Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Genetic Analysis of Lynx and other Mammals
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Montana
Effective Dates: 9/1/2001 - 9/1/2004
Funding Amount: $18,000

Investigators and Agency Representative:
NPS Contact: Peter A. Dratch, Endangered Species Program, National Park Service, 1201 Oak Ridge Drive, Suite 200, Fort Collins, CO 80525, 970-225-3596, 970-225-3585 (fax), Peter_Dratch@nps.gov

Investigator: Scott Mills, Ph.D., Wildlife Biology Department, School of Forestry, University of Montana, Missoula, MT 59812, 406-243-5552 (ph), 406-243-4557 (fax), smills@forestry.umt.edu

Project Abstract:

The project consists of molecular and population genetic analysis of lynx and other mammals in units of the National Park Service (NPS). Sample collection will be conducted by NPS staff, and will focus initially on hair from set snares. Protocols for sample collection will be determined by the NPS currently established methods. Hair samples will be identified to species wherever possible, using species-specific molecular markers that have been developed by researchers at the Carnivore Conservation Genetics Laboratory at the University of Montana. Gender determination and individualization will be attempted on samples identified as lynx, as well as targeted mustelids in which the laboratory has experience.

With the listing of the lynx as threatened in 2000, the National Park Service, along with other federal agencies, has made a priority of determining where the species is present on lands that it manages. A National Lynx Detection Protocol has been developed by the U.S. Forest Service for determining presence or absence of lynx by laying down a grid of baited hair snares and then conducting a DNA analysis of hairs collected. Some national parks in the Rocky Mountains have utilized this methodology and had their samples analyzed at the Carnivore Conservation Genetics Laboratory in conjunction with the Forest Service. This contract establishes an independent relationship that will enable all NPS units collecting samples that are suspected to be lynx hairs to have that identification confirmed. The budget allows hair analysis over three years, so as parks increase sample effort or become more successful at collecting hairs, those samples will be analyzed.

In Yellowstone NP a number of cooperators have conducted a systematic search to locate lynx in the park. They have used hair snares, track surveys and overflights in potential lynx habitats throughout the park. Hair samples, analyzed at the University of Montana laboratory, have verified three individual lynx found east of Yellowstone Lake.

Outcomes with Completion Dates:

Final Products include: 1) Genetic analysis of lynx and other mammals in national parks; 2) Utilization and discussion of low impact methods of population genetic analysis; and 3) Participation in a workshop and handbook on understanding modern molecular genetic methods focused on NPS resource managers.

Keywords: lynx, genetic analysis, population genetics, University of Montana, NPS-Biological Resources Management Division; Yellowstone NP, Carnivore Conservation Genetics Laboratory, hair snares

For Administrative Use Only:

Date Annual Report Received:
Date Final Report Received:
Publications, etc. on file: