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Migratory water birds predicted to die in unprecedented numbers in 2003

Long Point, Ontario, 10 December 2002 – Scientists at Bird Studies Canada (BSC) are predicting that thousands of migratory water birds will perish on Lake Erie in 2003, poisoned by Type E botulism. "2002 is the fourth consecutive year in which we've seen dramatic increases in the numbers of deaths," said Jon McCracken, BSC's Ontario Program Manager. "If conditions don't change there is every reason to believe that even more birds will die of botulism." Studies are badly needed to assess the role that changes in climate, water temperature, lake water levels, and invasive species are playing in the development of massive outbreaks of Type E botulism.

Type E botulism is produced by a bacterium (*Clostridium botulinum*) that naturally lives within lake sediment. Under certain conditions toxins enter the aquatic food chain, affecting fish and fish-eating birds. These conditions are thought to include appropriate temperatures and a lack of oxygen. Death comes as a result of paralysis of respiratory muscles, or for water birds, drowning from not being able to hold their heads above water.

One theory is that concentrations of zebra and quagga mussels on the lake bottom can create such ideal conditions, and that they concentrate botulism toxins in their tissue. An associated theory is that round gobies, a bottom feeding fish, eat scores of infected zebra mussels and further mobilize and concentrate the toxin to the next food level. Larger fish and several species of fish-eating water birds feed extensively on abundant gobies, become poisoned and succumb to the toxin. Zebra mussels, quagga mussels and goby are all exotic species, introduced to the Great Lakes since 1985.

Steve Timmermans, BSC's Aquatic Surveys Scientist, calculated that more than 900 dead Common Loons washed up on the south shore of Long Point, Lake Erie, during the week of 18 November. "We have to ask ourselves how many birds have died. For every bird found, how many go undiscovered?" McCracken went on to say there have been three die-offs in 2002. In August it was the gulls and shorebirds, in October it was scaup, long-tailed, and merganser ducks, and in November it was the Common Loon.

Jeff Robinson, biologist with the Canadian Wildlife Service (and National Wildlife Area Manager for Ontario), has been coordinating information on the Canadian side of Lake Erie and collaborating with American researchers and agencies for the last four years. Based on the mortalities observed in July and August, Robinson anticipated there would be a large die-off of migratory fish-eating birds.

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Bird Studies Canada would like to reinstate the Great Lakes Beached Bird Survey to monitor water bird mortality (similar programs are currently being conducted in British Columbia and Atlantic Canada). BSC has data from a program that it conducted in the 1970s and early 1980s that could be used to provide comparative information. McCracken says that we need to gain a much better idea of how many birds are dying across the Great Lakes before we can assess whether the Common Loon and other water bird populations may be threatened by botulism.

A Canadian copartner in BirdLife International, Bird Studies Canada is the pre-eminent, non-profit, organization committed to advancing the understanding, appreciation and conservation of wild birds and their habitats. BSC's Headquarters and National Research Centre is located at Port Rowan, near Long Point, Ontario.

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Attention Editors: A fact sheet on avian botulism is available at <http://www.bsc-eoc.org/download/botulismfacts.pdf>, as is a backgrounder on Bird Studies Canada at <http://www.bsc-eoc.org/download/BSCbackground.pdf>. Photographs of loons found on the south shore of Long Point are available as jpegs and may be used by the media. Download photos at <http://www.bsc-eoc.org/download/mediaphotos/photodownload.html>.

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