

# FOCUS . . . Contaminants

## Mercury Found in Songbirds in New England Salt Marshes

**“I was surprised to find high mercury levels in wildlife on our refuge.** We had always considered the salt marsh to be the most pristine of our habitats,” said Nancy Pau, wildlife biologist at Parker River National Wildlife Refuge in Massachusetts. Parker River Refuge is one of four national wildlife refuges on which the nonprofit BioDiversity Research Institute (BRI) (<http://www.briloon.org/>) tested saltmarsh sharp-tailed sparrows for mercury contamination.

BRI biologist Oksana Lane was also “surprised to find such elevated mercury in most of the birds we sampled in several national wildlife refuges set aside to protect birds.” The other refuges are Rachel Carson in Maine, Stewart B. McKinney in Connecticut and Rhode Island National Wildlife Refuge Complex. Testing is now underway at Long Island National Wildlife Refuge Complex in New York as well. The three-year sparrow survey was based on data from 220 individual birds.

Nearly all the mercury measured in the saltmarsh sharp-tailed sparrows blood was methyl mercury, which is a more toxic form. It had been thought that mercury contamination was primarily a problem in fish or fish-eating birds. Now BRI concludes that “airborne mercury is

pervasive and its impacts are no longer limited to surface waters and the wildlife that use them.”

Mercury contamination typically comes from industrial runoff or as a byproduct of burning fossil fuels. Mercury concentrates in salt marsh environments, accumulating in food chains. The salt-marsh sharp-tailed sparrows consume invertebrates, possibly species with high mercury levels. The biological reasons for the bioaccumulation in sparrows are not yet known, but it is likely that elevated levels may cause behavioral changes in birds and possibly lead to reduced productivity. More studies – and more funding – are required to establish if and how mercury affects the birds’ health and survival.

### Much to Learn from Wetland Songbirds

The refuge biologists are most eager to learn more from the sparrows. All four of the New England refuges worked closely with BRI to select study sites, monitor nesting productivity, help capture sparrows for blood sampling and, as biologist Kate O’Brien at Rachel Carson Refuge put it, “have lively discussions on how to frame research questions and gather data on a shoestring budget.”

So far, the testing has raised more questions than answers. “It’s difficult



Researchers are investigating the risk of mercury contamination to waterbirds like the American avocet on the San Francisco Bay National Wildlife Refuge Complex. (USFWS)

## Mercury Contamination in Waterbirds in San Francisco Bay

**A large collaborative research project is investigating the risks of mercury to waterbirds** breeding on the San Francisco Bay National Wildlife Refuge Complex. The goal is to determine the actual levels of mercury contamination

in the waterbirds and its effects on reproduction, typically the most sensitive manifestation of mercury toxicity.

The study covers five species – two terns (Forster’s and Caspian), two shorebirds (American avocet and black-necked