

## **Botulism in Fish and Wildlife in NYS Waters of Lake Erie**

Ward Stone – Pathologist, NYS Department of Environmental Conservation  
(Slide presentation – not available)

This presentation focused on the work being done by NYSDEC pathologist Ward Stone and his lab colleagues. He indicated that there were more than 7,000 submissions for botulism testing during the year. Type E botulism was diagnosed for the first time in 2002 and the toxin was found in sheepshead and smallmouth bass.

Regarding the birds that were examined, Stone indicated that the birds were not thin, and it appeared that these fish-eating birds looked like they drowned. He noted that round gobies and mudpuppies were found inside many of these birds. Some of the bird carcasses were scavenged by other mammals, which would seem to explain the opossum and 2 raccoons that were recovered and tested positive for botulism. He did mention that 1,100 loon carcasses were found over a small area, indicating the intensity of the die-off.

He also mentioned that shorebirds ate fly maggots and the larvae were in the gizzards which concentrated the toxin. Stone surmised that long-tailed ducks were eating quagga mussels and were probably picking up the type E toxin directly from the mussels.

Ward Stone discussed experiments that his lab worked on, including feeding pieces of loon livers that contained the type E toxin to round gobies. He stated that round gobies carry the toxin quite readily and are highly susceptible. Within 12 hours the gobies are usually dead, but can survive up to 24 hours.

Concerning the outbreak in Lake Ontario, Stone gave the following information on species impacted by type E: A ring-billed gull was collected at Fair Haven on July 16, 2002. A long-tail duck was found at Four Mile Creek, and a common goldeneye was collected at Fort Niagara on October 29<sup>th</sup>. A herring gull was collected at West Brighton, Pt. Breeze on November 4, 2002.

Stone also noted that his lab found 10 different types of botulism type E in specimens collected and also a variety of botulism types were found in the Lake Erie sediments.

### **Found and Examined Type E Botulism Outbreak**

<b>2000</b>	<b>2001</b>	<b>2002</b>	
106	303	434	Common Loon
11	5	128	Horned Grebe
2	29	19	Double-crested Cormorant
1	44	4,877	Long-tailed Duck
424	16	627	Red-breasted Merganser
70	58	151	Herring Gull
427	160	856	Ring-billed Gull
33	22	22	Great Black-backed Gull
0	23	2	Sanderling
13	3	22	Bonaparte's Gull
1,100	706	7,202	TOTAL