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November 23, 2020

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The Impact of Mercury in New York State
Fifty Years of Data Reveal Mercury Remains a Pollutant of Major Concern

Portland, ME – The Biodiversity Research Institute (BRI) today announced that a series of multi-year scientific studies that assessed the impact of mercury on air, water, fish and wildlife in New York State was published in the journal *Ecotoxicology*, an international journal devoted to presenting critical research on the effects of toxic chemicals on populations, communities and terrestrial, freshwater and marine ecosystems.

“This wide collection of studies shows that efforts to advance recovery from mercury pollution in New York State in recent years have yielded significant progress,” says David Evers, Ph.D., BRI executive director and co-editor of this special issue. “And, while there is still much work to be done, this New York State synthesis becomes an important model for the study, monitoring, and risk assessment of environmental mercury across the globe.”

This scientific collaboration, funded by the New York State Energy Research and Development Authority (NYSERDA) in 2018 through its Environmental Research Program, has resulted in 22 papers published in the *Ecotoxicology*'s December 2020 issue as well as two separate papers that were published in the October 2020 issue, which specifically focused on mercury in songbirds.

Major findings of the scientific synthesis of mercury in New York State include:

1. New York State features natural areas that are ecologically, culturally, and economically significant, but widely contaminated with mercury largely due to atmospheric emissions and deposition.
2. The scope and magnitude of the impact of mercury on fish and wildlife in New York State is much greater than previously recognized. Mercury concentrations exceed human and ecological risk thresholds in many areas, particularly in inland waters.
3. The Adirondacks, Catskills, and parts of Long Island are particularly sensitive to mercury pollution. The impact of mercury emissions and deposition is exacerbated by landscape characteristics. Abundant forests facilitate mercury deposition, while wetlands enhance transport, methylation, and uptake leading to elevated concentrations in aquatic and terrestrial food webs.

4. Mercury concentrations in the environment of New York State have declined over the last four decades, concurrent with decreased air emissions from regional and U.S. sources. After initial declines, however, concentrations of mercury in some fishes and birds from certain locations have stabilized or even increased in recent years—revealing complex trajectories of mercury recovery.
5. While the timing and magnitude of the response will vary, further controls on mercury emission sources are expected to continue to lower mercury concentrations in the food web, yielding multiple benefits to fish, wildlife, and people of New York State. It is anticipated that improvements will be greatest for inland lakes and roughly proportional to declines in mercury deposition.

“Under Governor Cuomo, New York has been a national leader in mercury emissions reductions,” says Greg Lampman, Environmental Research Program Manager, NYSERDA, “and we are now seeing the important environmental benefits these reductions can bring to New York’s ecosystems that are highlighted in this special issue. NYSERDA is pleased to sponsor the work of BRI in this critical synthesis, which builds on the mercury monitoring and research that we’ve supported for more than 20 years.”

NYSERDA’s Environmental Research Program aims to increase the understanding and awareness of the environmental and public health impacts of energy choices and emerging energy options and provide a scientific foundation for creating effective and equitable energy-related environmental policies and resource management practices. Since 2016, NYSERDA has provided \$30 million to catalyze more than 150 multi-institution collaborative efforts like this, including scientific research studies, workshops and analysis bringing diverse perspectives and expertise to inform policy.

The *Ecotoxicology* special issue Volume 29, issue 10, December 2020
Mercury in the Environment of New York State
is now online and can be found at:

<https://link.springer.com/journal/10646/volumes-and-issues/29-10>

A complete summary of results can be found in the BRI publication, *New York State Mercury Connections: The Extent and Effects of Mercury Pollution in the State*, which can be downloaded [here](#).

A related study, *The Impact of Mercury on North American Songbirds: Effects, Trends, and Predictive Factors*, which can be downloaded [here](#), featured two scientific papers on songbirds that were also included in the results of the New York State study.

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Biodiversity Research Institute (BRI), headquartered in Portland, Maine, is a nonprofit ecological research group whose mission is to assess emerging threats to wildlife and ecosystems through collaborative research, and to use scientific findings to advance environmental awareness and inform decision makers. For information about BRI’s Center for Mercury Studies, visit: www.briloon.org/hgcenter.

The New York State Energy Research and Development Authority (NYSERDA), a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975. To learn more about NYSERDA's programs, visit nyserdera.ny.gov or follow on Twitter, Facebook, YouTube, or Instagram.