

COASTAL WETLANDS AND BARRIER BEACHES

Barrier beaches – always changing!

Great Lake coastal wetlands form at the mouths of rivers and in bays along the shoreline. Many coastal wetlands in the Durham Region are separated from Lake Ontario by a barrier beach system. These beaches are naturally very dynamic, which means they shrink and grow depending on wave action, wind direction and water levels in Lake Ontario and the wetland. Occasionally they open up when wetland water levels rise above the Lake. They can also close completely when wind and waves push the sand and cobble into the opening. When, where, and how long these barrier beaches remain open and closed varies among wetlands and ongoing weather conditions.



Barrier beach open at McLaughlin Bay

As the barrier beach changes, water levels in coastal wetlands can rapidly move up or down by more than 50 cm. Coastal wetlands actually require these water level fluctuations to sustain higher biodiversity levels. The wetland plants and animals here have adapted to these extreme changes. Periods of sustained low water levels in the wetland expose the bottom sediment and its diverse bank of native emergent plant seed which germinate and re-establish an important plant community. This prevents expansion of aggressive emergent plants like cattails into drier meadow marsh plant communities. By contrast, when the wetland experiences higher than normal water levels, the aquatic zone expands preventing the establishment of upland woody plants. Fluctuations between these high and low water level periods maintains plant species diversity and the balance between shallow aquatic, shallow marsh, and meadow marsh vegetation communities. It is this diversity that attracts a variety of wildlife providing critical habitat for many wetland dependent species.

Since 1959, Lake Ontario water levels have been regulated resulting in the loss of extreme high and low water level periods. This created conditions that favour cattails as the dominant vegetation species, further reducing plant diversity and meadow marsh communities.

COASTAL WETLAND MONITORING

The Central Lake Ontario Conservation Authority (CLOCA) values the natural dynamic role of coastal wetland barrier beaches and the resulting fluctuating water levels that contribute to the ecological function and health of these important ecosystems. CLOCA and our partners collect data on several indicators including the biological communities, water quality and barrier beach conditions of 18 coastal wetlands along the north shore of Lake Ontario. For more information about the Durham Region Coastal Wetland Monitoring Project or to learn more about wetlands visit our website at www.cloca.ca or contact

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