

Avian Botulism in Lake Erie

Sea Grant Responds

For birders, both novices and those with extensive life lists, the chance to see a common loon is exciting. Last fall, their excitement turned to disappointment as they found many of these beautiful birds washed up along the New York shore of Lake Erie. And loons weren't the only dead birds found – hundreds of mergansers, grebes, mallard ducks, ring-billed and herring gulls, and other dead waterfowl littered the shoreline. These birds were killed by **avian botulism**, a bacterial disease that can wipe out entire flocks of waterfowl. According to the New York State Department of Environmental Conservation, the agency in charge of collecting, counting and conducting pathology on the birds, more than 5,000 birds were impacted by the outbreak in 2000.

Avian botulism, a disease caused by *Clostridium botulinum*, has been recognized as a major cause of mortality in migratory birds since the 1900s. Although type C botulism has caused the die-off of thousands of waterfowl (especially ducks) across the western United States, type E botulism has been mainly restricted to fish-eating birds in the Great Lakes. Other outbreaks of type E have sporadically occurred in Alaska, Florida and California, and periodic outbreaks have occurred in Lake Michigan and Lake Huron over a 20-year period beginning in 1964. During 1999 and 2000, a large die-off of waterfowl occurred in Lake Erie and type E botulism was isolated in these outbreaks.

In response to the outbreaks, New York and Pennsylvania Sea Grant co-sponsored the first Lake Erie conference on avian botulism in Erie, Pennsylvania, on January 24-25, 2001. This conference brought together more than 60 researchers, fishery and wildlife biologists, resource managers and agency representatives. The goal of the workshop was to share findings from both the American and Canadian shores and develop a research agenda for future efforts. Organizers wanted to determine the extent of the botulism problem based on geography and

environmental conditions that existed during the outbreaks. During the second day of the conference, several breakout sessions were convened to address the research agenda questions that were posed to participants. Although organizers realized that the meeting was premature from a research data standpoint, they wanted to create a functioning network of scientists who could work together on research issues and respond to future outbreaks, if needed.

As a result of the workshop, response teams were developed for each state and Ontario, in case there are future botulism outbreaks. Several teams have been formed and research proposals are being developed to address research questions that came out of the conference. It is hoped the work and collaborations that began at the workshop will be able to answer some of the questions and fill in the information gaps surrounding this devastating problem.

— **Helen Domske**
NYSG Coastal Education Specialist

Photo by Larry Smith, Conservation Office, PA Game Commission



A dead gull and dead fish along Lake Erie's shore, 2000. PA Sea Grant's Eric Obert reports that this sight has been common during the summer of 2001, too.