Department of Natural Resources
SCI-MIC Supported Research Projects
2013 Progress Reports

Snowshoe Hare Distribution and Abundance Project

In winter 2013, we sampled 134 sites throughout the Upper and northern Lower Peninsulas of Michigan. Sites were selected from personal interviews of hare hunters and MDNR biologists, and were known to be occupied by hares within the past 60 years. Each site was sampled, 12-72 hours after a snowfall event to allow track accumulation, for hare occurrence, abundance, and vegetation. Sample sites were distributed throughout Michigan, with a particular emphasis on the southern edge of hare distribution. We also recorded presence or absence of mesocarnivores (i.e., fox, bobcat, and coyote) at each site.

Historical climate data was compiled for each study site ranging from that site's year of last known hare occupancy to 2012. Compiling existing vegetation data to portray land use change is currently underway and expected to be completed early in FY14. Historical aerial photographs are being inspected to digitize vegetation boundaries around sample sites.

Snowshoe hare occupancy models were created using available climate data and results were presented at the 2013 Wildlife Society Conference in Milwaukee, WI. Results indicate that the most influential climate variables include the mean maximum temperature from May 15-January 19, the total number of days with measurable snow on the ground during winter, and the mean snow depth throughout winter. These results suggest that snowshoe hares are likely more susceptible to predation when in winter pelage against a background lacking in snow cover. This model structure will incorporate land use data to develop final occupancy models.