Questions and Answers Regarding
Hybridization of Canada lynx with Bobcats in Minnesota

As part of ongoing lynx research, USDA Forest Service research scientists have discovered through DNA analysis of hair and tissue samples evidence of hybridization between the bobcat and Canada lynx in the wild. This is the first time hybridization has been documented in wild populations of lynx and bobcat.

Where were these samples collected?

Three separate samples of animals confirmed as lynx/bobcat hybrids were collected in northeastern Minnesota.

In February 2002, a hair sample was collected during a survey at the Blind Temperance River near the Sawbill Trail in Cook County, Minnesota.

In November 2002, a dead animal was reported to Forest Service project personnel who retrieved the carcass from Highway 61 at Knife River in Lake County, Minnesota – east of Duluth. A tissue sample was collected from the animal and sent to the Rocky Mountain Research Station for analysis.

In January 2003, an animal was taken by a trapper in Itasca County near Hibbing, Minnesota. The animal was checked in at a Minnesota Department of Natural Resources furbearer registration station as a bobcat, although it had some characteristics common to lynx. A tissue sample was collected and sent to the Rocky Mountain Research Station for analysis.

How prevalent is hybridization of lynx with bobcats in Minnesota?

Scientists have now positively identified three lynx/bobcat hybrids out of 19 individual lynx sampled from Minnesota. The other 16 individuals were pure lynx.

This research is the first to document hybridization of lynx with bobcat.

How widespread is the occurrence of hybridization between lynx and bobcat?

We don't know at this time. Hopefully, future research will identify how rare or common hybridization is. Throughout the contiguous United States, the range of the bobcat overlaps that of the lynx. Lynx are highly adapted (large feet act like snowshoes) to live in areas where there is deep snow, which tends to isolate these two species in the winter because bobcats have a higher foot load (more weight per size of foot) and sink into the snow and thus are at a competitive disadvantage to lynx in deep snow.

Have instances of hybridization been discovered outside of Minnesota?

This is the first time hybridization between lynx and bobcat in the wild has been documented. Based on the analysis of available hair samples collected in the National Lynx Survey, we have found no other occurrences of hybridization between the species.

What is the National Lynx Survey?

In 1999 the Forest Service, through a partnership with the University of Montana, with assistance and participation of the Fish and Wildlife Service, Bureau of Land Management, National Park Service, tribes and states began a three-year nationwide survey of habitat to better identify presence and absence of Canada lynx in the lower 48 states, and to support lynx recovery efforts.

The survey has been conducted on lands east from Oregon and Washington to several Rocky Mountain and Great Lakes regions, as well as in Maine. It has been conducted under established scientific protocols for field collection and DNA analysis of hair left by animals on specially designed "rubbing posts" that contain a lure to attract lynx.

During the first two years of the survey, 1,071 samples were collected that could be identified to species. Of those, 34 were lynx hair samples. Black bear was the most commonly detected species (566 samples), and bobcat was the second most commonly detected species (149 samples).

What factors may have contributed to this occurrence of hybridization?

We don't know at this time. Hopefully future research will shed some light on the cause.

Is hybridization considered a threat to the lynx?

Based on available information, we are uncertain what – if any – impacts hybridization may have on lynx conservation. Because the ranges of lynx and bobcat naturally overlap within the contiguous United States and parts of southern Canada, it is likely that this is a natural incident.

Were these lynx/bobcat hybrids sterile?

Further testing of the samples is needed to determine whether these hybrids were sterile. In other species, there have been instances of both – sterile and fertile hybrid offspring.

Will this discovery affect federal management of lynx habitat?

No, the Forest Service and Fish and Wildlife Service will continue to use an interagency Conservation Agreement to guide conservation of the lynx and its habitat, particularly during consultations with federal agencies regarding Endangered Species Act considerations.

What is the interagency conservation agreement?

The Fish and Wildlife Service and the Forest Service have signed a formal Conservation Agreement that identifies actions that the agencies agree to take to reduce or eliminate harmful effects or risks to lynx and its habitat on federal lands.

The two agencies are also guided by the Lynx Conservation Assessment and Strategy which provides a comprehensive approach to conserving lynx through management of federal lands. This document can be viewed at: http://www.fs.fed.us/r1/wildlife/carnivore/Lynx/ConsStrat.htm

How unusual is it to find hybridization among mammals?

Hybridization occasionally occurs among animals – for example wolf/dog hybrids and horse/donkey hybrids.

Are hybrid offspring usually sterile?

There have been instances where hybrid offspring have been sterile, and other instances where they have been fertile.

What further testing or surveys will be done to identify other instances of hybridization among lynx and bobcat?

As funding becomes available, future research projects will include further genetic analysis of bobcats and lynx and fieldwork to understand the ecological implications of hybridization.

Has this research been peer reviewed?

The DNA test protocol has been peer reviewed. The analysis of that data has undergone informal peer review and is being submitted to a scientific journal.

Are lynx and bobcat distinct species?

Yes.

Will this affect the Forest Plan amendment process?

This information will be considered within the Forest Plan amendment process as the draft EISs are prepared.

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