Eastern Wolf

Canis lupus

Federal Listing	E
State Listing	E
Global Rank	G4G5
State Rank	SX
Regional Status	

Photo by unknown/web

Justification (Reason for Concern in NH)

Wolves play an important role as a top predator in the places they inhabit feeding primarily on large mammals such as deer and moose, removing sick and injured animals from those populations. They are highly social and live in packs hunting and raising their young (USFWS 1992). Wolves prefer large contiguous blocks of mixed deciduous-conifer forest and conifer forested wetlands (Mladenoff and Sickley 1998). These habitats are threatened by subdivision and development in the Northeast.   The eastern wolf, found in southeastern Canada, is likely most closely related to red wolves (*Canis rufus*) and coyotes (*Canis latrans*) than to eastern wolves (Wilson et al. 2000). Much of the literature over the past 15 years suggests that *Canis lycaon* should be considered an individual species, yet there is still much debate over the influence and overlap with closely related species such as red wolves (*Canis rufus*) and coyotes (*Canis latrans*). As a result the conservation and listing of this species is still controversial yet important in the due to the potential impacts as a rare species.   Recent evidence of eastern wolves in Maine, NH, VT, and NY, is listed in Thiel and Wydeven, 2011.

Distribution

Wolves were extirpated from New Hampshire in the early 1800's.

Currently, the closest population of eastern wolves exists in Quebec, north of the St. Lawrence River. In general these populations in Quebec appear to be relatively stable (Thiel and Wydeven 2011). Quebec does not recognize eastern wolves as a separate species (Thiel and Wydeven 2011). Consequently there are no large areas closed to public harvest and the level of wolf exploitation in this area may reduce the likelihood if eastern wolves expanding south of the Saint Lawrence River and increase the likelihood of hybridization with northeastern coyotes (Wydeven et al. 1998, Carroll 2003).

Recent GIS habitat assessments have suggested that New Hampshire has 4,591 km^2 (1773 mi^2) of core habitat and 1,222 km^2 (472 mi^2) of dispersal habitat. This habitat was connected to a much larger area in Maine which collectively contained 48,787 km^2 (18,837 mi^2) of habitat which would support at least 488 wolves (Harrison and Chapin 1997). This is more than the minimum viable population size of 200 animals set by the original recovery plan for wolves (Thiel and Wydeven 2011).

Primary obstacles to recolonization include the Saint Lawrence Seaway (75km from Maine border), extensive areas of unforested agricultural land, current population status and management of wolves in Canada, and areas with high human and road densities in southern Quebec (Harrison and Chapin 1998).

Wolves can disperse long distances, often crossing obstacles such as 4 lane highways (Merril 2000). The recent expansion of wolf populations in Europe and the midwestern states suggests that the potential for a natural recolonization of wolves in New Hampshire, although difficult, may be possible.

Habitat

Historically, wolves lived in a wide variety of habitats throughout the northern hemisphere, from mountain forests to open prairie (Mech 1970). The primary requirement for a wolf population is a source of large prey, such as deer, moose, or bison.

Mladenoff and Sickley (1998) and Harrison and Chapin (1998) propose that eastern wolf habitat includes:
Mixed deciduous conifer forest
Conifer forested wetlands
Public and industrial (e.g. timber investment) ownerships
Landscapes with road densities less than 0.70 km/km^2 and
Landscapes with human densities less than 4 individuals/km^2

Small ownerships and private lands seem to be avoided as well as land cover classes including agriculture and deciduous forests.

NH Wildlife Action Plan Habitats

- Northern Hardwood-Conifer Forest
- High Elevation Spruce-Fir Forest

Species Distribution
Map Not Available
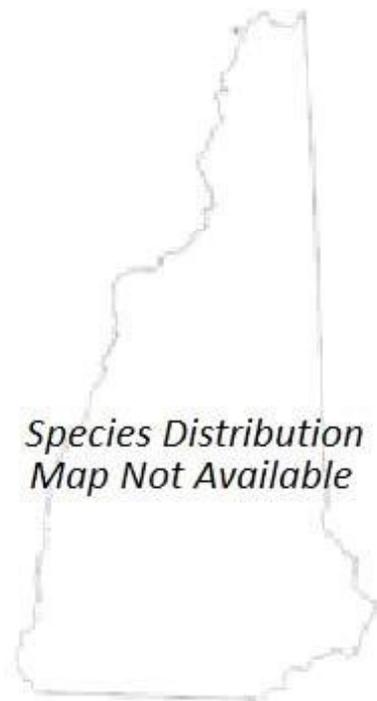
Distribution Map

Current Species and Habitat Condition in New Hampshire

Wolf populations are currently considered stable in Quebec (Lariviere et al. 2000). An increase in protection or a decrease in hunting/trapping pressure on wolves in Quebec would likely lead to an increase in wolf numbers, and ultimately to an increase in dispersal rates (Wydeven et al. 1998). Any increase in wolf dispersal would increase the likelihood of a natural wolf recolonization of the northeastern U.S. A wolf population that establishes in Maine would be likely to expand into northern New Hampshire.

Population Management Status

New Hampshire Fish and Game biologists investigate credible wolf sightings, but have yet to confirm the presence of wolves in the state.

New Hampshire would constitute only a small portion of potential wolf range in the northeast, which would be expected to include areas of Maine, New Hampshire, Vermont, and New York. New Hampshire currently has no management plan that addresses the potential return of wolves to the state. Minnesota, Wisconsin, and Michigan are examples of states that have recently dealt with the issue of a naturally recovering wolf population. New Hampshire should look to these states for guidance in the preparation of a strategy for dealing with the potential return of wolves. A key component of this strategy would be to support public education that dispels myths about wolves and focuses on the actual benefits and problems of living with a wolf population. The strategy should also differentiate between short term and long-term management goals. In general, recovering wolf populations require protection in the short term, but expanding populations will need a more flexible management policy to address the inevitable increase in wolf/human conflicts, such as the killing of livestock or pets (Mech 1995). Minnesota has been successful with a strategy that allows for increased harvest in agricultural and suburban areas while maintaining protection in areas of core wolf habitat (Mech 1995).

Regulatory Protection (for explanations, see Appendix I)

● Federal Endangered Species Act

Quality of Habitat

Harrison and Chapin (1998) identify most of northern New Hampshire as suitable wolf habitat based on habitat parameters defined in 1.1.

Habitat Protection Status

Conserving and maintaining large, unfragmented blocks of forest habitat in northern NH should be priority.

Over the past 20 years several large blocks have been conserved in northern NH, but there are many larger ownerships with no protection and high potential for subdivision.

Habitat Management Status

The majority of land in northern New Hampshire is managed for forestry products. Forestry operations actually benefit wolves by creating more browse for deer and moose. Future development could fragment the landscape, which would restrict the movements of a potential wolf population (Carrol 2003).

Threats to this Species or Habitat in NH

Threat rankings were calculated by groups of taxonomic or habitat experts using a multistep process (details in Chapter 4). Each threat was ranked for these factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). These combined scores produced one overall threat score. Only threats that received a "medium" or "high" score have accompanying text in this profile. Threats that have a low spatial extent, are unlikely to occur in the next ten years, or there is uncertainty in the data will be ranked lower due to these factors.

There were no threats ranked high or medium.

List of Lower Ranking Threats:

Mortality related to incidental take from shooting and trapping

Habitat impacts from road fragmentation

Mortality from indirect human impacts

Climate change impacting important prey abundance (e.g. declining moose population due to winter ticks)

Actions to benefit this Species or Habitat in NH

Minimize road infrastructure in potential core habitat

Primary Threat Addressed: Habitat impacts from road fragmentation

Specific Threat (IUCN Threat Levels): Transportation & service corridors

Objective:

General Strategy:

Political Location: **Watershed Location:**

Provide education and outreach on proper identification and ways to minimize incidental capture, consider a more defined coyote season

Primary Threat Addressed: Mortality related to incidental take from shooting and trapping

Specific Threat (IUCN Threat Levels): Biological resource use

Objective:

General Strategy:

Political Location: **Watershed Location:**

Educate the public on ways to prevent impacts to live stock and/or implement an active compensation plan/program

Primary Threat Addressed: Mortality from indirect human impacts

Specific Threat (IUCN Threat Levels): Biological resource use

Objective:

General Strategy:

Political Location: **Watershed Location:**

Review and adjust deer and moose population goals to support wolf populations upon recolonization

Primary Threat Addressed: Climate change impacting important prey abundance (e.g. declining moose population due to winter ticks)

Specific Threat (IUCN Threat Levels): Climate change & severe weather

Objective:
NHFG should consider the impacts of predation on moose and deer in the big game planning efforts if/when wolves recolonize NH

General Strategy:

Political Location: **Watershed Location:**

References, Data Sources and Authors

Data Sources
Literature review and communications with New Hampshire Fish and Game biologists and US Fish and Wildlife Service.
Literature review and communication with New Hampshire Fish and Game biologists.

Data Quality
Still need clarity on species genetics and morphology determining eastern wolves as a distinct species. Abundance of information on potential habitat found in the Northeast.
More information is needed on the impacts of hunting and trapping along dispersal and movement corridors connecting core habitats.
The status of wolves in Quebec is based on hunter survey reports (Lariviere et al. 2000). The potential for natural recolonization of the northeast has been addressed by a number of authors (Harrison and Chapin 1998, Wydeven et al. 1998, Carrol 2003).

2015 Authors:
Jillian Kilborn, NHFG

2005 Authors:

Literature

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