



Species Introductions/Population Dynamics

Caribou Reintroduction in the Great Lakes

Woodland caribou were hunted off Isle Royale in the 1920s; the last known animal was shot by a hunter in 1925. Caribou are now absent from the entire U.S. side of the Great Lakes region and were listed as a Federally Endangered species in 1983. Caribou reintroductions have met with variable success in the Great Lakes region. The main causes for failures have been poachers, disease, and predation. The presence of white-tailed deer, as carriers of the parasitic disease "brainworm" precludes caribou reintroduction because like moose, caribou are highly susceptible to this pathogen. The presence of wolves and bear also precludes successful reintroduction since the populations of caribou are not high enough to withstand the predation. In areas where these stressors are absent, caribou reintroductions have been very successful. National Park policy dictates that animals which were clearly removed from Parks by the actions of man should be reintroduced to the landscape whenever feasible.



The reintroduced caribou populations which occurred in the mid 1980s in Ontario were acquired from the Slate Islands. Caribou introductions in areas without wolf and white-tailed deer have been very successful (Long 2003, Bergerud & Mercer 1989)

Lynx Reintroduction potential

Canada Lynx were killed off of Isle Royale just prior to it becoming a National Park through the direct actions of human trappers overharvesting lynx from the island. Since that time lynx numbers have plummeted across the United States. They were named a U.S. Federally threatened species in 2000 and an Endangered species in the State of Michigan in 1989. Reintroductions have been undertaken in several locations in the United States with varying levels of success. Poaching and vehicle traffic were the most serious difficulties encountered in most reintroductions of Canada lynx. Since Isle Royale has neither of these stressors, lynx reintroduction would be expected to be very successful. Historically, Isle Royale supported resident populations of lynx estimated at 40-65 animals.

Wolf Introduction Project

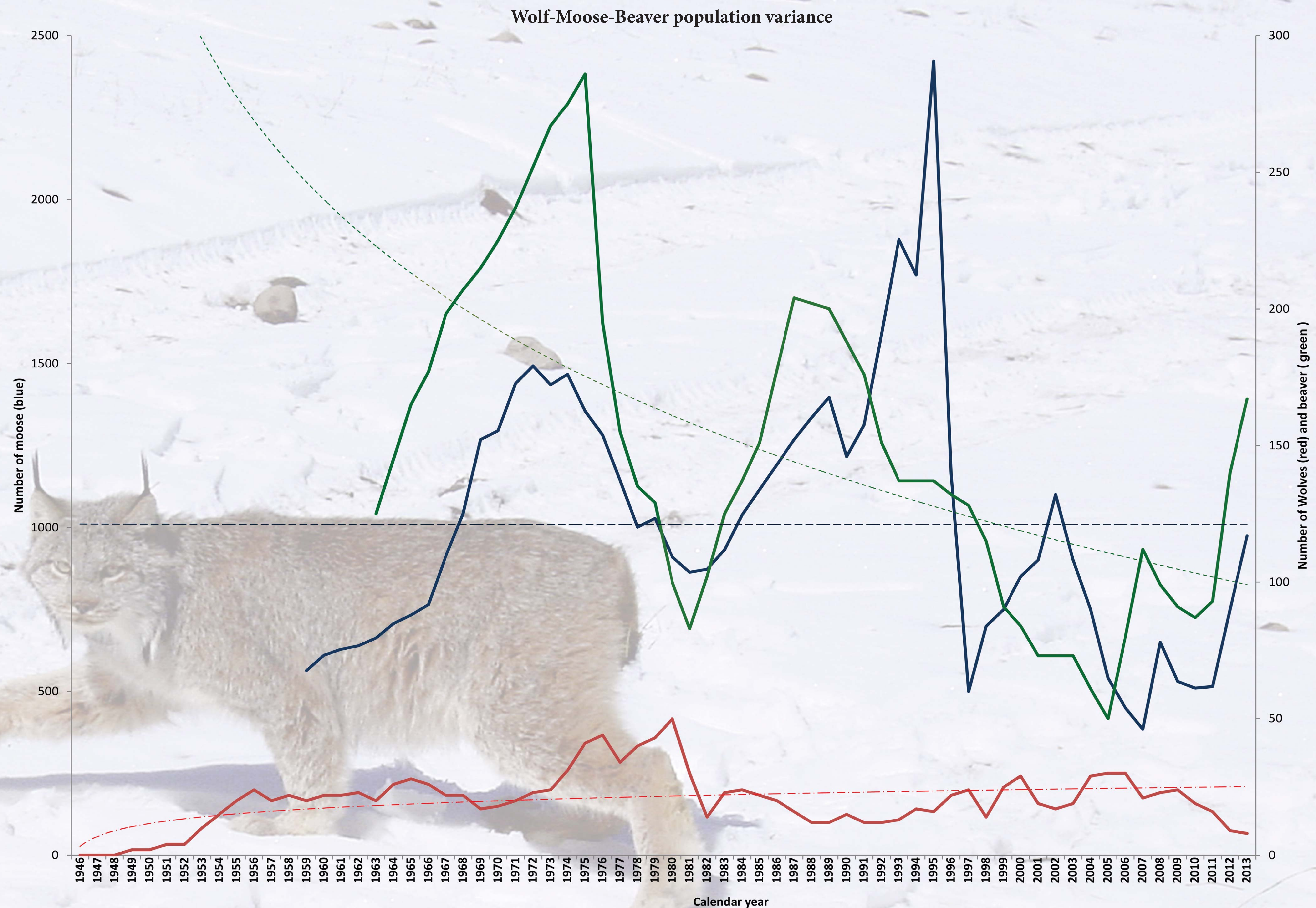


Photographs of "Big Jim", a wolf born and hand-raised at the Detroit Zoo by Lee Smits that was subsequently released with three other zoo wolves on Isle Royale in 1952. Jim was one of the wolves known to survive and assimilate onto the island. Photos by Lee Smits

In the 1940s and 50s wolves across North America were being persecuted as vermin. Their numbers dwindled and few areas, if any, in the United States had healthy wolf populations. Then in 1949 one or two wolves made it to Isle Royale. Just after this a proposal to make Isle Royale a refuge for wolves surfaced at the same time that the Detroit Zoo wanted to "trade" several surplus zoo-born wolves for more moose from Isle Royale. The logistics of getting moose from the island did not work out, but four fully vaccinated wolves from the zoo were sent to Isle Royale in 1952. The zoo wolves had been sired by a male from Michigan and a female from northwest Canada (likely the Yukon). Negative interactions between the wolves and Isle Royale residents happened quickly. The zoo wolves had been hand-raised by humans and were more "dog-like" than wild. The "tame" wolves created enough conflicts that it was decided to remove the animals. One of the female wolves was captured and returned to the Detroit Zoo. One male was shot and killed. The remaining two wolves were shot at (but not hit). These wolves were occasionally seen and presumably reverted to a "wild-state" and augmented the population.



"Big Jim" with Mrs. Smits just prior to being shipped to and released on Isle Royale. Photo by Lee Smits



Graph depicting the populations of wolf (red line), moose (blue line) and beaver (green line) at Isle Royale since monitoring began. Beaver seem to be in a steady state of decline, while wolf and moose are variable, but relatively stable. Dashed lines show logarithmic trends over time.

Michigan wolf timeline

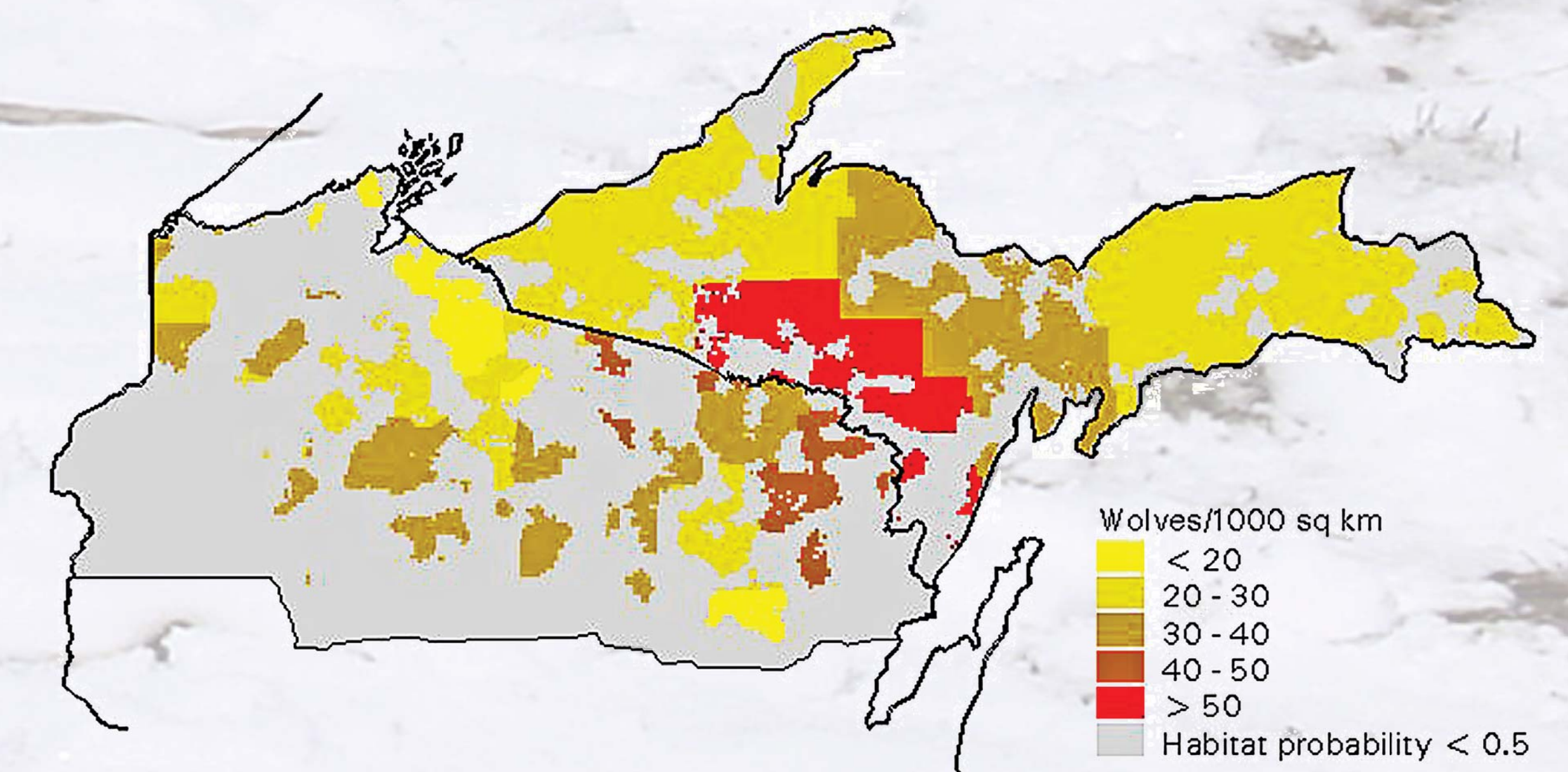
- 1840- extirpated from southern lower peninsula
- 1935- extirpated from lower peninsula
- 1949- wolves appear on Isle Royale
- 1952- wolves stocked on Isle Royale from Detroit Zoo
- 1955- last known wild breeding in mainland MI (at what is now Pictured Rocks National Lakeshore)
- 1960- National wolf bounty repealed
- 1965- became a state protected species
- 1973- Federal Endangered Species listing, thought to be 6 animals in the upper peninsula
- 1974- 4 wolves translocated from MN, all poached
- 1980s- emigration from MN, WI, ON
- 1990- documented wild breeding (2 pups born in UP)
- 1992- 21 wolves in upper peninsula
- 2012- wolves removed from Federal and State protection

Current Great Lakes wolf population

- MN = 2,921
- MI = 687 (700-950 capacity)
- Isle Royale = 10
- WI = 782
- ON = 8,800+

Wolf-Moose-Beaver population variance

The wolf population at Isle Royale, like many mammal populations has fluctuated over time from the low of 1-2 wolves (when they first arrived) to a peak at 50 animals in 1980. When the island wolves hit this peak they had the highest density of any population in North America (102 wolves/ 1000km²). The following year saw rapid declines in the population due to interspecific fighting and starvation. Disease was also possibly introduced at this time. The wolf population average on the island is 22 individuals (which is still a high density, 41/1000km²). The most common cause of death for Isle Royale wolves is other wolves. The moose population is the primary prey for wolves on Isle Royale. Even though wolves kill moose for their food, they do not make a large impact on regulation of the size of the total moose herd. Wolves positively affect moose health by culling sick, wounded, and old animals from the population. The population of moose has grown from just a few animals to a peak of several thousand. The long-term average is around 1000 moose. Beaver populations on Isle Royale have been in general decline for several decades. A secondary prey source for wolves, beaver are thought to be declining due more to habitat changes than predation. Beaver were heavily trapped from the island in historic times and generally number several hundred individuals.



Wolf density in Wisconsin and Michigan's upper peninsula. In 1980 wolf density on Isle Royale was at 102/ 1000km², double what is considered very high density.