

SHOWCASE SPECIES: NORTHEAST

LYNX IN MAINE

The Issue

The Canada lynx once ranged throughout the northern tier of states but has declined as a result of habitat loss to agriculture and urban development. Although Maine now harbors the largest lynx population in the East—and quite likely in the Lower 48—the cats are jeopardized by an absence of forest planning on private lands, changing forest practices, pressure to develop remote areas and global warming.

Natural History

Although commonly called the *Canada* lynx, this 20 to 30 pound cat with bobbed tail and tufted ears occurred historically throughout the northern reaches of North America as well as northern Eurasia. Historically, lynx were common in Maine, New Hampshire and the Adirondacks, though their numbers fluctuated greatly, perhaps in synchrony with the 10-year population cycle of their primary prey, the snowshoe hare. At times of peak hare abundance and lynx numbers, the cats sometimes occurred as far south as Pennsylvania.

Lynx are associated with boreal environments (northern forests) and are common in Canada and Alaska. Maine lies on the edge of lynx range in a region where the forest changes from boreal spruce-fir forest to the northern hardwood forest more typical of New England. Prior to 1913, the cat was found throughout Maine except in coastal areas. After that date, it remained most common in forests in the western and northern parts of the state, which today marks the southern limit of its range in the East.

The lynx resembles the bobcat, though the lynx has longer legs, prominent ear tufts and a distinct ruff around the face, with gray rather than the more typically reddish fur of the bobcat. Its relatively large, furry feet adapt it to walking or running on snow. In Canada its primary prey is the snowshoe hare, a species



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that follows regular 10-year cycles of alternating low and high populations. When hare numbers are up, Canadian lynx populations tend to increase, and when hares die off, the cat dwindles too.

Listing

The U.S. Fish and Wildlife Service in 2000 listed the Canada lynx as threatened in 14 states, including Maine, New Hampshire, Vermont and New York. Maine is the only northeastern state that currently has a breeding lynx population, although a few confirmed sightings of lynx have been reported in New Hampshire.

Management

The Maine Department of Inland Fisheries and Wildlife, University of Maine and the U.S. Fish and Wildlife Service are conducting research, initiated in 1999, to determine lynx status and distribution, to understand the cat's habitat needs better, to document how forest management affects snowshoe hares and lynx, to identify factors that may limit lynx numbers and to help develop techniques for detecting lynx in the Northeast. Research results were provided to the Service as the agency developed critical habitat and

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recovery plans, so conservation plans would be relevant to lynx in the Northeast. These studies found that a breeding population of lynx inhabited Maine, particularly the northern forests region.

Large-scale clear-cutting in the 1970s and 1980s to salvage spruce and fir trees damaged by spruce budworm created the especially good lynx habitat in Maine today. The regenerating clear-cuts created habitat perfect for snowshoe hares, the main prey of the lynx.

As many as 1,000 lynx may now live in Maine, probably more lynx than ever before in state history. Lynx habitat in Maine covers 6.5 million acres, an area in the northern part of the state roughly the size of Massachusetts.

Public outcry against large clear cuts in Maine has led to regulations limiting clear-cutting and stimulated the local forest industry to adopt “partial harvesting,” a logging method in which only selected individual trees are removed from an area over a period of years. Biologists are uncertain whether the adoption of extensive use of partial harvesting will create the quality and quantity of habitat lynx needed for recovery. Recent research suggests that lynx in northern Maine are not attracted to landscapes dominated by partial harvests, in which snowshoe hare densities are substantially lower. (It should be noted that clear-cutting in drier parts of the nation, such as the West, probably would not benefit lynx as it does in Maine, where forests regenerate more quickly).

Biologists in Maine are considering the use of lynx and pine marten, an arboreal weasel, as “umbrella species,” the management of which yields protection for other species using the same habitat. The lynx is an umbrella species for wildlife that use young forest, including moose, chestnut-sided warblers and woodcock. The pine marten serves as an umbrella species for plants and animals that thrive in forests more than 35 years old.

The U.S. Fish and Wildlife Service is encouraging landowners to incorporate forest-management systems using the lynx and pine marten to provide a balance of regenerating and mature forest. The agency can provide private landowners with help in managing forests for

lynx, under the U.S. Fish and Wildlife Service Landowner Incentive Program and the Safe Harbors Program, both of which provide incentives for landowners who manage habitat in a way that protects endangered species. For example, three landowners recently enrolled 500,000 acres in the new Healthy Forest Reserve Program and committed to developing forest management plans for lynx and biodiversity.

In November, the Service designated critical habitat for the lynx. In a controversial move, the agency excluded from the designation all lands in



Maine, alleging that voluntary partnerships among private landowners, the state and The Nature Conservancy made unnecessary the need for critical habitat protection under the Endangered Species Act.

The Nature Conservancy has purchased large amounts of forested land in northern Maine for lynx recovery. The Forest Society of Maine also has bought conservation easements in northern Maine and has helped acquire forested lands. Many forest landowners help fund lynx and snowshoe hare research through the Maine Cooperative Forestry Research Unit.

Funding

Since the lynx was listed in 2000, the U.S. Fish and Wildlife Service Northeast Regional Office in Hadley, Maine, has provided several hundred thousand

dollars for state and university lynx research, including about \$100,000 for lynx recovery work in 2005. In 2006, \$500,000 of Natural Resource Conservation Service funding from the Healthy Forest Reserve Program was spent on landowner incentive programs within Maine lynx habitat.

Funding from all government sources for lynx recovery nationwide ranks the cat at 61 out of 1,311 species, according to the U.S. Fish and Wildlife Service fiscal year 2004 report (the most recent available) to Congress, *Federal and State Endangered and Threatened Species Expenditures*.^{*} Total funding from all government sources that year for lynx recovery nationwide was about \$3 million, with \$772,000 coming from the Service. “Clearly, the cost of lynx recovery in Maine far exceeds what the Service resources allow the agency to put into it,” says John Kostyack, director of Wildlife Conservation Campaigns at the National Wildlife Federation. “Congress needs to ensure that the Fish and Wildlife Service has adequate funding for this and other listed species so the agency can do its work efficiently and with the best interests of listed species in mind.”

Local Contacts

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Other Threats

Immediate key threats to lynx recovery include collisions with motor vehicles and shooting. The cats also are jeopardized by an absence of forest planning on private lands, changing forest practices and pressure to develop remote areas, including the construction of vacation homes.



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^{*} The U.S. Fish and Wildlife *Federal and State Endangered and Threatened Species Expenditures* report incorporates subjective estimates provided by regulated entities without any independent verification and without effort to segregate Endangered Species Act expenditures from other related expenditures. However, for most listed species, no other funding data is available.

THREATS FROM GLOBAL WARMING



Global warming poses a threat to lynx by reducing the deep snows that historically have blanketed Maine’s north woods. Lynx are adapted to moving across snow, with their large, heavily furred feet buoying them up almost like snowshoes. Recent studies in Canada suggest that as climate warms, diminished snowfall probably will allow other predators, such as coyotes and bobcats, to compete more effectively against the lynx, which already faces tough survival challenges—in Canada, 70 to 80 percent of lynx do not make it past three years old.