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## *Loons Could Be Declining In Northern Wis.*

Officials are asking: Could it be the fish?

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Milwaukee Journal Sentinel USA TODAY NETWORK – WISCONSIN

Could loons be vanishing from Wisconsin?

A researcher who has studied these aquatic birds on 120 lakes in northern Wisconsin for more than 25 years has found disturbing trends that could signal the bird's eventual disappearance from the state.

Walter Piper, a professor of biology at Chapman University in California, has been closely monitoring the loon's status in Oneida County since 1993.

He is finding that adult loons are producing fewer young. Chicks are smaller at a key period in their early development. And young adults are migrating back in fewer numbers than earlier periods of his research.

He's not sure exactly why. But he thinks it has something to do with the high rates of loss of life among chicks and the adequacy of food in the chick rearing stage. In short, Piper believes that the common loon, a symbol of the north, is in trouble.

"A lot of us are scratching our heads right now and trying to make sense of this, and asking ourselves what can we do to try to turn things around?" he said.

His findings, which are being submitted to the scientific journal, *Ecology*, are different from other recent assessments of the loon population.

The federal North American Breeding Bird Survey and Wisconsin Breeding Bird Atlas, both based on observations from volunteers, indicate that the population is stable. "It's hard to say," said Nicholas Anich, a conservation biologist with the state Department of Natural Resources and coordinator for the Wisconsin Breeding Bird Atlas.

"But the other data sources do not suggest that we are in a significant decline at this point. Whether he is on the front edge of finding something, or if something local is going on in that area, that could very well be."

The Wisconsin bird count includes data from the Loon Watch program at Northland College in Ashland, a survey made possible with 200 volunteers who scoured 204 lakes in seven counties on its last count on July 18, 2015.

Northland's Wisconsin Loon Population Survey is the longest-running and only statewide survey dedicated to the species. Loon Watch estimated the population at 4,350 adult loons — an increase of 9.1% from the last survey in 2010.

The chick population was 834. It rose nearly 38% from 2010.

The next Loon Watch survey is scheduled this summer, on July 18.

But Piper doesn't believe his research is at odds

with these counts.

Loon Watch is a one-time measure taken every five years. It's casting a wide net.

By contrast, Piper's Loonproject.org is using a veritable pea shooter.

He is paying special attention to juveniles and so-called "floaters," young adults with no established territory, and he's focusing on health and survivorship and the implications for the entire population.

And because loons live a long time — adults are known to live up to 25 years in the wild — it takes time for a decline in breeding success to reach the adult population.

Piper spends six to seven weeks in Wisconsin every summer. His team is in the field from early May to about Aug. 10. The team generally consists of a half dozen people including undergraduate and graduate students. He currently has two postdoctoral researchers working with him.

The team monitors nesting, territorial and chick-raising behavior and weighs and bands chicks and adults. Using funding, principally from the National Science Foundation, the project has accumulated a trove of information on age, physical health and survival over time.

The loons that Piper is following indicate that the adult population is declining about 5% a year, and he is looking at how the drop correlates with juveniles that migrate back to northern Wisconsin.

"When we look at the chicks that we banded and are coming back, it used to be, 15, 20 years ago, that we'd see about half," Piper said. "Now we are seeing about one-sixth of them.

"That is the single most alarming thing."

He is especially concerned about the health of the birds in their chick stage.

- From 1993 to 2019, the incidence of chicks reaching 5 weeks has fallen 1.1% annually. That is normally when a baby loon can find food for itself.

- In 2019, 5-week-old chicks weighed 10.5% less than those in 1993.

- There are also fewer two-chick broods, another problem sign.

- From 1993 to 1998, 53% of broods were single-chick broods. From 2014 to 2019, it jumped to 73%.

### **The threats to loons**

Scientists have studied an array of threats for loons, including mercury contamination. As emissions from coal settle on water, it converts mercury to its more toxic form, methyl mercury, which builds up in the tissue of fish, which loons consume.

Another is type E botulism, a neurotoxin that affects fish-eating birds. It's produced in water with low oxygen levels.

There are other factors like predation, or harm during their migration from the south. Climate change could also pose peril.

In 2015, scientists affiliated

with the National Audubon Society took data from the North American Breeding Bird Survey and Audubon Christmas Bird Count and used modeling to understand how habitat ranges could shift for many North American bird species. Warmer temperatures could push loons out of northern Wisconsin in the decades ahead, they found.

But Piper is focused on the vulnerability of loons as chicks and the possibility that there are inadequate supplies of small fish in the lakes where they are nesting.

“It almost has to be,” he said. “It may be entirely a Wisconsin problem, or there may be other contributing factors.”

Michael Meyer, a retired DNR research scientist and wildlife toxicologist who studied loons for more than two decades, said Piper is a “careful scientist, not prone to making alarmist statements.”

“I believe he is representing the data properly at the lakes he is looking at.”

Meyer, however, is skeptical of whether food availability is the cause.

Meyer thinks a more likely answer are the predators circling overhead.

“The density of bald eagles in the Oneida County area,” said Meyer, noting the eagle population continues to be growing.

The Loon Watch survey this summer could be telling, according to Meyer.

“All of a sudden, if we see a dip in the number of chicks produced statewide, it would be supportive of the fact that something might be happening at a broader level,” he said.