Minnesota Loon Monitoring Program - 2013

NONGAME WILDLIFE PROGRAM
MINNESOTA DEPT. OF NATURAL RESOURCES

The Minnesota Loon Monitoring Program (MLMP) was implemented in 1994 to detect changes in Minnesota's loon population and in the health of their lake habitats in Minnesota. With the help of over 1000 volunteers, the DNR's Nongame Wildlife Program has completed loon surveys in six 100-lake "Index Areas" annually since 1994. The Index Areas (Fig. 1) were chosen to represent different factors which may affect loons and their habitat throughout their breeding range within the state, including: human population growth, acid rain sensitivity, densities of humans and roads, and predominantly public or private land ownership.

After twenty years of data collection, MLMP results indicate that Minnesota's loon population remains stable. An average of 66% of the lakes within the Index Areas have had loons present during this twenty-year period.

Methods

Our MLMP volunteers are assigned to survey a lake (or multiple lakes) during the morning hours (between 5 a.m. and 12 p.m.) of one day within a 10-day period in July (in 2013 , this period was from June 28th to July 8th). Only lakes that are over 10 acres in size and deep enough to overwinter fish were surveyed within each Index Area. Depending on the size of the lake, the survey styles vary widely, with some volunteers using boats or canoes, and others surveying from the shore. Similarly, some use binoculars or spotting scopes, and others don't. Nongame Wildlife Program staff standardize these various methods by providing survey guidelines to all volunteers.

In addition to the numbers of loons observed, volunteers are asked to report on factors such as weather and shoreline conditions. Once the survey is completed, data forms are returned to the Nongame Wildlife Program for compilation and analysis.

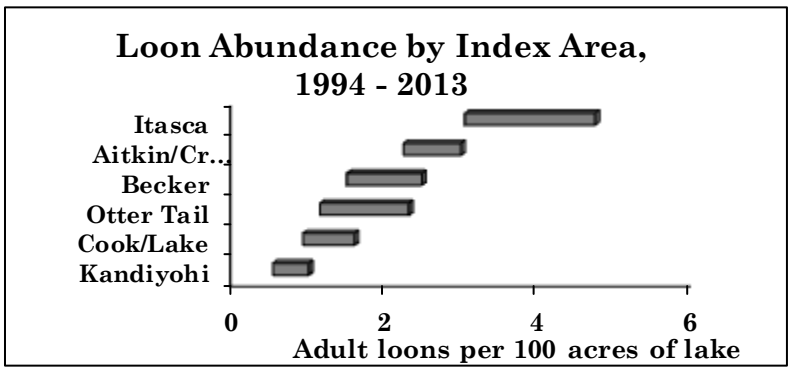


Figure 2. Loon Abundance between 1994-2013 within each of the six MLMP Index Areas.

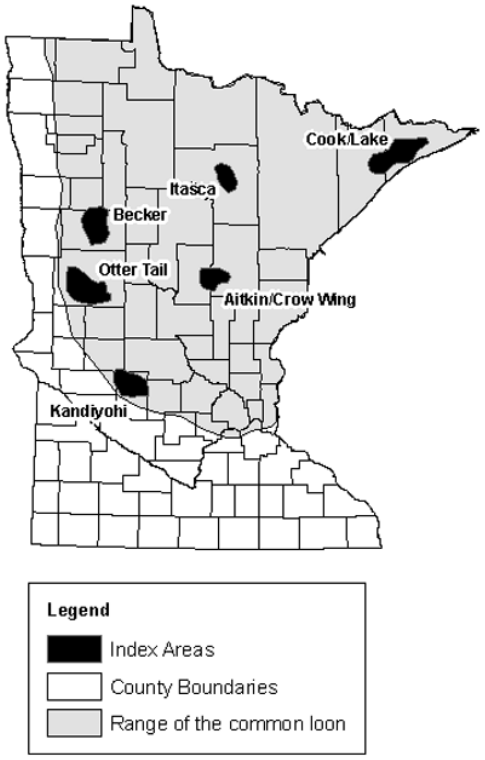
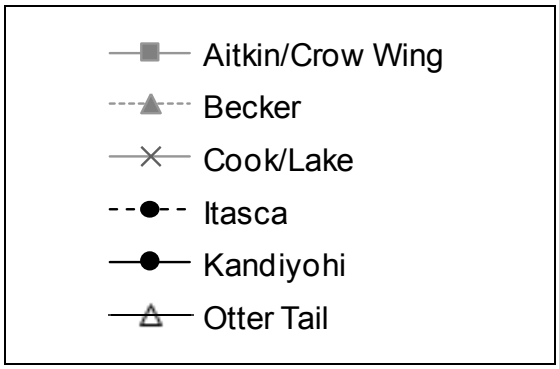


Figure 1. The six MLMP Index Areas.

2013 Results

Reports of adult loons in the 2013 survey are consistent with past years of the MLMP. The number of adults observed per 100 acres of lake has remained stable between 1994-2013 for four of the six Index Areas; an increase was detected in the number of adult loons observed per 100 acres in the Otter Tail Index Area and a marginal decrease was detected in the Becker Index Area over this time period (Fig. 3). The percent of lakes occupied by loons has remained stable or increased in all six areas (Fig. 4). While the average number of juvenile loons reported per pair of adults is highly variable from year to year, juvenile reports have remained stable in four of the six areas (Fig. 5). Juvenile reports significantly declined in the Becker and Itasca Index Areas, although low counts in 2013 were likely driven by the late ice-out that delayed nesting and caused some loons to still be incubating eggs during the survey period. The abundance of loons varies widely across the state, and continues to be lowest in the southwest (Kandiyohi), and highest in the northcentral (Itasca) Index Area (Fig. 2).

Legend for Figures 3-5.



In Summary

Overall, loon populations within our six Index Areas have remained relatively stable for the past twenty years. This is good news for Minnesotans, who recognize and enjoy our state bird as an integral part of our lake ecosystems. The DNR's Nongame Wildlife Program will continue monitoring loons through the MLMP as Minnesota's human population and lake shore development continue to grow.

Acknowledgements....

THANK YOU MLMP VOLUNTEERS!!!

We extend our heartfelt thanks to the hundreds of volunteer observers who continue to make the MLMP a success. Without your persistence and hard work, the DNR would be without a means of tracking the health of our state bird. We and Minnesota's loons appreciate your commitment!

The MLMP is supported with donations to the Nongame Wildlife Checkoff on Minnesota's tax forms. DONATE AT TAX TIME, OR DONATE ONLINE AT:

http://www.dnr.state.mn.us/eco/nongame/checkoff.html

For more information, or if you are interested in participating in the MLMP, please visit:
http://www.dnr.state.mn.us/eco/nongame/projects/mlmp_state.html

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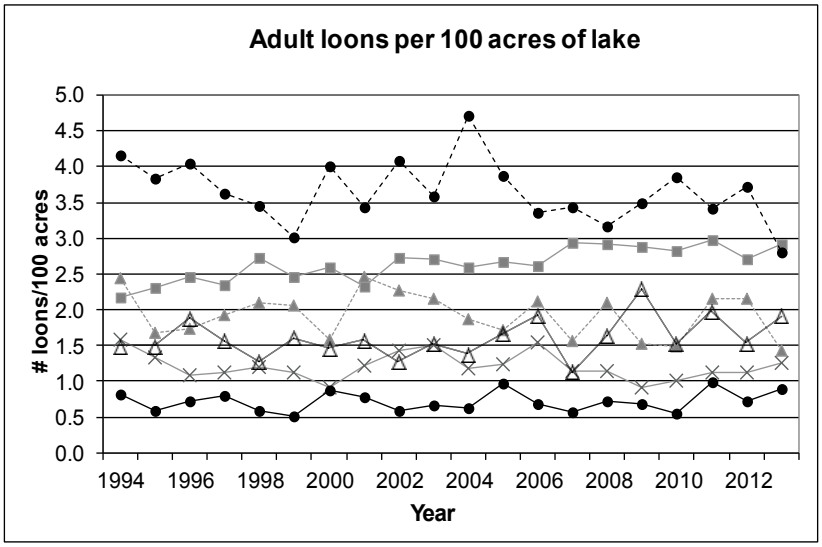

Figure 3. LOON ABUNDANCE: Number of adult loons observed per 100 acres of lake within each index area. The Otter Tail Index Area shows a statistically significant increase and the Becker Index Area shows a marginal but statistically significant decrease in loon abundance between 1994-2013. The other index areas exhibit no significant changes in loon abundance over the twenty years of the MLMP.

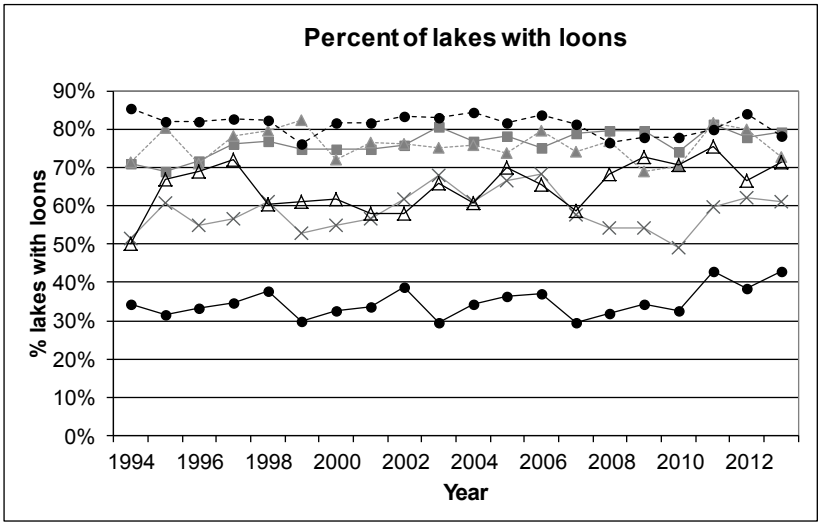

Figure 4. LOON OCCUPANCY: Percent of lakes with loons. There has been a marginal increase in loon occupancy rates in the Otter Tail Index Area between 1994-2013, and no statistically significant changes within the other five areas.

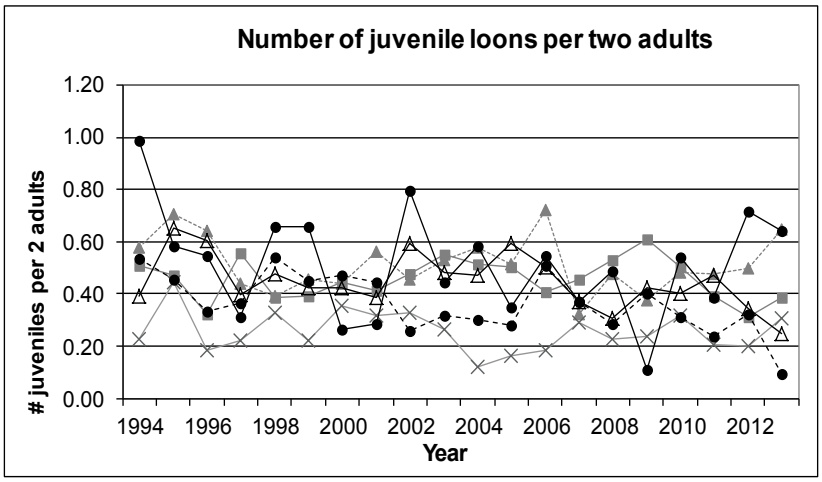

Figure 5. LOON REPRODUCTIVE SUCCESS: Number of juvenile loons per two adults. The Becker and Itasca Index Areas show statistically significant declines in reproductive success between 1994-2013 whereas the other index areas exhibit no significant changes. The two declining trends were likely a result of the late ice-out in 2013 that delayed nesting dates and may have caused the observed record low juvenile counts. Due to the difficulty of observing juvenile loons, reports are highly variable from year to year within each of the Index Areas, although they are relatively consistent across Index Areas.