

Maine bird study showing pervasive contaminants resonates locally

By Katie Curley
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NEWBURYPORT — A Maine environmental group says its study on the contamination of birds in that state sheds troubling light on the effects of pollution on wildlife across New England.

A report released yesterday by the BioDiversity Research Institute in Gorham, Maine, showed mercury, flame-retardants, industrial repellents, transformer coolants and pesticides were all found in the eggs of a variety of birds living on the Maine coast.

The results indicate the pollutants are being passed to offspring and that environmental pollutants are harming New England wildlife beyond Maine's borders, raising questions about the pervasiveness of the pollutants in the environment.

"Southern coastal Maine had the highest levels of contamination," said Wing Goodale, senior biologist for BRI and the study's principal investigator. "This indicates closer to developed areas, there are greater contaminants because there are more local sources.

"It is safe to say the Parker River area is more developed, and I would suspect has even more contaminants than Maine."

The study marked the first time modern pollutants and household chemicals, such as industrial wood stains, were found in wildlife.

Parker Wildlife Refuge biologists focus their research on blood mercury levels in the saltmarsh sharp-tail sparrow as a way to monitor how the pollution north of the state is affecting local birds.

The small sparrow feeds off organisms on the bottom of the food chain, such as spiders and aquatic insects, which refuge biologist Nancy Pau said makes it a good subject for monitoring future trends.

"We have been studying the saltmarsh sharp-tail since 2004 and have found they contain more mercury than those in Maine," Pau said yesterday.

Goodale said there's little doubt all 100 contaminants the Maine study looked for would be found in local sparrows and other birds.

"I'm certain we would find compounds everywhere if we looked at the saltmarsh sharp-tail sparrows in the Parker River; there is not one species that doesn't have these compounds," Goodale said. "Our study is applicable not only in New England but across the nation; flame retardants have been found in lower levels, even in Antarctica."

Though the Maine study did not include the sharp-tail sparrow, Pau said the grim findings in Maine and the climbing mercury levels in the sparrows locally over the years are not a good sign for the Parker River.

Last year, BRI sampled bird blood mercury levels and found 0.4 to 0.8 parts per million in birds at various sampling locations from Connecticut to Maine. In the Parker River Wildlife Refuge, the levels are significantly higher, around 1.2 parts per million.

Though currently the refuge only tests for mercury, Goodale is confident if the sparrows were tested for other contaminants, such as those found in the Maine birds, the results would be astonishing.

"It's really concerning," Pau said. "What we're seeing is that the concentrations have actually been increasing over the last three years."

Because National Fish and Wildlife officials are primarily concerned with environmental effects on the animals, Pau does not test the water, though she is certain that is where the mercury is coming from and is trying to secure additional funding to do more research.

"We tested the water at a bunch of locations two years ago and found the locations closer to the Parker River have higher levels, which was surprising," Pau said. "We thought it would have been closer to the Merrimack."

Historically the Parker River has been contaminated with high mercury levels from industrial emissions, most notably from coal-burning power plants over the years. As the mercury precipitates and filters into streams and ponds, it accumulates in organisms starting from the bottom of the food chain and working its way up.

But Pau is not so sure the problem is rooted in history.

"If it was a historical problem, levels would diminish over the years," Pau said. "One of the things we have noticed is that levels were much higher in 2006 than 2007, and we think that had to do with the Mother's Day storm where a lot of water was flushed down stream."

While New Hampshire researchers had determined in prior studies that overall mercury concentrations in fish and loons have declined noticeably since 1999, a study last week from BRI said mercury levels have risen in loons across the Northeast.

Researchers have also discovered that current concentrations at the mouth of the Merrimack are four to five times higher than current estimates from the Environmental Protection Agency.

Biologists admit there is a lack of data on mercury levels toward the mouth of the Merrimack and not much is being done to study the levels of mercury in the water.

Pau said the levels of mercury found in bird blood are not the same levels that would affect humans. Humans usually come in contact with mercury when high levels are found in the water and thus in fish they consume.

"It's toxic in high doses; in lower doses in birds we worry it can have neurological effects on behavior and development," Pau said, noting again, she has not tested the water. "Based on four years of sampling birds, I at least know mercury is going up."

In May, Pau will resume field work with refuge volunteers, identifying nests and catching birds to test blood levels. They will also be tagging the birds and fitting them with radio transmitters that will provide more information on the birds' patterns.

By tracking over a period of time, Pau will be able to tell how the mercury levels affect the birds' ability to raise their young, the number of young that hatch and the physical development of the birds over time.

Pau will also collect data on other birds in the refuge.

The one good thing found in the BRI study was the decrease in polychlorinated biphenyls, chemicals that have long been outlawed across the nation. Goodale hopes the results of the study prompt lawmakers to make decisions about how the nation should handle chemicals, noting that when a chemical is banned, effects on the environment decrease.

"This is an ongoing study," Pau said. "Mercury may be having an impact, but we need a lot more testing. It's not a smoking gun, but there is definitely something going on."