



## RWU 4201 Wildlife Ecology in Rocky Mountain Landscapes

# Using DNA to Determine the Presence of Lynx and Identify Hybridization Between Lynx and Bobcats

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### Problem Statement

Canada lynx were listed as Threatened throughout the contiguous U.S. in March 2000. The Wildlife Ecology Research Unit of the Rocky Mountain Research Station (RWU 4201), the Superior National Forest, and the USFS Region 1 have been involved in a coordinated effort to document the return and current distribution of Canada lynx in Minnesota for the past three years.

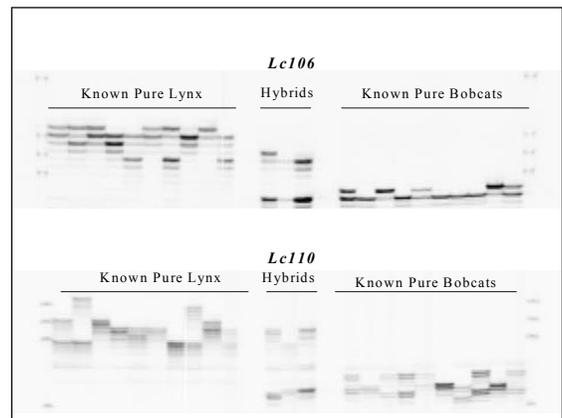


In 2002, a Superior National Forest wildlife biologist obtained tissue samples from the carcasses of two lynx with somewhat atypical physical characteristics. These tissue samples were sent to the Wildlife Ecology Unit's genetics laboratory in Missoula, Montana, where the laboratory designed a genetic test to detect potential hybridization between lynx and bobcats (a phenomenon never documented before in the wild).

### Research Approach and Results

The DNA test was applied to the Minnesota samples and showed that the two animals in question were Canada lynx X bobcat hybrids. An additional sample, obtained from hair found along the track of a suspected Canada lynx, was also sent to the lab for identification; this hair sample was also found to be from a lynx X bobcat hybrid. Scientists have now positively identified three lynx X bobcat hybrids out of 19 individual lynx sampled from Minnesota. All samples were evidence of female lynx breeding with male bobcats (determined as part of the assay designed by the laboratory).

These findings have implications for lynx recovery in Minnesota. Hybrids are thought to be sterile (or at least have reduced fitness), suggesting that the limited number of female lynx in Minnesota are wasting reproductive effort producing hybrids. After these findings were released additional hybrids were discovered by RWU 4201 and partners in Maine and New Brunswick



This research has been peer reviewed and accepted by the journal *Conservation Genetics*. It has also been the subject of several newspapers and other media sources.

### Partners

This project is partnership between the USDA FS - Rocky Mountain Research, The Northern (R1) and Eastern Region (R9) of the USDA Forest Service, the Superior National Forest, The University of Minnesota, Minnesota DNR, Maine Department of Inland Fisheries, and the Canadian Department of Natural Resources and Energy (New Brunswick).