



# Waterfowl: Contaminants Monitoring

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Annual movement patterns of American common eiders *Somateria mollissima dresseri* (2020)

## Pilot Assessment of Methylmercury Availability to Mallard Ducks on the South River, Virginia

The South River, located in the Shenandoah Valley of Virginia, was polluted with mercury by industry in the early 1900s. Extensive wildlife research has been conducted on the South River by various research partners, as part of the collaborative [South River Science Team](#).

**Lead Investigator:** [Lucas Savoy](#)

**Contributing BRI Staff:** [Dustin Meatley](#)



## What We Studied

Between 2006 and 2008, BRI conducted a waterfowl contaminant study on the South River, Virginia. We chose to study the Mallard Duck (*Anas platyrhynchos*), since it was a common breeding bird throughout the river and floodplains, and has been studied extensively in lab based mercury affects studies.

Our objectives included:

1. Live-capture breeding Mallard Ducks on the South River and a non-polluted reference river and collect blood and feather samples to analyze for mercury concentrations;
2. Place radio transmitters on adult female Mallard Ducks and track them to their nest sites and collect eggs for mercury analysis;
3. Compare mercury levels in blood, feathers, and eggs to lab-based Mallard Duck effect studies.



## What We Found: Study Highlights

Prior to the egg laying period, we constructed wire walk-in traps and placed them along areas of the South River where we observed Mallard Duck pairs. Traps were checked twice a day. Captured ducks were extracted and blood and feather samples collected before the birds were released. We attached a radio transmitter to each adult female Mallard Duck we captured in order to track birds to their nests and collect the eggs.

We trapped 109 adult Mallard Ducks and collected 285 eggs.

Results indicate:

1. Mallard Ducks on the South River contain 26 times greater amounts of mercury in their tissues as Mallards from a non-polluted comparison river;
2. Mallard Ducks on the South River contain residues of mercury at levels comparable or exceeding levels from lab-based studies demonstrating reproductive impairment.

## Additional Information

[South River Science Team](#)

Photo Credits: Header photo of Mallard Duck nest with eggs © BRI-Lucas Savoy; Mallard Ducks in trap © BRI-Tim Divoll

### ABOUT BRI

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**[BRI's Research Published in the Journal Evolutionary Applications](#)**  
*July 6, 2021*

**[BRI Featured in Discover Magazine Online](#)**  
*June 22, 2021*

**[New BRI-IPEN Study Shows High Mercury Levels in Indigenous Latin American Women](#)**  
*June 15, 2021*

**[BRI Loon Biologist Awarded NSF Grant](#)**  
*June 11, 2021*

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#### ADDRESS

Biodiversity Research Institute  
276 Canco Road, Portland, ME 04103  
Phone: 207-839-7600 Fax: 207-887-7164  
Email: [bri@briloon.org](mailto:bri@briloon.org)

