

## ***Timber wolf***

### Status

Federal status: G4 N4 Endangered

NH state status: SX, Not listed

ME state status: SH, Not listed

By 1900, this species was extirpated from more than 95 percent of its historic range in the 48 lower states due to widespread persecution of wolves, including poisoning, trapping, and shooting. By 1973, only several hundred wolves likely existed in northeastern Minnesota and on Isle Royale, Michigan. Healthy wolf populations have remained in Alaska and most of Canada.

In 1973, the eastern timber wolf, *C. lupus lycaon*, was listed as endangered in Michigan and Minnesota. In 1978, the subspecies designation for the eastern timber wolf (and other subspecies of *C. lupus*) were eliminated from the Endangered Species Act (ESA), and the gray wolf was relisted at the broader species level, *C. lupus*, as endangered in the coterminous U.S. and Mexico, except for Minnesota where the species was listed as threatened.

Since the mid 1970s, populations of wolves in the U.S. have doubled in numbers and their range has almost tripled. Populations in Minnesota, Wisconsin and Michigan have been steadily increasing, and wolves have recently been dispersing into North and South Dakota from Minnesota. Timber wolves have been reintroduced in parts of Idaho, Montana, and Wyoming. Current numbers of wolves in the lower 48 U.S. states are estimated at 3,600. The global abundance of wolves is estimated to be over 10,000.

No occurrences of timber wolves have been documented in New Hampshire since the species was extirpated in the late 1800s. In Maine, two animals believed to be wolves were found during the 1990s. In 1993, a single female timber wolf was killed in northwestern Maine, and in 1996 a large wolf or wolf-like canid was trapped and killed in central Maine. There have been no additional confirmed occurrences of wolves in the Northeast.

For the species *Canis lupus*, the current range-wide viability outcome is D. Over the next 20 years, populations are predicted to continue to thrive in Alaska and Canada, and populations in the lower 48 states will be managed at their current levels. This leads to a probable range-wide viability outcome of C. For the northeast and WMNF, the current viability outcome is E. Over the next 20 years, if wolves were reintroduced, the viability outcome could change to C; without reintroduction the outcome is likely to remain at E.

### Distribution

The timber wolf was historically distributed throughout the northern hemisphere north of 20 degrees latitude. Deliberate extermination has restricted the range in North America and in the old world.

Currently, in the U.S. wolves occur in Alaska, northern Washington, Idaho, Montana, northeastern Minnesota, northern and central Wisconsin, the Upper Peninsula and Isle Royale in Michigan, and North and South Dakota. Three introduced, experimental

populations of wolves occur in parts of Wyoming, Idaho, Montana, Arizona, New Mexico, and Texas. Outside of the U.S., wolves are found in northern Mexico, throughout most of Canada, the former Soviet Union, Inner Mongolia, Yugoslavia, Poland, Spain, northwestern India, Iran, Afghanistan, India, and Romania.

The timber wolf is considered extirpated in the northeast U.S. No occurrences of wolves have been documented in New Hampshire since the late 1800s. In Maine, two animals believed to be wolves were found during the 1990s (see Status section).

The Recovery plan for the eastern timber wolf identified three potential areas for wolf reintroduction that should be further studied: 1) eastern Maine, 2) northwestern Maine and adjacent New Hampshire, and 3) the Adirondack area of New York. These areas were selected on the basis of low human population density, large blocks of public lands (except in Maine), and favorable input from the state. These areas did not include the WMNF. Legislation was passed in New Hampshire (HB 240) to ban reintroduction by the state.

### Habitat

The timber wolf has occupied most habitats and topography except deserts and high mountaintops. Which habitats are occupied by this species depends more on habitat available for their prey species (primarily deer, moose, and beaver), ungulate biomass, and low human density than any particular forest cover type or vegetation structure. Deer habitat is characterized by forest edges, swamp borders, areas interspersed with fields and woodland openings, dense cover for winter shelter, and adequate browse. Moose occur in second-growth boreal forests interspersed with semi-open brushy areas and swamps or lakes that have cover and aquatic plants for food. Beavers occupy slow-moving brooks, streams, and rivers that are usually bordered by young hardwoods.

Minimal human activity also influences use of habitat by wolves. Wolves in areas with a deer and/or moose prey base are likely to use core habitat with low road and human densities. Potential wolf habitat is probably contiguous throughout northern, western and eastern Maine, and extends well into northern New Hampshire. Densities of deer and moose on the WMNF are likely to be at the low end of deer densities for areas where viable wolf populations are currently found.

### Limiting Factors

Human-caused mortality is the primary threat to wolves throughout their range. A study of wolves in Algonquin Provincial Park, Ontario showed that a wolf population may persist in areas used for resource extraction and surrounded by human settlement and agriculture if three conditions are met: adequate prey, adequate protection, and adequate public support. Most human-caused mortality is intentional, but accidental trapping and collisions with automobiles also contribute to wolf mortality. In areas where livestock are more abundant than wild ungulates, increased wolf depredation on livestock can result in increased wolf mortality due to human persecution. Negative attitudes toward wolves may result in killing of migrating wolves, which could further impede recolonization of the northeastern U.S. On the other hand, positive attitudes towards natural recolonization have been associated with viable populations.

Adequate prey base is essential to wolves; low ungulate populations will limit wolf populations.

Disease also may limit wolves, although it is not clear what role it has in population dynamics. Mortality of wolves in the wild has been documented due to rabies, canine distemper, canine parvovirus (CPV), blastomycosis, tuberculosis, mange, and Lyme disease. CPV, mange, and Lyme disease are thought to influence population growth in wolves.

Dispersal capability is the primary limiting factor for wolves in the northeastern U.S. Potential corridors of core and dispersal habitat exist between southeastern Canada and suitable habitat in Maine and New Hampshire, and wolves are capable of dispersing this distance. However, wolves in southeastern Canada may have low dispersal rates and appear to be heavily exploited outside of reserves. Also hindering dispersal is the Saint Lawrence River, as its shipping lanes are not permitted to freeze over. Therefore physical and habitat barriers may preclude immigration of sufficient numbers to establish populations. Negative attitudes toward wolves may result in killing of migrating wolves, which could further impede recolonization of the northeastern U.S. Interbreeding of wolves with coyotes also may limit reestablishment of wolf populations in the northeast.

#### Viability concern

The timber wolf is a federally listed species and must be evaluated for viability. It is extirpated from the northeastern U.S., including the WMNF.

#### Management activities that might affect populations or viability

Currently, no WMNF management activities would affect wolves as they are extirpated from the northeast. Any future wolf population in the northeast would require: 1) wolves to disperse from Canada on their own; or 2) a reintroduction effort.

Management that would increase habitat for and populations of deer, moose, and beaver, such as clearcutting, would help ensure prey availability. Construction of roads or other develop in areas not currently used by many people could allow for more harassment and persecution if wolves were to return to the area.

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