

Mercury, Birds, and Bogs

Jocelyn Kickbush, Dr. Nelson O'Driscoll, Dr. John Murimboh, Dr. Jennie Rand,
Dr. Mark Mallory

What do mercury, birds and bogs have in common? Big Meadow Bog on Brier Island, NS! When human activities release the toxic contaminant mercury into the environment it often ends up in unintended places, such as in the atmosphere, water systems, and organisms, including birds. Through environmental and biological processes, such as the hydrological cycle or bird migrations, mercury moves until it is deposited into aquatic and terrestrial environments, such as Big Meadow Bog on Brier Island (Digby County).



Bogs and other wetlands are one of the most efficient ecosystems for converting mercury into its most toxic form, methylmercury, which then is taken up by the food web, where it can eventually reach humans and have reproductive and neurological impacts.



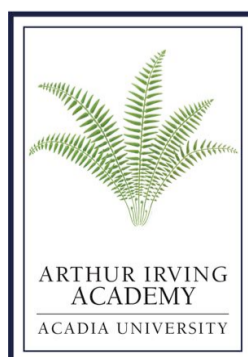
But when Big Meadow Bog is colonized by 6000 gulls, the gulls release nutrient and heavy metal laden guano into the system that changes the traditional processes of the bog, and hence the mercury cycle.



By analyzing the water chemistry in surface water and groundwater samples from Big Meadow Bog, as well as two nearby pristine bogs, this project is striving to determine if gull presence on Big Meadow Bog is increasing or decreasing the production of methylmercury, and to better understand these changes in an ecological environment.



ACADIA
UNIVERSITY



ARTHUR IRVING
ACADEMY
ACADIA UNIVERSITY



NSERC
CRSNG

