

# Icon threatened

NEW STUDY FINDS BALD EAGLES HAVE HIGH LEVELS OF MERCURY

**T**he bald eagle, symbol of majesty and freedom, may be in trouble again. It was only taken off the endangered species list in New York two years ago. Mercury concentrations in adult and juvenile bald eagles in the Catskills are elevated to potentially harmful levels, according to a recent report prepared by the BioDiversity Research Institute of Gorham, Maine and the New York State Department of Environmental Conservation. The report found that one in four bald-eagle chicks in the Catskills had accumulated levels of mercury in their bodies from the fish they ate, and that one in three adults had accumulated mercury over their lifetimes to levels known to have negative effects on other birds.

These findings are consistent with previous research showing the Catskills as a mercury "hot spot" located downwind from mercury-producing plants

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in Ohio. The elevated areas of the Catskills and Shawangunks receive some of the highest rates of atmospheric deposition of mercury in the nation.

Mercury becomes an air pollutant largely through releases from coal-fired power plants, solid-waste incinerators and various other smokestack industries. Airborne mercury eventually returns to earth in rain, snow and fog droplets as well as in dry form. Under certain conditions, mercury is then transformed into methyl-mercury, which becomes magnified toward the top of the food web. Its toxic effects can include both neurological and reproductive harm to wildlife, and to people who consume contaminated wildlife.



PHOTO COURTESY OF CREATIVE COMMONS

*High levels of mercury have been discovered in bald eagles within New York State's Catskill region.*

"The average mercury level for eagle chicks in the Catskills region – and especially those near the boundary of the Catskill Park – was comparable to levels found in regions associated with significant mercury pollution histories," reports Chris DeSorbo, lead investigator of the study and Director of BRI's raptor program.

In the early 1970s, breeding bald eagles had nearly vanished from New York State and surrounding regions due to the combined impacts of DDT, habitat loss and direct killing. Legal protections for eagles and their habitats, and the 1972 ban on DDT eventually led to widespread population recoveries throughout much of the continental United States. Bald-eagle populations have made a strong comeback in New York, following intensive restoration efforts led by Peter Nye, leader of the DEC endangered species unit.

"There had already been a huge amount of scientific research done in the Catskills and the Shawangunks which concluded high mercury levels in fish, birds, bats and other species," said Dr. David Braun, director of conservation science for The Nature Conservancy's eastern New York chapter, which helped secure a grant to fund the study of the bald eagles. "So we were aware there was a problem. Bald eagles are an important part of the ecosystem and are large consumers of fish ... and we believed that there was a chance that the bald eagles could have levels of mercury that could be dangerously high."

To that end, The Nature Conservancy worked with BRI and the DEC to test the eagles, quite a delicate process. "First, you have to know where the nests are, know when they have fledglings, and then approach

the nests to get blood samples of the fledglings and samples from the adults feathers," said Braun.

Both humans and animals have trace amounts of mercury. "The question is whether the level of mercury is high enough to cause damage," said Braun, "and we all know what type of neurological, reproductive nightmares mercury poisoning can cause in both humans and animals."

Braun cites a base line for a dangerous level of mercury at one part per million. The BRI-DEC study found that a significant number of bald eagles in the Catskills had mercury levels at or exceeding one part per million.

"The good news," said DeSorbo of the BRI, "is that no eagle chicks sampled in New York outside of the Catskills region had mercury levels of concern."

How bald eagles are affected by high mercury levels needs to be studied. "In the case of the common loon, there are definite signs of neurological impacts," said Braun. "We now need to secure funding to research how these elevated mercury levels are impacting the bald eagles. Their reproduction appears to not be as good as it could be .... Remember, New York State has done a wonderful job in its efforts to increase the bald-eagle population. This was not always the case. The population was dangerously close to extinction, and they are beautiful, iconic birds. No one wants to see any backsliding in their success."

No one wants to see industrial facilities shut down, either, Braun said. "They're part of the fabric of our economy, but there could be ways to ensure that their emissions are cleaner and safer for our ecosystems."

– Erin Quinn