



LGL Alaska Research Associates, Inc.

1101 E. 76th Avenue, Suite B
Anchorage, Alaska 99518 USA
Tel: (907) 562-3339 Fax: (907) 562-7223
e-mail: alaska@lgl.com web: www.lgl.com

To: Heather McCarty
From: Michael Williams
Date: 20 January 2005
CC: Jo-Ann Mellish, Shannon Atkinson, Phil Zavadil
Re: PCCRC Award #62392-361274 2004 Annual Report

Dear Ms. McCarty,

Following is the 2004 annual report for the PCCRC project # 62392-361274 entitled "Integrating science and tradition: Ecosystem monitoring through the subsistence harvests of the Pribilof Islands, Alaska", which is a collaborative effort between the University of Alaska Fairbanks (UAF), LGL Alaska Research Associates, Inc. (LGL), and the Aleut Community of St Paul Island Tribal Government Ecosystem Conservation Office (ECO). The original objectives of the project were as follows:

- 1) *Collect biological samples to characterize the Bering Sea ecosystem from the subsistence harvest of marine mammals and seabirds on the Pribilof Islands.*
- 2) *Develop an educational training program for Pribilof Island residents to act as marine mammal and seabird sample collectors*
- 3) *Provide opportunities to augment scientific knowledge with traditional knowledge and vice versa*
- 4) *Monitor the contaminant levels in multi-species specimens collected during subsistence hunting events, including marine mammals and sea birds*
- 5) *Monitor the contaminant levels in other potential local indicator species collected opportunistically, such as Arctic foxes (a scavenger) and reindeer (a herbivore, representative of atmospheric and vegetative contamination levels)*
- 6) *Opportunistic distribution of samples to cooperating researchers with complementary research objectives and resources*
- 7) *Dissemination of research results to the Pribilof Island community*

We have made significant progress toward completing our objectives for this project despite numerous unforeseen obstacles. We have twice extended the performance period for the project due to timing of the subsistence hunts in 2003, flight cancellations as a result of weather delays, and flooding of the laboratory used for contaminant analyses.

Summary of Activity to date

We have completed the following project tasks:

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1. Identified specific tissue needs for collection
2. Identified and outlined protocol for the collection of samples
3. Presented project proposal to local subsistence hunters on St. Paul Island (M. Williams, April 2003)
4. Received authorization for collection of Steller sea lion and northern fur seal tissue samples under NMFS permits # 881-1668 and # 481-1623
5. Received authorization for contaminants analysis of Steller sea lion tissues under NMFS permit # 881-1668
6. Received authorization for contaminants analysis of northern fur seal tissues under NMFS permit # 881-1709
7. Submitted application for authorization to collect, transport and analyze migratory bird samples (USFWS permit indefinitely delayed due to regulatory delays)
8. Obtained sampling equipment and prepared sampling kits for use by samplers on St. Paul Island
9. ECO staff collected northern fur seal, Steller sea lion, Red-legged kittiwake, and Black-legged kittiwake tissue samples from subsistence harvests on St. Paul Island in 2003 and 2004.

Early in 2003, we identified the tissues that were needed for the planned analyses, and identified protocols to collect appropriate tissues during the subsistence harvests on St. Paul Island. In April, 2003 M. Williams (LGL Alaska Research Associates, Inc.) traveled to St. Paul Island where he presented our project, and solicited the input and support of subsistence hunters on St. Paul during a regularly scheduled meeting of the Steller sea lion hunters on St. Paul. The hunters have pledged their support for our project.

We received NMFS permit # 881-1709 for analysis of northern fur seal tissues. NMFS permit # 881-1668 and # 481-1623 were preexisting permits. We have applied for a U.S. Fish and Wildlife Service permit for the collection, transport and analysis of migratory bird samples. Current regulations prohibit the transport of migratory bird samples or parts except between Native Alaskan subsistence hunters in the same village. Indefinite delays in the regulatory process prompted us to consult with USFWS representatives to determine alternative permitting. After consultation with USFWS we determined that an amendment to the special purpose bird salvage permit (MB027111) currently held by LGL would cover our proposed activity. That amendment was processed by USFWS on 14 July 2004.

In April and May, 2003, sampling supplies were purchased and sampling kits were constructed. Kits were designed for ease of use during the subsistence harvest, to ensure that harvests were not disrupted by sampling procedures. Sampling kits were transported to St. Paul Island in July 2003 and stored at the Tribal Government of St. Paul Island Ecosystem Conservation Office.

During 2003, ECO staff collected samples from 3 northern fur seals, 3 Steller sea lions, 5 Black-legged kittiwakes, and 5 Red-legged kittiwakes taken during the subsistence harvests. Kittiwake samples are currently stored at the ECO office on St. Paul Island. During the fall of 2003, we obtained an extension of the grant due the timing of the subsistence hunts. In 2004, 20 juvenile male northern fur seals and one Steller sea lion were sampled during the subsistence harvest.

Steller sea lion and northern fur seal samples were shipped from St. Paul to the Alaska Sea Life Center in 2004. Tissue samples from Steller sea lions included blubber and liver. Tissues collected from 10 of the 20 northern fur seals sampled in 2004 included blubber, muscle, liver, kidney, testes, brain, heart and lung (Table 1). Blubber and liver were the only tissues collected from the remaining 10 sampled fur seals in 2004. Samples collected in 2003 from the three northern fur seals included blubber, liver, kidney, and muscle (Table 1).

Table 1. Northern fur seal tissue samples collected in 2003 and 2004.

	Blubber	Liver	Muscle	Kidney	Brain	Testes	Heart	Lung
NF0401	X	X	X	X	X	X	X	X
NF0402	X	X	X	X	X	X	X	X
NF0403	X	X	X	X	X	X	X	X
NF0404	X	X	X	X	X	X	X	X
NF0405	X	X	X	X	X	X	X	X
NF0406	X	X	X	X	X	X	X	X
NF0407	X	X	X	X	X	X	X	X
NF0408	X	X	X	X	X	X	X	X
NF0409	X	X	X	X	X	X	X	X
NF0410	X	X	X	X	X	X	X	X
NF0411	X	X						
NF0412	X	X						
NF0413	X	X						
NF0414	X	X						
NF0415	X	X						
NF0416	X	X						
NF0417	X	X						
NF0418	X	X						
NF0419	X	X						
NF0420	X	X						
NF0301	X	X	X	X				
NF0302	X	X	X	X				
NF0303	X	X	X	X				

Summary of Activities not completed

Laboratory facilities used by the Alaska Sea Life Center in Hawaii were flooded in late 2004. Damage to facilities and equipment is still being assessed and repaired. We are waiting to ship samples once we have confirmation that the equipment and facilities are operational.

Budget Status

For work completed through 31 December 2004 LGL has invoiced \$9479.69. \$10,770.31 was remaining prior to preparation of this report. We will work with ASLC and Tribal ECO staff on preparation of a report of the contaminant analyses, once completed, and to assess which organization’s staff is available for presentation of this material to the community.