

Study of Songbirds Finds High Levels of Mercury

ANTHONY DePALMA. New York Times. (Late Edition (east Coast)). New York, N.Y.:Jul 25, 2006. p. B.1

Abstract (Summary)

Dr. [David C. Evers] is one of the first scientists to test for wildlife mercury contamination beyond fish. He began his work in this area in 1998 and found that common loons, which eat fish, had highly elevated levels of mercury that made them lethargic and caused their reproductive rates to drop.

Much of the mercury that is causing problems in New York comes from coal-burning power plants, including those in Ohio and other states in the Midwest. Smokestack emissions from those plants tend to drift eastward. The airborne mercury eventually falls to earth, settling in lakes and streams where it is transformed into methyl mercury, which is toxic.

Dr. Evers's work suggests that when mercury falls on land, it is absorbed by soil and by fallen leaves that are consumed by worms and insects. Songbirds then feed on the bugs, absorbing the mercury.

Full Text (990 words)

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A biologist studying wild songbirds in New York State has found that all 178 woodland birds he tested last year had unusually high levels of mercury in their blood and feathers, a sign that the toxic chemical has spread farther in the environment than previously thought.

The biologist, David C. Evers, who is also executive director of the Biodiversity Research Institute, a nonprofit ecological organization in Gorham, Me., said that his preliminary findings challenged existing perceptions about how far mercury travels, how it interacts with the environment and how it affects various forms of wildlife -- all with worrisome implications for people.

While mercury has often been found in lakes and streams and in fish, Dr. Evers's work documents the unexpected presence of the chemical in birds that do not live on water and never eat fish.

"Impacts on biological diversity usually show impacts on human health," Dr. Evers said in a telephone interview. "If these birds are having trouble, that

should be a very good indicator of a risk to our own well-being and health as well."

Catherine H. Bowes, Northeast mercury program manager for the National Wildlife Federation, called the results of the songbird study "eye opening" and said they helped expand understanding of mercury contamination.

"It makes a compelling case for reducing mercury pollution from local sources, as New York is doing," Ms. Bowes said.

In May, Gov. George E. Pataki proposed cutting mercury emissions from New York power plants in half by 2010, setting standards that would be substantially more stringent than new federal regulations on mercury. State environmental officials are drawing up regulations, and then will take public comments before adopting them.

The National Wildlife Federation will include Dr. Evers's study in a national report later this summer. The study will also be formally presented at an international conference on mercury pollution scheduled for Madison, Wis., next month.

The songbird study provides a broader assessment of the mercury hazard in wooded areas of New York and throughout the northeastern United States than has previously been conducted.

The presence of mercury in lakes and streams is already well documented, and the New York Department of Health advises people to restrict the consumption of any freshwater fish caught in most of the state to no more than one meal a week.

But Dr. Evers is one of the first scientists to test for wildlife mercury contamination beyond fish. He began his work in this area in 1998 and found that common loons, which eat fish, had highly elevated levels of mercury that made them lethargic and caused their reproductive rates to drop.

He then decided to study songbirds, which never eat fish. In particular, he wanted to study the wood thrush, a small bird with a distinctive song that was once common throughout the Northeast. The population of wood thrushes has declined 45 percent in recent decades.

It was once thought that destruction of the bird's forest habitat was responsible for the decline. But Dr. Evers now suspects that mercury contamination might be a factor, along with the wide-ranging negative effects of acid rain on the forests.

Last year the Nature Conservancy, concerned about mercury contamination in the Adirondacks and Catskills and its effect on the ecosystem, commissioned Dr.

Evers and the Biodiversity Institute to undertake a pilot study in New York State. He netted songbirds at nine sites, including areas near some of New York City's upstate reservoirs.

(Although the Department of Health fish advisory extends to the reservoirs, regular sampling by city officials has not detected any mercury in the water.)

Much of the mercury that is causing problems in New York comes from coal-burning power plants, including those in Ohio and other states in the Midwest. Smokestack emissions from those plants tend to drift eastward. The airborne mercury eventually falls to earth, settling in lakes and streams where it is transformed into methyl mercury, which is toxic.

The chemical then enters the food chain through worms and tiny creatures that live on lake bottoms. They are eaten by small fish, which then become prey for larger fish. The amount of mercury is magnified as it goes from smaller species to larger ones.

Dr. Evers's work suggests that when mercury falls on land, it is absorbed by soil and by fallen leaves that are consumed by worms and insects. Songbirds then feed on the bugs, absorbing the mercury.

While all the birds he tested last year had mercury in their blood, wood thrushes had the most, Dr. Evers said, an average of 0.1 parts per million. That is below the federal safe standard for fish (0.3 p.p.m.) but high enough to affect the birds' reproductive cycle.

With fewer songbirds to eat potentially harmful insects, the state's forests would be at greater risk for damage by gypsy moths and other pests, Dr. Evers said.

Beyond that, mercury leaching into soil could find its way into the food chain in ways that are still unknown, he said.

This summer, again with support from the Nature Conservancy and the Biodiversity Research Institute, Dr. Evers has expanded his sampling range to cover 33 sites in New York and across the Northeast.

"That starts to get us to the point where we can provide solid scientific findings to public policymakers who will have to decide what to do about mercury," he said.

The project has also taken blood samples this year from nesting bald eagles.

Tim Tear, senior scientist and manager of the Nature Conservancy's global conservation approach team, said that while last year's pilot study did not

provide conclusive evidence, it "certainly gives us confidence that our early hypotheses" about the deposition of mercury on land are correct, warranting further study.

[Photograph]

Tests on birds like this wood thrush found in the Catskills last year indicate that mercury may be a hazard in New York's woodlands as well as in its state waters. (Photo by Tony Cenicola/The New York Times)