

2015 Northern Saw-whet Owl Migration Research & Public Education Program at Carpenter Nature Center

In 2014 Carpenter Nature Center(CNC) undertook an experimental season of Northern Saw-whet Owl (*Aegolius acadicus*) monitoring to determine if it was feasible to set up a long-term monitoring site, as per guidelines set out in Project Owl-net. Project Owl-net is the international Northern Saw-whet Owl Monitoring Program comprising more than 120 owl banding stations across the United States and Canada. Requirements include a five-year commitment to monitoring Saw-whet Owl migration. Carpenter Nature Center's primary research question in 2014: *"Do Saw-whet Owls utilize the St. Croix River corridor, specifically Carpenter Nature Center's Minnesota Campus, during fall migration?"*



Northern Saw-whet Owl (*Aegolius acadicus*)

Carpenter Nature Center's preliminary season met with immediate success with 26 new Saw-whet Owls banded and two foreign re-encounters, including one hatch year female originally banded in Prince Albert, Saskatchewan and a second owl banded in Duluth at Hawk Ridge Bird Observatory.

In January 2015 Carpenter Nature Center was awarded a Savaloja Grant from the Minnesota Ornithologists' Union to support the establishment of a Project Owl-Net owl migration monitoring site at Carpenter Nature Center. The primary goal of this project is to document the seasonal movements and population fluctuations of Northern Saw-whet Owls in the St. Croix Valley, specifically near the river's confluence with the Mississippi River. Much is unknown about the movements of this small, secretive owl. Through increased understanding of the migratory patterns and population cycles of Northern Saw-whet Owls we can help prioritize future conservation actions.



Photo by Wendy Hill



Photo by Halizhan Zheng



Photo by Wendy Hill

During banding data is collected on age, sex, wing chord, eye color, alula markings, fat, molt and keel before release.

The secondary goal of this project was to create public education opportunities, including the development of program materials and bird safety protocols for public owl banding programs.

A third component of the project was to determine whether Long-eared Owls (*Asio otus*) migrate through the river corridor. Similar to Saw-whet Owls, Long-eared Owl population trends are relatively unknown. Few species are so widespread, yet so unlikely to be encountered. Long-eared Owls alternate between dense woodlands and grasslands or prairie marshes and are vulnerable to loss of riparian woodlands. The funding from the grant was used to purchase Saw-whet and Long-eared Owl nets and develop program content. Additional in-kind donations, (audio lure, etc.) were secured in order for this project to be successful.

Preliminary Research Results:

As is typical in research, the first season yielded more questions than answers. Saw-whet Owl populations are hypothesized to be cyclical, with four-years between peak years and low years. The 2015 season did not conform to either a peak or a low year. Throughout North America stations yielded mixed results with many reporting peak numbers, while nearby stations experienced low years. Across the continent researchers found that Saw-whet Owl migration was two weeks later than typical years, potentially due to warmer-than-normal weather patterns.



A youngster photographs an owl during banding.

At the local level, there was a vast difference between the number of Saw-whet Owls encountered in the southeast metro, compared with a station in the west metro. In 2014 the stations tracked closely, with Carpenter Nature Center's nets holding more owls some nights and the west metro's nets holding more owls other nights. In 2015 Carpenter Nature Center's migration total was 51 owls, while the west metro station encountered more than 100 owls during the same time period. Twin Cities Saw-whet Owl migration totals and capture rates are traditionally far lower than those in Tofta, Duluth and St. Cloud. Of note is that in our preliminary analysis the peak owl migration nights in the southeast metro appear to lag behind the west metro by one week. CNC staff also expanded owl monitoring to CNC's Wisconsin Campus, five miles south of Hudson. The season yielded multiple successful nights. Future research will involve comparative analysis of migration timing and density between the western and eastern bluffs of the St. Croix River.



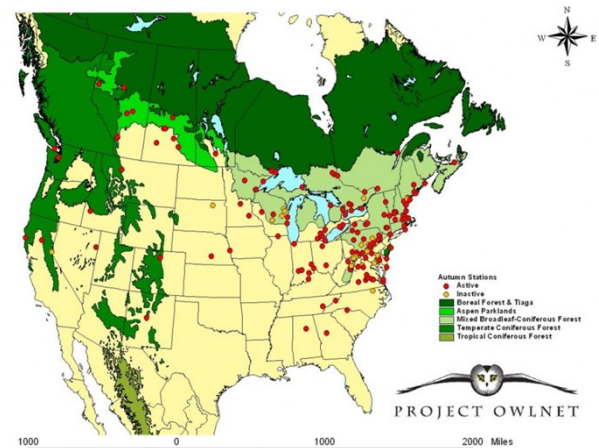
A bander blows on an owl to expose migratory fat

Photo by Haizhan Zheng

Long-eared Owl (LEOW) monitoring efforts yielded zero owls. During the non-monitoring season the project will be refined and researchers will be changing auditory lure calls. The timing of LEOW migration may also vary. At

some owl research stations Long-eared Owl migration peaks occur near the end of Northern Saw-whet Owl migration, while at other stations the owl movements are concurrent.

There is still much analysis to be done on CNC's data, including analyzing the temporal age distribution of birds banded, peak weather migration conditions, median migration date, and temporal differences in male-female migration dates. There is also a question of the impacts of the widespread 2015 boreal forest fires on the breeding owls and percentage of hatch year birds observed during migration. There is some indication that southern NSWOW populations are more nomadic than northern populations. Further research may provide a greater indicator of the sources of owls migrating through the St. Croix River corridor. In 2015 Carpenter Nature Center encountered five foreign banded birds, and are awaiting banding data on these birds.



Project Owl-net monitoring station map

Public Education Results:

Carpenter Nature Center's Project included a public education component. The staff developed program content and safety protocols for a Owl Banding Public Program. This preparation included training six assistant owl banding volunteers. Jennifer Vieth holds the Master Station Banding Permit. She is assisted by two sub-permittees, Wendy Langley and Marilyn Kinsey, as well as long-time bird bander Jim Fitzpatrick. The support team includes Pete Nichols, Wendy Hill, Larry Sirvio and Shelley Bowman.



Photo by Haizhan Zheng



Photo by Haizhan Zheng

A naturalist lifts the feathers to expose the owl's ear for the public.

Nature Center also acquired a mounted Saw-whet Owl so that attendees will observe the features of a Saw-whet Owl, even if the banding proves to be unfruitful. The public response to the program was tremendous. One college student remarked "*I took biology and science in school, but it was never this interesting.*"

The program was limited to 15 participants for optimal owl safety. The content included basic owl biology, Minnesota owl species information, history and science of bird banding, and Northern Saw-whet Owl natural history. Participants also learned about the specifics of aging and sexing Saw-Whet Owls and current Saw-whet Owl research. Throughout the program bird conservation and habitat conservation were featured. An extra highlight was the opportunity to meet the nature center's live Great Horned Owl. The weather cooperated for catching owls and participants watched the banding of one Saw-whet Owl. The program had a waiting list. The schedule for 2016 is currently being established and three public programs are planned for next year's migration season. Carpenter



Photo by Haizhan Zheng



Photo by Haizhan Zheng

Marilyn Kinsey bands the Saw-whet Owl with help from Jen Vieth, while Pete Nichols records the data. Seventeen people attended the public owl banding program.