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DEC Reports the Return of Type E Botulism in Lake Ontario Waterbirds

The New York State Department of Environmental Conservation (DEC) today announced that Type E botulism has again struck the eastern basin of Lake Ontario this fall resulting in sizeable mortality in migrating waterbirds. Reports from the public and field investigations by DEC crews indicate that at least 200-300 common loons have washed ashore along Jefferson and northern Oswego County shorelines. The loon deaths were all attributable to type E botulism. Long-tailed ducks, grebes and gulls have also been found. A mortality event involving this many loons has not been seen on Lake Ontario since 2006.

Type E botulism is caused by a bacterial toxin produced by *Clostridium botulinum*, a widespread bacterium in the sediments of the Great Lakes. Certain environmental conditions cause this strain of *Clostridium* to produce a toxin that can spread through the food web of the lakes. First documented in waterbirds from Lake Michigan in the 1960s, type E botulism was recorded irregularly for three decades in the lower Great Lakes.

Since the late 1990's, however, type E botulism in birds has become an annual event in one or more of the Great Lakes resulting in very large kills in some years. Two non-native species, round gobies and quagga mussels, appear to play a key role in this change of pattern. Botulinum toxin, generated in the vicinity of mussel beds, possibly in rotting mats of algae, is picked up by the filter-feeding mussels. The mussels are the preferred food of the round goby, a small bottom-dwelling fish that is very sensitive to the toxin. Intoxicated gobies in turn become easy prey for diving waterbirds, such as loons, grebes, and some duck species. The remains of gobies are the most common component in the stomach contents found in botulism-killed diving birds. Since the emergence of this new disease system, thousands of birds have perished annually.

To date in 2013, all known botulism mortality in diving birds in New York has been confined to the eastern basin of Lake Ontario. Bird carcasses did not wash ashore until late October, the majority arriving in the last two weeks. In past years, mortality events have not occurred much later than the third week of November therefore DEC biologists do not anticipate much additional mortality, although carcasses may continue to wash ashore for a while longer.

The public is encouraged to report dead birds to the regional DEC offices. Carcasses contain small amounts of toxin and pose some threat to animals that feed on them. DEC has removed carcasses from portions of state-owned shoreline. Shoreline residents are encouraged to bury carcasses if feasible. To report dead birds found in Jefferson County contact the DEC at [315-785-2263](tel:315-785-2263); to report birds found in Oswego or Cayuga counties, contact the DEC at [607-753-3095](tel:607-753-3095), ext 247.