

Department of Natural Resources

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Wolf Population Management Project

The gray wolf has returned to its former range in the Upper Peninsula of Michigan (UP). Since 1989, the Department has monitored wolf population growth and range expansion. As Michigan's wolf population size increased and exceeded levels that required Federal and State agencies to protect the wolves under endangered species statutes, wildlife managers increasingly found themselves responding to wolf-related conflicts. This change in focus prompted the Department to update the state's wolf management plan (MDNR 2008).

As the wolf population increased, the Department developed a program of research to aid in monitoring their recovery and management. An important component of this work has been the capture and tagging of wolves with radio collars to determine their survival, cause-specific mortality, distribution, movements, and pack and territory size. Over 400 wolves have been captured and radio-collared to provide this important information.

The information collected continues to be critical to our population surveys. Perhaps the most important information that allows us to interpret our winter tracks surveys is the movement data and estimates of wolf territory locations determined from the radio-collared wolves. Most recently, the Department has used information from radio-collared wolves in the development of recommendations for a 2013 wolf harvest season as a tool to help manage wolf-human conflicts. In delineating the wolf hunt units, we attempted to include the territories of wolf packs known to have caused conflicts and exclude territories of packs that had no history of conflict. Our knowledge of wolf pack territories comes from our population survey work and the movements of radio-collared wolves that we monitor (e.g., Potvin et al. 2005, Beyer et al. 2009).

In FY 2013, we conducted a population survey and estimated there were at least 658 wolves in the UP. This estimate was slightly below the estimate of 687 in 2011 (note: a wolf survey was not conducted in 2012) although the confidence limits of the survey estimates overlap indicating that statistically we cannot conclude the population declined.

To date, we have captured 406 wolves and fitted most of these animals with a radio-collar. In FY 2013, we captured 22 wolves. During this fiscal year, we monitored 47 individual collared wolves and collected 1,156 locations of these animals from the air. In addition, we investigated mortalities of 12-collared wolves. Seven of the 12 wolves were illegally shot, 2 were killed by vehicles, 1 died from exposure due to mange, and 1 died from an unknown cause.

Decision-makers will request predictions on the effect of various harvest scenarios on Michigan's wolf population. Biologists can use a population modeling approach to

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develop these predictions. However, population modeling requires inputs of wolf population vital rates. Important inputs needed include estimates of survival rate, mortality factors, and dispersal dynamics. Biologists commonly estimate these rates and factors by monitoring the fates of radio-collared individuals. In Michigan, over 350 wolves were radio-collared and monitored from 1992-2010. These data are more than adequate for developing estimates of survival rate, determining mortality factors, and estimating dispersal. In addition, biologists need to understand causes of mortality and dispersal dynamics in order to consider their relative effects and determine which factors management might be able to manipulate to cause desired changes in wolf populations. In FY 2014, we are initiating a study of wolf dispersal and survival rates and cause-specific mortality using the information we have collected on radio-collared wolves since 1992.