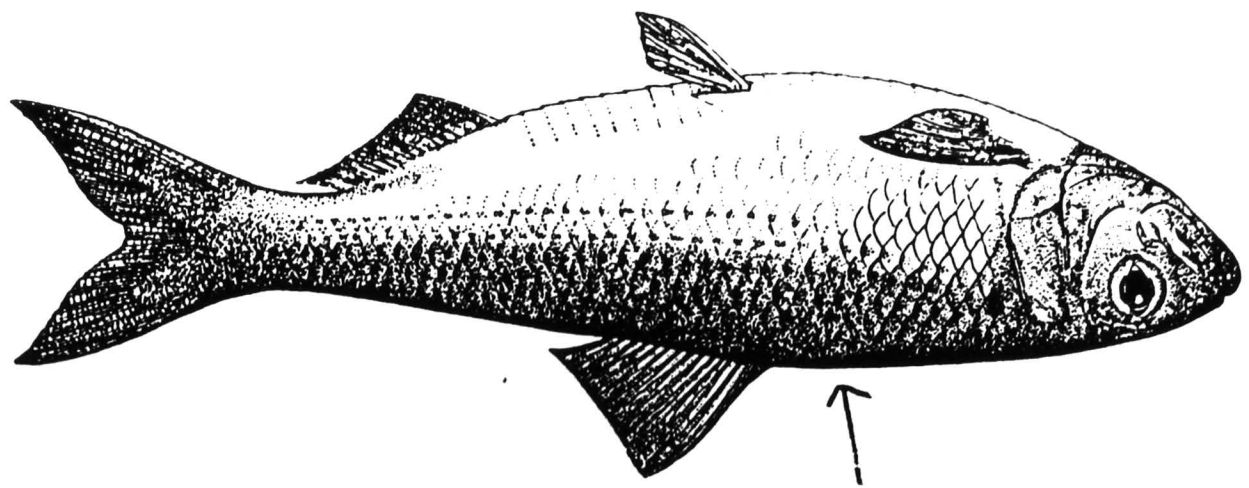


Alewife Fact Sheet

July/2000

This fact sheet is to give staff background information that will allow them to answer visitor inquiries about all the dead fish on the beach.



Alewife in typical Sandbanks pose

Alewives (*Alosa pseudoharengus*) are small members of the Herring family. They are a marine species that uses freshwater streams and lakes for spawning. They were first reported in Lake Ontario in 1873, though how it became established here is uncertain. It may have been accidentally introduced during fish stocking programmes for the similar American Shad. It may have made its way into the lake on its own through man-made canals or up the St Lawrence. It is also possible that it has been present in Lake Ontario all along. After the melting of the last glacier an arm of the ocean, called the Champlain Sea reached up the St. Lawrence valley to the Ottawa area and gave access to inland waters for many marine species. However it arrived it became abundant in Lake Ontario by the end of 1800s.

Lake Ontario alewives spend most of the year in the open lake waters. They move into shallow beaches to spawn. Movement inland starts in late April but they are most abundant on the spawning grounds in late June with some fish remaining until late July. During the spawning period they stay off-shore during the day and move into shallow water at night. The schools mill about in the shallow water while spawning with females depositing about 100,000 eggs apiece. The eggs hatch in 3 to 6 days depending on water temperature.

The Great Lake populations of Alewives have always been subject to mass die-offs. This occurs during the spawning time when alewives move into shallow water. The reason why is not fully understood but is thought to be the result of the alewife's inability to cope with rapidly rising or fluctuating water temperatures. Fish used to the cool deep lake waters are sometimes shocked beyond recovery when they move into the warm shallow spawning waters.

The frequency of alewife occurrence on Sandbanks beaches seems to be somewhat cyclic in nature. 1999 was the first year in about 10 that alewives have washed up here in any numbers. The fish are again noticeable in 2000 with modest numbers of dead fish found along all shores in the park. These numbers don't compare to the huge numbers that died here in the late 1980s when fish carcasses were routinely removed by the dump truck load.

Reference: Scott and Crossman, 1973: Freshwater Fishes of Canada. Fisheries Research Board of Canada, Ottawa, Bulletin 184.

PS - I don't know the origin of the name

June 7, 1974.

Vol. 3 No. 4

An Example of Natural Pollution: The Alewife

Anyone walking along the shore of Lake Ontario during the next month will find it littered with the bodies of thousands of small silvery fish. These fish are alewives and every year they die off in enormous numbers within the Great Lakes.

The alewife, a primarily ocean dwelling species, is a member of the Herring family. On close examination one will notice that the alewife has a slab-sided body with fins that lack spiny rays and they possess a characteristic sharp-edged row of spiny scutes along their bellies.

The alewife consumes large quantities of zooplankton, which are microscopic aquatic animals, and in turn, alewives are the main food source for many other larger fish. Consequently this species plays an important part in many Lake Ontario food chains. These fish do not, however, afford any commercial fishery value despite their large numbers.

The alewife which primarily inhabited the Atlantic Ocean was first reported in Lake Ontario in 1873 and since then their overall distribution and population size has greatly increased. Every year large numbers die annually and wash ashore to produce an offensive sight and smell, and this has resulted in great financial loss to industrial, municipal and recreational interests on the Great Lakes. Although causes of this mortality are still unclear, fisheries research studies are revealing many factors contributing to this problem.

There are three periodic dieoffs of alewives in the Great Lakes and these occur in midwinter, early spring and summer. However, the first two are usually hidden from the casual observers on the beaches because these dieoffs occur in the deep waters of the Great Lakes. The few dead alewives that do reach the shore do not create the offensive smell associated with the summer dieoff because the low temperatures slow up decomposition.

In the ocean, alewives were subjected to relatively constant temperature and food supplies and it appears as though our annual alewife dieoff is a result of their apparent inability to adjust completely to the Great Lakes environment. Failure to adjust to temperature extremes and fluctuations within the Great Lakes seems to be of primary

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importance in this mortality. Also, depletion of food supplies, failure to adapt adequately to freshwater, failure to extract sufficient iodine from the iodine-poor Great Lakes or a combination of several of these possible causes might result in the millions of pounds of dead fish that wash ashore annually on Lake Ontario.

During the winter, alewives move into deep water where the water temperatures are low enough to cause drastic changes in behaviour and in their feeding habits. Under these conditions any further environmental change would probably cause a high death rate within the alewife population and therefore, when the alewives move inshore to shallow waters to spawn in May and June the warmer temperature that they encounter is the added shock which results in their mass dieoffs.

In view of the high reproductive capacity of the alewife, it is unlikely that they will become extinct, but these dieoffs will occur until this primarily marine species fully adapts to the freshwater Great Lakes.