

**FEDERALLY
THREATENED**

Canada Lynx

(*Lynx canadensis*)



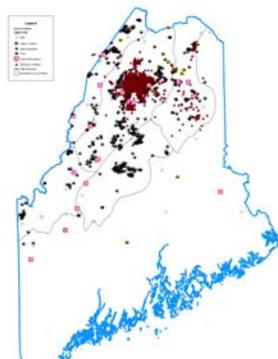
MDIFW

Description

The loup cervier, lucivee, and Indian devil are all names used by old-time Maine woodsmen for the elusive Canada lynx. This forest-dwelling cat is found in northern latitudes and high mountains where deep snow and spruce/fir forest are common. Both lynx and bobcats are found in Maine. Lynx are more common in northern and western Maine and bobcats are more common in eastern and southern Maine. Although lynx are similar in size and appearance to bobcats, lynx appear larger because of their long legs. Lynx have long black tufts of fur on their ears and a short, completely black-tipped tail. Bobcats have shorter tufts on their ears, and the tip of their tail is black on top and white underneath. A lynx winter coat is light gray and faintly spotted, and the summer coat is much shorter and has a reddish-brown cast. Lynx have unusually large, densely haired feet that help them travel over snow. Adult males average about 33½ inches long and weigh between 26 and 30 pounds. Females are about 32 inches long and average 19 pounds.

Range and Habitat

Lynx are common throughout the boreal forest of Alaska and Canada. The southern portion of their range once extended into the U.S. in the Rocky Mountains, Great Lakes states, and the Northeast. Today, in the Lower-48 states they are known to exist in Montana, Washington, Maine, and Minnesota and have been reintroduced to Colorado. Lynx have also been observed in New Hampshire and Vermont, but their status is not known.



Confirmed observation of
lynx in Maine 1999-2008

In Maine, lynx are most common in the spruce/fir flats of Aroostook and Piscataquis counties and northern Penobscot, Somerset, Franklin and Oxford Counties, where snow depths are often the highest in the state. Historic and recent observations suggest lynx also occasionally occur in portions of eastern Maine.

Today, the majority of northern Maine's spruce/fir forests are comprised of young dense sapling trees created after a major forest disturbance. During the late 1970s and 1980s, a major insect outbreak damaged or killed most of Maine's spruce and fir. As a result, large areas of spruce and fir were cut. Thirty years later these regenerating sapling spruce and fir stands supported the highest densities of snowshoe hares, the primary food for lynx. Through the 1990s, lynx populations increased and by 2006 reached record high numbers. Current models suggest between 600 and 1,200 adult lynx likely occupied northern and western Maine spruce/fir flats.

Life History and Ecology

Mating occurs during March, and 1-7 young are born 60-65 days later in May. Lynx in Maine have produced litters of 1-5 kittens (average 3 kittens/litter when hares were abundant). Lynx dens in Maine consist of a bed under thick regenerating fir trees or elevated downed logs. The female raises the kittens. Kittens leave the den area in late June or early July and stay with the female for a full year.

Lynx are highly specialized to hunt snowshoe hare, which comprise over 75 percent of their diet. Lynx consume one or two hares a day. In the summer, the diet is more varied and may include grouse, small mammals, and squirrels.

Although lynx were once considered nocturnal, lynx are actually active during both day and night. Males are solitary for most of the year except the breeding

season. Females and their kittens (family groups) hunt together to increase hunting success. Size of the home range varies with snowshoe hare density, habitat, and season. In Maine, male home ranges are twice as large as a female's home range; when hares are abundant males use areas equivalent to half a township (18 square miles). Home ranges of male and female lynx overlap, with a female lynx sharing her entire range with a male. A male may share portions of his home range with 1 to 3 adult female lynx.

In northern Canada and Alaska, snowshoe hare and lynx populations undergo a 10-year cycle. The USFWS, University of Maine, and MDIFW are studying snowshoe hare and lynx fluctuations in Maine. Between 2000 and 2005, snowshoe hares were common and exceeded 2/hectare in regenerating spruce/fir clearcuts, most female lynx produced litters, litters were large, most kittens survived their first year, home ranges were small, and lynx densities were high. Between 2006 and 2009, snowshoe hare densities declined to 1/hectare, fewer lynx gave birth to kittens, litters were smaller, but home range size did not change and most kittens survived. In 2010, most female lynx had kittens and snowshoe hares were common.

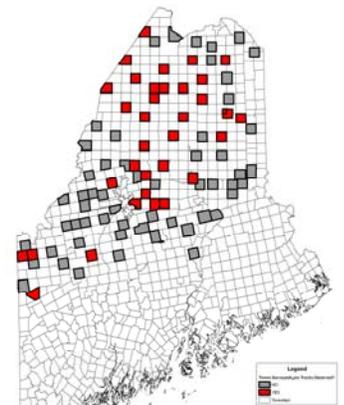
Threats

Lynx in Maine are part of a larger population that includes southern Quebec and western New Brunswick. Lynx move between these areas. When hares are less common, these areas may be more important to maintaining lynx in Maine. Although competition with other predators, incidental catches of lynx in traps, and roads may kill some lynx, habitat loss will have the greatest influence on future lynx numbers. As the climate warms, northern hardwoods may become more common in northern Maine and winters with more rain could cause lynx to move northward. Changes in forest ownerships patterns that lead to more human development and roads in northern Maine could be detrimental to lynx. Although regenerating conifer clearcuts that are dense or moderately stocked provides ideal habitat for lynx and snowshoe hares, forest management activities that promote young dense conifer understories can also support lynx and snowshoe hare. The recent passage of the Maine Forest Practices Act (FPA) that promotes partial harvest of forest has the potential to influence future amounts of habitat for lynx. The FPA allows forest managers to clearcut large areas to improve or create wildlife habitat when prescribed and justified by a certified wildlife professional. If landowners continue to use partial harvesting techniques, shelterwood and overstory removals in maturing spruce/fir forest can also foster dense conifer regeneration. The USFWS, University of Maine, and MDIFW are working together to determine what types and amount of habitat are needed to support lynx and guide forest management activities in Maine.

Conservation and Management

Lynx likely have always been present in Maine, but populations have fluctuated. Several hundred to over a thousand animals may occupy the state when snowshoe hares and optimal habitat conditions are common. In 1997, lynx was considered for state listing, but due to insufficient information to assess the status of lynx in Maine, lynx were identified as a Species of Special Concern. In 1999, MDIFW and the U.S. Fish and Wildlife Service (USFWS) began a 12-year telemetry study to determine the status of lynx in Maine. A year later, the USFWS listed the lynx as threatened in Maine and 13 other states due to concerns of inadequate management of forests on Federal lands in the western US. Maine's lynx population had been increasing due to the abundance of young dense spruce/fir forest in northern Maine. By 2006, the number of lynx in Maine exceeded Maine's state listing criteria, thus lynx remained a Species of Special Concern. Although lynx are sometimes caught in traps set for other furbearers, trapping and hunting seasons for lynx have been closed in Maine, since 1967. Under the U.S. Endangered Species Act, the capture and live release of a listed species is considered a "take", and is prohibited unless a permit or other allowance is granted by the USFWS. Currently, the USFWS is considering our application for an incidental take permit to cover the accidental catches of lynx by trappers. The ESA requires the USFWS designates Critical Habitat and develop a recovery plan for listed species. In 2009, the USFWS designated 10,000 square miles of critical habitat in northern Maine. Although, the USFWS has not developed a recovery plan for lynx, an interim recover plan outline has been developed.

Much of our knowledge of lynx in Maine comes from a study conducted near Clayton Lake from 1999-2010 where 85 lynx were radio-tagged and 42 dens and 111 kittens were observed. This study documented lynx spatial and habitat use, dispersal distances, sources of mortality, and reproductive rates. We also tested several survey techniques to document lynx occupancy rates. We found winter track surveys to be the most effective and efficient survey for documenting lynx presence. Between 2003 and 2008, MDIFW initiated winter snow track survey to assess the relative abundance and distribution of lynx throughout their range in Maine. In northern Maine, lynx were found in more than 70% of the towns that were surveyed. At the edge of their range in Maine, fewer areas were occupied by lynx.



Surveys documenting lynx tracks in Maine (2003-2008)

In the late 1990s, dense regenerating spruce/fir reached record high levels as the widespread clearcuts of the 1980s attained prime conditions for snowshoe hares. Lynx populations increased and by 2006, Maine's lynx population reached a record high. However, the cutting of spruce and fir at the rate which occurred in the 1980's was not sustainable. More than 48% of Maine's spruce and fir are sapling size trees that support hares and lynx.

Currently, there isn't sufficient younger spruce/fir (<30%) to replace these trees as they age. Snowshoe hare and lynx populations will likely decline, but future habitat conditions will likely be sufficient for lynx to persist. Older stands of spruce and fir that foster dense understories of younger spruce and fir can also benefit lynx. Land managers and biologist will work together to ensure that sufficient dense young spruce and fir are present on the landscape.

Recommendations:

- ◆ Follow MDIFW recommendations to minimize the incidental take of lynx while trapping other furbearers.

Forest Management

- ◆ Forest management activities in northern Maine's spruce/fir forest will be most beneficial to lynx, because these area support long-periods of deep snow, where a lynx's large feet give them a competitive advantage to other forest carnivores.
- ◆ Forest management activities that promote a sustainable supply of moderately-dense to densely stocked spruce and fir sapling trees will benefit lynx and snowshoe hare.
- ◆ Forest harvest activities that promote large connected blocks of young spruce/fir will support higher densities of lynx and snowshoe hare.
- ◆ Ensure that large blocks of moderately to densely stocked spruce/fir sapling understories are distributed widely over the landscape of northern and western Maine.
- ◆ Conserve large blocks of unfragmented forestland.
 - Avoid the construction of new high-volume/high-speed highways in currently undeveloped areas of northern and western Maine.
 - Avoid permanent loss of spruce/fir forest in northern and western Maine from development.

For more information contact Maine's Mammal Program at (207) 941-4466.