

EVALUATING THE FEASIBILITY OF DEVELOPING A COMMUNITY-BASED FORAGE FISH SAMPLING PROJECT FOR THE EVOS GEM PROGRAM

Project Number: 030561

Restoration Category: Monitoring

Proposer: DOI-FWS

Lead Trustee Agency: USFWS

Cooperating Agencies:

Duration: 0.5 years

Cost FY 03: \$17,000

Geographic Area: The proposed close-out study will be conducted at the Alaska Maritime National Wildlife Refuge headquarters in Homer, Alaska

Injured Resource/Service: Common murres and other seabirds, and marine mammals injured by the T/V *Exxon Valdez* oil spill

ABSTRACT

This proposed project is a close-out study for Project 02561, a previously approved study designed to evaluate the feasibility of developing a community-based forage fish sampling project for the upcoming EVOS-sponsored Gulf Ecosystem Monitoring (GEM) program. The work will consist of compiling and analyzing information collected during FY 02, and writing a final close-out report discussing Project 02561 results.

INTRODUCTION

This proposed project is a close-out study for Project 02561, a previously approved study that is currently in the process of collecting information on the feasibility of developing community-based forage fish sampling projects for the upcoming EVOS-sponsored Gulf Ecosystem Monitoring (GEM) program. The work will consist of compiling and analyzing information collected during FY 02, and writing a final close-out report discussing Project 02561 results.

NEED FOR THE PROJECT

A. Statement of Problem

Project 02561 is currently collecting information on the feasibility of developing community-based forage fish sampling projects for the EVOS GEM program. There will be a need to compile and analyze information collected during FY 02, and write a final close-out report discussing Project 02561 results.

B. Rationale/Link to Restoration

The proposed project is a close-out study for previously approved Project 02561. There will be a need to compile and analyze information collected during FY 02, and write a final close-out report discussing Project 02561 results. The final report will provide the information needed to help design cost-effective community-based forage fish sampling studies to monitor long-term trends in capelin and sand lance stocks in the Kachemak Bay – lower Cook Inlet, Resurrection Bay, Kodiak Island, and Prince William Sound regions for the EVOS GEM program.

C. Location

The project will be conducted at the Alaska Maritime National Wildlife Refuge (AMNWR) headquarters in Homer, Alaska.

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

Community involvement is the central theme of the proposed project. The study is specifically designed to explore and evaluate the feasibility of directly involving residents (e.g., subsistence and personal use fishermen, charter boat operators, students, teachers, village and IRA council natural resource specialists, and other residents) from a number of oil spill communities in long-term forage fish monitoring studies that could become valuable components of the soon-to-be implemented GEM program.

PROJECT DESIGN

A. Objectives

The objectives are to compile and analyze the information collected by previously approved Project 02561, and write a final close-out report discussing project results.

B. Methods

The proposed close-out project will be conducted at the AMNWR headquarters in Homer, Alaska.

Data Collection

Data collection is not required during the proposed close-out study. Data that will be compiled, analyzed, and discussed by the project will consist of the information collected by Project 02561 in the various oil spill communities during FY 02.

Data Analysis

Data analysis will consist of compiling and tabulating Project 02561 community visit information into several categories and summarizing and discussing these topics in a final close-out report. Topics will include, but will not be limited to (1) the general types and levels of local interest expressed by residents in participating in community-based GEM forage fish studies; (2) the number of potential initial participants; (3) the species of predatory fish typically caught by potential participants (e.g., subsistence and personal use fishermen, charter boat operators, other interested residents); and (4) the general levels and kinds of support that would be required to encourage and maintain participation in community-based long-term forage fish studies (e.g., stipends for local project coordinators and students collecting predatory fish stomachs from fishermen; other potential needs, such as supplying small freezers to store samples before shipping them to research facilities, and covering costs of shipping samples to researchers). The report will provide the information needed by Trustee Council scientists to help assess and understand the levels and types of community participation that may be available for incorporation in long-term GEM forage fish monitoring studies.

Examples of draft data collection and analysis protocols will also be developed for use during potential community-based GEM forage fish monitoring studies and appended to the final close-out report. The protocols will be based on information obtained during the 1995-1999 APEX large fish as samplers studies and Project 02561 FY 02 community visits (see Roseneau and Byrd 1996, 1997, 1998, 1999, 2000).

C. Cooperating Agencies, Contracts, and Other Agency Assistance

No contracts or other agency assistance are needed for the study. The Alaska Maritime National Wildlife Refuge will donate two weeks of the project manager's time (G.V. Byrd) to the project. The refuge will also provide computers and office space for the study.

SCHEDULE

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

FY 03

- | | |
|------------------------|--|
| 1 Oct - 31 Dec 2002: | Compile and tabulate the FY 03 information; analyze information and organize results. |
| 1 Jan – 15 Mar 2003: | Begin preparing draft final report of FY 03 activities. |
| 16 March -15 Apr 2003: | Finalize and submit final report of FY 03 activities to Chief Scientist for peer-review on or before 15 April. |

B. Project Milestones and Endpoints

- | | |
|---------------|--|
| December 2002 | Finish compiling, and analyzing FY 03 data and organizing results. |
|---------------|--|

March 2003 Finish preparing draft final report of FY 03 activities

April 2003 Submit final draft report of FY 03 activities to Chief Scientist for peer review.

C. Completion Date

A final report on FY 02 Project 02561 results will be submitted to the Chief Scientist on or before 15 April 2003.

PUBLICATIONS AND REPORTS

A final report on FY 02 Project 02561 results will be submitted to the Chief Scientist by 15 April 2003.

PROFESSIONAL CONFERENCES

A brief summary of FY 02 Project 02561 results will be presented at the annual Trustee Council-sponsored workshop in January 2003.

NORMAL AGENCY MANAGEMENT

The proposed close-out work is not something that AMNWR or the FWS are required to do by statute or regulation, and the types of information analyzed in the study are not part of the normal AMNWR resource monitoring plan. The proposed close-out study could not be conducted without support from the EVOS Trustee Council.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

The proposed close-out study will be coordinated with Paul McCollum, Chugach Regional Resources Commission Fisheries Consultant. The refuge will donate up to two weeks of the project manager's time to the project, and will also provide office space and computers for the close-out work.

EXPLANATION OF CHANGES IN CONTINUING PROJECTS

This is a close-out project. No changes have been made to the analytical methods and schedules listed in the previously approved FY 02 Project 02561 DPD.

PROPOSED PRINCIPAL INVESTIGATOR

Name: David G. Roseneau
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PRINCIPAL INVESTIGATOR

1. David G. Roseneau (Co-Principal Investigator)

Mr. Roseneau will be responsible for conducting the proposed study. He will compile and analyze the information collected in the communities by Project 02561 during FY 02, and write a final close-out report discussing Project 02561 results. He will also be responsible for presenting the information at scientific meetings and workshops. Mr. Roseneau received his B.S. degree in wildlife management and M.S. degree in biology from the University of Alaska - Fairbanks in 1967 and 1972, respectively. His thesis research was on the numbers and distribution of gyrfalcons, *Falco rusticolus* on the Seward Peninsula, Alaska. He joined the U.S. Fish and Wildlife Service in January 1993, and was project leader for EVOS-sponsored common murre restoration studies at the Barren Islands during 1993-1994 (Projects 93049 and 94039). Mr. Roseneau was also principal investigator of the 1995-1999 APÉX Barren Islands seabird and large fish as samplers studies (Projects 95163J, 95163K, 96163J, 97163J, 97163K, 98163J, 98163K, 99163J, and 99163K), and the 1996-1997 and 1999 Barren Islands and 1998 and 2001 Chiswell Islands common murre population monitoring projects (Projects 96144, 97144, 98144, 99144 and 01144). Currently, he is principal investigator for Project 02561. Prior to 1993, Mr. Roseneau worked as a consulting biologist for over 20 years. During that time, he conducted and managed marine bird, raptor, and large mammal projects in Alaska and Canada for government agencies and private-sector clients, and he also participated in several large-scale murre (*Uria* spp.) monitoring projects. In 1976-1983, as co-principal investigator of NOAA/OCSEAP Research Unit 460, he conducted monitoring studies of murres and black-legged kittiwakes (*Rissa tridactyla*) at capes Lisburne, Lewis, and Thompson in the Chukchi Sea, and St. Lawrence, St. Matthew, and Hall islands in the Bering Sea. He also studied auklets (*Aethia* spp.) at St. Lawrence and St. Matthew islands, and participated in murre and kittiwake projects at Bluff in Norton Sound. During 1984-1986, he also participated in monitoring studies of murres and kittiwakes in the northeastern Chukchi Sea, and in 1987-1988, 1991-1992, and 1995-2000, he conducted additional murre and kittiwake monitoring work at capes Lisburne and Thompson, and Chamisso and Puffin islands. Mr. Roseneau is experienced in collecting and analyzing data on numbers, productivity, and food habits of seabirds; relating trends in numbers and productivity to changes in food webs and environmental parameters (e.g., air and sea temperatures, current patterns); and assessing potential impacts of petroleum exploration and development on nesting and foraging marine birds. He also has experience collecting and analyzing certain types of data on forage fish, and he has designed and successfully tested a new technique for sampling capelin (*Mallotus villosus*) and Pacific sand lance (*Ammodytes hexapterus*) by using stomach contents from sport-caught Pacific halibut (*Hippoglossus stenolepis*). He has broad knowledge of rock climbing techniques and has operated inflatable rafts and other outboard-powered boats in the Bering, Chukchi, and Beaufort seas and on various Alaskan rivers in excess of 3,000 hrs. He has also accrued several hundred additional hours operating time in small boats and larger, more powerful vessels (e.g. 25 ft, 300-400 hp HydroSports and Boston Whalers) in Kachemak Bay, Prince William Sound, and Kenai Peninsula and Barren Island waters. During his career, Mr. Roseneau has authored and co-authored 100 reports and publications, including 33 on Alaskan seabirds and 5 on a new sampling technique for capelin and sand lance. He has also made over 30 public presentations on seabirds, raptors, and caribou at scientific and wildlife law enforcement conferences and meetings.

Selected Publications

Roseneau, D.G. and G.V. Byrd. 1997. Using Pacific halibut to sample the availability of forage fishes to seabirds. Pp. 231-241 in *Forage Fishes in Marine Ecosystems*, Proceedings of the International Symposium on the Role of Forage Fishes in Marine Ecosystems, University of Alaska Sea Grant College Program Report No. 97-01, University of Alaska-Fairbanks, Fairbanks, Alaska.

- Murphy, E.C., A.M. Springer, and D.G. Roseneau. 1991. High annual variability in reproductive success of kittiwakes (*Rissa tridactyla* L.) at a colony in western Alaska. *J. Anim. Ecol.* 60: 515-534.
- Springer, A.M., E.C. Murphy, D.G. Roseneau, C.P. McRoy, and B.A. Cooper. 1987. Paradox of pelagic food webs in the northern Bering Sea - I. Seabird food habits. *Cont. Shelf Res.* 7: 895-911.
- Murphy, E.C., A.M. Springer, and D.G. Roseneau. 1986. Population status of *Uria aalge* at a colony in western Alaska: results and simulations. *Ibis* 128: 348-363.
- Springer, A.M., D.G. Roseneau, D.S. Lloyd, C.P. McRoy, and E.C. Murphy. 1986. Seabird responses to fluctuating prey availability in the eastern Bering Sea. *Marine Ecol. Prog. Ser.* 32: 1-12.
- Springer, A.M. and D.G. Roseneau. 1985. Copepod-based food webs: auklets and oceanography in the Bering Sea. *Marine Ecol. Prog. Ser.* 21: 229-237.
- Murphy, E.C., D.G. Roseneau, and P.J. Bente. 1984. An inland nest record for the Kittlitz's murrelet. *Condor* 86: 218.
- Springer, A.M., D.G. Roseneau, E.C. Murphy, and M.I. Springer. 1984. Environmental controls of marine food webs: food habits of seabirds in the eastern Chukchi Sea. *Can. J. Fish Aquat. Sci.* 41: 1202-1215.

OTHER KEY PERSONNEL

1. G. Vernon Byrd (Project Manager)

Mr. Byrd will supply overall guidance to the project, including providing advice during data analysis and report writing, and he will also review presentations and reports as needed. Mr. Byrd received a B.S. degree in wildlife management from the University of Georgia in 1968, did post-graduate studies in wildlife biology at the University of Alaska-Fairbanks in 1975, and completed his M.S. degree in wildlife resources management at the University of Idaho in 1989. His thesis, entitled "Seabirds in the Pribilof Islands, Alaska: Trends and monitoring methods", explored statistical procedures for analyzing kittiwake (*Rissa* spp.) and murre (*Uria* spp.) population data. Mr. Byrd has worked for the U.S. Fish and Wildlife Service for over 20 years, focusing on studies of marine birds in Alaska and Hawaii. His major interests center around monitoring long-term trends in seabird populations, including numbers of birds and reproductive performance, and he has worked at murre colonies in the Aleutian Islands, the Bering and Chukchi seas, and western Gulf of Alaska. Mr. Byrd was a co-author of the final T/V *Exxon Valdez* oil spill damage assessment report for murre. Also, he was project manager of the 1993-1994 Barren Islands common murre restoration monitoring projects (Projects 93049 and 94039), the 1995-1999 APEX Barren Islands seabird and large fish as samplers studies (Projects 95163J, 95163K, 96163J, 97163J, 97163K, 98163J, 98163K, 99163J, and 99163K), the 1996-1997 and 1999 Barren Islands and 1998 and 2001 Chiswell Islands common murre population monitoring projects (Project 96144, 97144, 99144, 98144, and 01144), and EVOS-sponsored work designed to remove predators from seabird nesting habitats (Projects 94041 and 95041). Currently, Mr. Byrd is project manager for Project 02561. He has authored and co-authored over 50 scientific papers and 75 U.S. Fish and Wildlife Service reports on field studies, and has made over 35 presentations on seabirds at scientific conferences and meetings. Mr. Byrd is the supervisory wildlife biologist at the Alaska Maritime National Wildlife Refuge, the premier seabird nesting area in the national public land system.

Selected Publications

- Roseneau, D.G. and G.V. Byrd. 1997. Using Pacific halibut to sample the availability of forage fishes to seabirds. Pp. 231-241 *in* Forage Fishes in Marine Ecosystems, Proceedings of the International Symposium on the Role of Forage Fishes in Marine Ecosystems, University of Alaska Sea Grant College Program Report No. 97-01, University of Alaska-Fairbanks, Fairbanks, Alaska.

- Byrd, G.V., E.C. Murphy, G.W. Kaiser, A.J. Kondratyev, and Y.V. Shibaev. 1993. Status and ecology of offshore fish-feeding alcids (murrelets and puffins) in the North Pacific Ocean. Proceedings of "Symposium on the Status, Ecology, and Conservation of Marine Birds of the Temperate North Pacific". Canadian Wildlife Service, Ottawa.
- Byrd, G.V., and J.C. Williams. Whiskered Auklet. 1993. A chapter describing the biology of the species in The birds of North America, No. 76 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia PA, and the American Ornithologists' Union, Washington, D.C. 12 pp.
- Byrd, G.V., and J.C. Williams. Red-legged Kittiwake. 1993. A chapter describing the biology of the species in The birds of North America No. 60 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia PA, and the American Ornithologists' Union, Washington, D.C. 12 pp.
- Springer, A.M. and G.V. Byrd. 1989. Seabird dependence on walleye pollock in the southeastern Bering Sea. Pages 667-677 in Proceedings of the International Symposium on the Biology and Management of Walleye Pollock. Alaska Sea Grant Rep. No. 89-1, Univ. of Alaska-Fairbanks, Fairbanks, Alaska.

LITERATURE CITED

- Roseneau, D.G, and G.V. Byrd. 1996. Using predatory fish to sample forage fishes, 1995. Appendix K (13 pp.) in APEX: Alaska Predator Ecosystem Experiment (D.C. Duffy, Compiler), *Exxon Valdez* Oil Spill Restoration Proj. Annual rept. (Restoration Proj. 95163), Alaska Natural Heritage Program, Univ. of Alaska - Anchorage, Anchorage, Alaska.
- _____. 1997. Using Pacific halibut to sample the availability of forage fishes to seabirds. Pp. 231-241 in Forage Fishes in Marine Ecosystems, Proceedings of the International Symposium on the Role of Forage Fishes in Marine Ecosystems, University of Alaska Sea Grant College Program Report No. 97-01, University of Alaska-Fairbanks, Fairbanks, Alaska.
- _____. 1998. Using predatory fish to sample forage fishes, 1997. Appendix K in APEX: Alaska Predator Ecosystem Experiment (D.C. Duffy, Compiler), *Exxon Valdez* Oil Spill Restoration Proj. Annual rept. (Restoration Proj. 97163), Alaska Natural Heritage Program, Univ. of Alaska - Anchorage, Anchorage, Alaska.
- _____. 1999. Using predatory fish to sample forage fishes, 1998. Appendix K in APEX: Alaska Predator Ecosystem Experiment (D.C. Duffy, Compiler), *Exxon Valdez* Oil Spill Restoration Proj. Annual rept. (Restoration Proj. 98163 A-T), Paumanok Solutions, 102 Aikahi Loop, Kailua, Hawaii 96734.
- _____. 2000. Using predatory fish to sample forage fishes, 1995-1999. Appendix K in APEX: Alaska Predator Ecosystem Experiment (D.C. Duffy, Compiler), *Exxon Valdez* Oil Spill Restoration Proj. Annual rept. (Restoration Proj. 99163 A-T), Paumanok Solutions, 102 Aikahi Loop, Kailua, Hawaii 96734.

2003 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

Budget Category:	Authorized FY 02	Proposed FY 03						
Personnel	\$26.1	\$14.8						
Travel	\$20.8	\$0.8						
Contractual	\$0.0	\$0.0						
Commodities	\$3.5	\$0.0						
Equipment	\$0.0	\$0.0	LONG RANGE FUNDING REQUIREMENTS					
Subtotal	\$50.4	\$15.6	Estimated					
General Administration	\$3.9	\$1.4	FY 04					
Project Total	\$54.3	\$17.0	\$0.0					
Full-time Equivalentents (FTE)	0.4	0.2						
Dollar amounts are shown in thousands of dollars.								
Other Resources								
<p>Comments: This proposed project is a close-out study. The proposed budget covers the cost of compiling and analyzing the information collected by previously approved Project 02561 in FY 02 , and writing a final report of Project 02561 activities.</p> <p>Travel costs to attend the 2003 EVOS workshop in Anchorage are included in the proposed budget.</p> <p>The Alaska Maritime National Wildlife Refuge will donate two weeks of the project manager's time to the project. The refuge will also provide computers and office space for the study.</p>								

FY03

Prepared: 04/10/02

Project Number: 03561
 Project Title: Evaluating the Feasibility of Developing a
 Community-based Forage Fish Sampling Project for the EVOS
 GEM Program
 Agency: DOI-FWS

2003 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	
Name	Position Description					
David G. Roseneau	Project Leader (Principal Investigator)	GS11/6	2.5	5.9	0.0	
G. Vernon Byrd	Project Manager	GS13/1	0.5	0.0	0.0	
T. DeGange	Program Manager	GS14	0.1	0.0	0.0	
		Subtotal	3.1	5.9	0.0	
						Personnel Total
Travel Costs:		Ticket Price	Round Trips	Total Days	Daily Per Diem	
Description						
Travel to Anchorage to attend the 2003 EVOS workshop		0.2	1	3	0.2	
						Travel Total

FY03

Prepared: 04/10/02

Project Number: 03561
 Project Title: Evaluating the Feasibility of Developing a
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2003 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

Contractual Costs:	
Description	
No contracts are needed for the proposed project	
When a non-trustee organization is used, the form 4A is required.	Contractual Total
Commodities Costs:	
Description	
[Note: FWS will furnish office supplies for the project]	
	Commodities Total

FY03

Prepared: 04/10/02

Project Number: 03561
 Project Title: Evaluating the Feasibility of Developing a
 Community-based Forage Fish Sampling Project for the
 EVOS GEM Program
 Agency: DOI-FWS

2003 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2002 - September 30, 2003

New Equipment Purchases:		Number of Units	Unit Price
Description			
No equipment is needed for the project			
Those purchases associated with replacement equipment should be indicated by placement of an R.		New Equipment Total	
Existing Equipment Usage:		Number of Units	
Description			
Computers and printers (non oil spill equipment)		2	
[Note: The FWS will also supply office space for the project]			

FY03

Prepared: 04/10/02

Project Number: 03561
 Project Title: Evaluating the Feasibility of Developing a
 Community-based Forage Fish Sampling Project for the EVOS
 GEM Program
 Agency: DOI-FWS