

SAND TRANSPORT

SAND ON THE MOVE

ONLY SO MUCH SAND

Sand originated with the erosion of glacial sand and gravel deposits. Prevailing westerly winds and currents moved it to the eastern basin of Lake Ontario. Today, no new sand is available. As long as sand stays in the zone where it can be moved by winds, waves and currents, the sand supply can replenish beaches and dunes. Sand in the ponds and wetlands is lost from the dune system.

DAMMED BY BEDROCK
Northward moving sand is stopped at the mouth of Black Pond, where tilted limestone bedrock acts as a dam, holding the sand within the dune system.

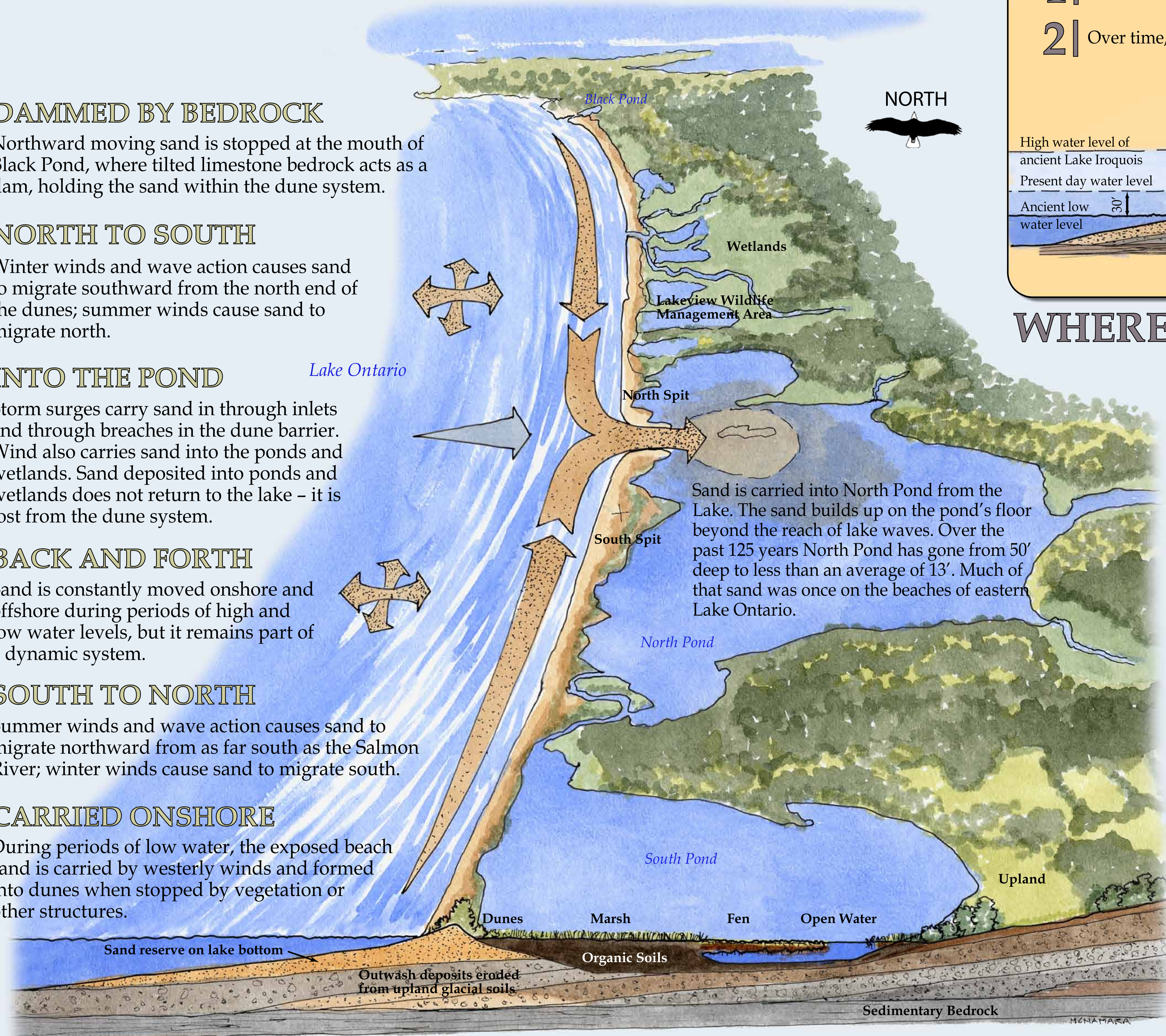
NORTH TO SOUTH
Winter winds and wave action causes sand to migrate southward from the north end of the dunes; summer winds cause sand to migrate north.

INTO THE POND
Storm surges carry sand in through inlets and through breaches in the dune barrier. Wind also carries sand into the ponds and wetlands. Sand deposited into ponds and wetlands does not return to the lake - it is lost from the dune system.

BACK AND FORTH
Sand is constantly moved onshore and offshore during periods of high and low water levels, but it remains part of a dynamic system.

SOUTH TO NORTH
Summer winds and wave action causes sand to migrate northward from as far south as the Salmon River; winter winds cause sand to migrate south.

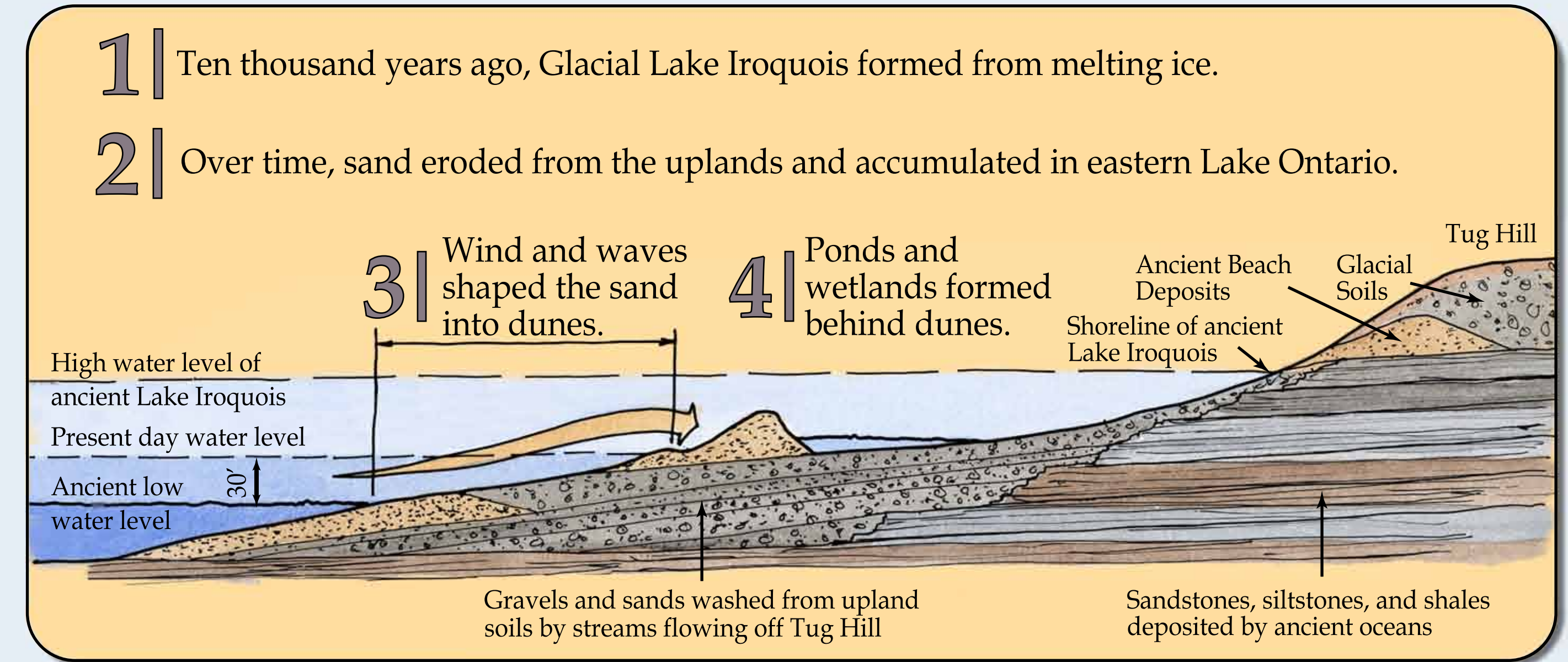
CARRIED ONSHORE
During periods of low water, the exposed beach sand is carried by westerly winds and formed into dunes when stopped by vegetation or other structures.



BIRDSEYE VIEW OF EASTERN SHORE LOOKING NORTH IN 2010

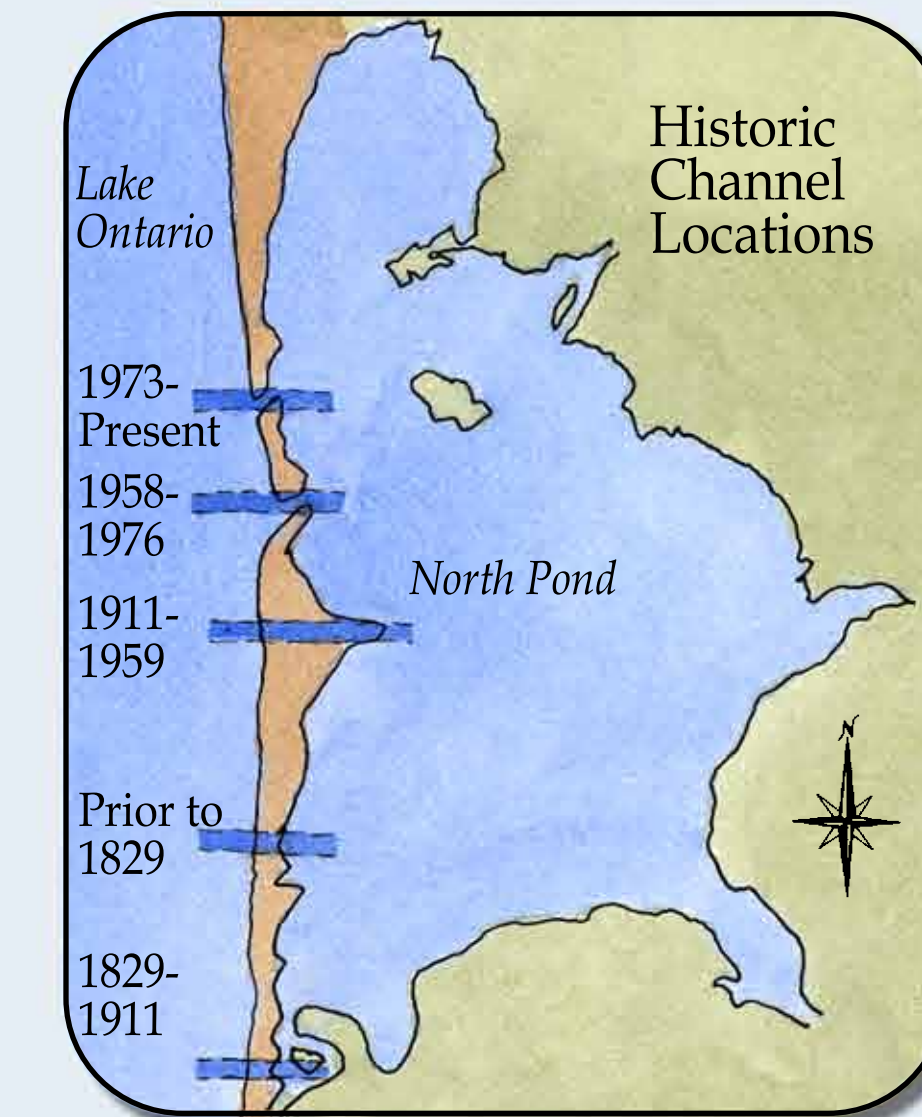
CROSS SECTION THROUGH SOUTH POND

Vertical scale is greatly exaggerated.



WHERE DID THE SAND COME FROM?

CHANGING CHANNELS



The location of the North Pond channel has changed periodically as a result of storm washovers from the lakeside, high flows from the creek side, and, more recently, human factors such as dredging, erosion, and development. Overlapping dates occur because after a new channel opens some time passes before the old channel closes.



Other Interpretive Panels in this Series.