists designed comprehensive field and lab studies to explore and explain the population-level impacts that occurred, notably, in Prince William Sound, where nearly half of the oil from the *Exxon Valdez* had stranded on beaches (4). These studies and the resulting 400+ peer-reviewed papers frame the new 1990s oil toxicity paradigm. The persistence of substantial amounts of oil for more than a decade in biologically important, protected shoreline habitats, such as deltas of anadromous fish



streams, mussel beds, and boulder-cobble shores (1, 3), was unanticipated and has induced the long-term exposures that underlie the new 1990s paradigm.

The 1990s oil toxicity paradigm holds that the compounds of concern are not the 1- and 2-ring aromatic hydrocarbons but 3-, 4-, 5-ring PAHs, or polycyclic aromatic hydrocarbons that were ignored in the 1970s paradigm. PAHs are persistent and bioavailable: PAHs are toxic during chronic exposure to early developmental life stages of herring and pink salmon at 0.4 to 1 part per billion, respectively, or levels 1,000 times lower than predicted by the 1970s paradigm (5, 6). A range of maladies was found in a variety of fish, birds, and mammals from field exposure to PAHs at levels of low parts per billion (ppb) (Table 1). Both direct and indirect effects were reported. In brief, these findings are as follows.

**FISH.** After the EVOS, weathered oil characterized by 3-, 4-, 5-ring PAHs was trapped in protected beach environments such as subsurface groundwater of anadromous fish streams for at least 4-8 years (7). PAHs were bioavailable to embryos and larvae of pink salmon as the PAHs were absorbed across the yolk membrane of eggs: prolonged exposures for months during incubation to levels as low as 1 ppb were found to be toxic (6). In addition to enhanced embryo mortality through chronic exposure to PAHs in weathered oil in groundwater (8), "sublethal" (not directly toxic) oil exposure led to population-level impacts. Evidence of higher rates of abnormal development and larval deformity in pink salmon and herring following oil exposure imply enhanced mortality (5, 6). Exposure of salmon fry to Exxon Valdez oil resulted in

lower growth rates in 1989 and increased subsequent mortality through predation (9, 10). Finally, controlled laboratory studies of embryo development demonstrated reproductive impairment in the form of lower embryo survival of eggs from returning adult pink salmon that had been exposed to PAHs in weathered oil in streams during incubation as eggs and fry (11).

*The 1990s paradigm of oil ecotoxicity to fishes incorporates both enhanced embryo mortality and delayed reproductive impacts of chronic exposure of embryos to persistent PAHs in weathered oil at low ppb concentrations, and it includes population-level consequences of sublethal impacts on growth of juvenile stages.*

**MARINE MAMMALS.** Prior to the EVOS the widely accepted risk assessment model predicting population-level impacts to marine mammals and seabirds held that this wildlife had to be physically oiled and the resulting loss of insulation to fur or feathers led to hypothermia, drowning, and death. While the EVOS confirmed this model during the early weeks of the spill in that thousands of sea otters (12) and hundreds of thousands of seabirds (13) died from physical contact with oil, researchers also found that other processes caused previously unanticipated long-term population-level effects.

Smooth-skinned mammals—documented for harbor seals (14) and killer whales (15)—declined in abundance in 1989 in oiled areas of Prince William Sound. Brain lesions, evident in necropsies of seals implicate inhalation of toxic fumes, the 1- and 2-ring aromatics, and were considered to have caused mortality through observed behavioral disorientation, lethargy, and stress response (16). Killer whales in Prince

William Sound experienced unprecedented losses in the years following the spill. Early

losses arose from direct toxic exposures, whereas long-term, delayed

**Table 1. Evidence of Effects of Chronic Oil Pollution.** Examples of species, life stage, connection to the intertidal zone, and lowest level of PAHs causing effect (in parts per billion). "Elevated P450 enzyme" indicates PAHs are bioavailable; further effects as noted. From Peterson (2001) and Rice et al. (2001).

Species	Life Stage	PAH s (ppb)	Connection to intertidal (Effect)
Pink salmon	Embryo	1 µg/g	Early development (death, genetic damage to 1 <sup>st</sup> , 2 <sup>nd</sup> generation)
Pink salmon	Juvenile	1 µg/g	Nursery (decreased growth & reduced marine survival)
Dolly Varden char	Juvenile, adult	low ppb	Forage (decreased growth for 1 yr)
Cut-throat trout	Juvenile, adult	low ppb	Forage (decreased growth for 2 yr)
Pacific herring	Egg, embryo	1 µg/g	Early development (death)
Black oystercatchers	Adult	low ppb	Nest (delayed recovery due to problems with rearing chicks)
Harlequin ducks	Adult	low ppb	Forage on mussels (depressed over winter survival of females, 9 yr)
Barrow's goldeneye	Adult	low ppb	Forage on mussels (depressed recovery, elevated P450 enzyme, 9 yr)
Cormorants, murres, black-legged kittiwake, pigeon guillemot (PG), loons, mergansers	Adult	low ppb	Forage on high lipid fish (delayed recovery for 9 yr (loons 5 yr); PG lower productivity of young, elevated P540 enzyme 9 yr)
Masked greenling	Adult	0.40 µg/g	Resident (elevated P450 enzyme up to 7 years post spill)
Sea otters	Juvenile	low ppb	Forage on mussels (high mortality for up to 3 yrs)
Sea otters	Adult	low ppb	Forage (high mortality of prime breeding age adults for 5 yr)
River otters	Adult	low ppb	Forage (expanded feeding territories, poor condition, elevated P450 enzyme)

effects on survival, reproduction, and recruitment success were the indirect consequences of loss of parents and experienced older members, disrupting the social structure of the pods (17).

In addition to the thousands of early sea otters deaths caused by acute toxicity, long-term studies revealed processes inhibiting recovery of otters in heavily oiled areas. Intensive documentation of sea otter population dynamics for over a decade after the EVOS revealed a reduced population growth rate and increased death rate of prime-age and juvenile sea otters in oiled areas of Prince William Sound (18). Sea otters feed heavily on clams that they dig out of eelgrass beds and on mussels and crabs. Clams and mussels sequester (absorb and store in their bodies) oil hydrocarbons: sediment in eelgrass beds and under mussel beds remained contaminated with PAHs from Exxon Valdez oil, which remained bioavailable to sea otters through their shellfish diet (19).

*The 1990s paradigm of oil ecotoxicity to marine mammals recognizes risk from inhalation of toxic fumes, behavioral interdependencies among social animals, and long-term exposure to oil through diet and residual weathered oil in sediments.*

**SEABIRDS.** Guilds of seabirds that feed in nearshore habitats suffered greater initial declines, delayed declines, and delayed recovery compared to those that feed offshore (20, 21). In particular, species of seaduck that feed heavily on mussels such as Barrow's goldeneyes and harlequins showed no evidence of recovery through the 1998 survey (22) and continued exposure to PAHs, as evidenced by high levels of enzymes that metabolize or break down oil (23). For years after the EVOS,

harlequins experienced high over-wintering mortality rates and continued population decline in oiled areas of Prince William Sound (24). Black oystercatchers, a shorebird that feeds heavily on mussels, also had reduced incidence of breeding, smaller eggs, and reduced growth of offspring in oiled areas in 1989 (25). Results of studies on seabirds imply that energetic costs of metabolizing oil ingested through diet are substantial and create sublethal effects on growth, body condition, and reproduction (26) with population-level impacts (27).

*The 1990s paradigm of oil ecotoxicity to seabirds recognizes risk from long-term exposure to oil through diet and subsequent sublethal effects on reproduction, growth, and survival with population-level impacts.*

**INDIRECT EFFECTS.** The current risk assessment models used for predicting population-level effects of oil pollution lack all indirect effects and treat species populations as independent of one another. Studies after the EVOS demonstrated two main types of indirect effects in communities of sealife associated with rocky shores: loss of critical habitat through loss of species that provide structural habitat and "trophic-level" (food web) interactions among species (3).

The macroalga *Fucus* provides critical habitat, a virtual seaweed forest, for a variety of marine invertebrates that serve as prey for seabirds and shorebirds, sea and land mammals, and young pelagic and benthic fish (3). Dramatic loss of *Fucus* in the intertidal zone by oiling and the pressurized hot water (28) wash inhibited recovery of both the *Fucus* itself, which depends upon recruits being protected from desiccation by the seaweed canopy

(29), and also the community of invertebrates that shelters under the seaweed (30). The subsequent sequence of community development and species succession extended over a decade as opportunistic species of fauna and flora were gradually replaced by single-aged stands of *Fucus*, which died in cycles, starting the whole process again (31).

In the Gulf of Alaska, large reductions in sea otter populations, not spill-related, have been shown to predictably reduce predation on sea urchins, which then can experience a population explosion and overgraze their kelp and macroalgal foods. The consequent loss of the kelp forests has dramatic negative impacts on the fish and invertebrate community that resides within the forest and subsequently on the seabirds and marine mammals that prey on these resources (32). The potential for such a trophic cascade existed in Prince William Sound after the EVOS, but it was not fully realized as only the initial phase of increased sizes of sea urchins was documented in oiled areas with depleted sea otter populations (19).

Another indirect trophic impact, however, was realized in Prince William Sound when populations of important species of forage fish crashed after the EVOS (33). Herring in particular are critically important to seabirds and marine mammals because of their high lipid (fat) content and surface schooling habits, making them nutritious and easy to capture (34). Several fish-eating seabirds, including murre, cormorants, mergansers, pigeon guillemots, and black legged kittiwakes (21), and marine mammals, such as harbor seals (14), have exhibited persistent reductions in abundance in oiled areas since the EVOS.

*The 1990s paradigm of oil ecotoxicity recognizes risk of delayed recovery of apex consumers (seabirds and marine mammals) due to indirect, bottom-up trophic interactions of oil inducing prey limitation. It also recognizes that interspecific interactions will lead to a sequence of delayed indirect effects on rocky intertidal communities.*

### Public Policy Implications

In light of the recent research on chronic oil pollution, the current regulatory framework is grossly inadequate to protect marine life from chronic, non-point source discharges, especially along urbanized coastlines. The current regulatory framework is based on outdated risk assessment models (acute toxicity models based on narcosis) that fail to recognize (a) chronic direct population-level effects from persistent PAHs; (b) sublethal, indirect, and trophic-level effects of weathered oil; and (c) the importance of habitat quality in maintaining population structure (1, 3).

Streams and estuaries serve as critical habitat, a nursery, for vulnerable early developmental life stages of many species of fish and other sealife: these habitats also receive bulk chronic hydrocarbon discharges. Scientists estimate that the amount of highway runoff in the US to be about one quart of oil per person per year. This means that for every 50 million people the equivalent of an EVOS (or 11 million gallons as reported by Exxon) is dumped every year, year after year, into productive coastline habitats as urban run-off (1). Clearly, if sustainable coastal fish populations and other wildlife are to co-exist with industrialized societies, our focus needs to shift to the prevention, control, and restoration of these habitats from

contamination—whether it is from acute spills or chronic non-point source pollution.

One place to start is with our federal water quality standards for PAHs, which are currently 300 ppb. Scientists now recognize a toxicity threshold of 1 ppb aqueous PAHs for habitats where fish eggs and larvae rear (35). Revisions to federal storm-water discharge regulations should be based on the 1990s oil toxicity paradigm (1), where chronic toxicity mechanisms are the concern not short-term narcosis.

Resource managers and oil spill response managers currently use outdated ecotoxicity models from the 1970s to assess only the short-term acute toxicity risks and damage from oil pollution and, in so doing, severely understate environmental impacts of chronic oil pollution (1, 3). The regulatory framework governing oil discharge from offshore drilling platforms, oil tankers, and oil facilities regulated by federal discharge permits needs to be re-examined in light of the 1990s oil toxicity paradigm. Policies governing natural resource damage assessment following oil spills also fail to reflect this new appreciation of impacts of long-term

toxicity. For example, the Oil Pollution Act of 1990 has effectively eliminated long-term biological damage assessment and long-term monitoring in oil spills after the *Exxon Valdez*.

A precautionary approach to oil and gas development and use seems advisable in the face of mounting evidence that oil is far more persistent and deadly in protected nearshore habitats than previously recognized. Unless restrictive regulations of anthropogenic PAH sources are adopted to minimize the ubiquitous chronic oil pollution, public resources—land, water, fish, and sealife—will subsidize at great cost the environmental burden of our oil dependency.

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