

Beach Conservation



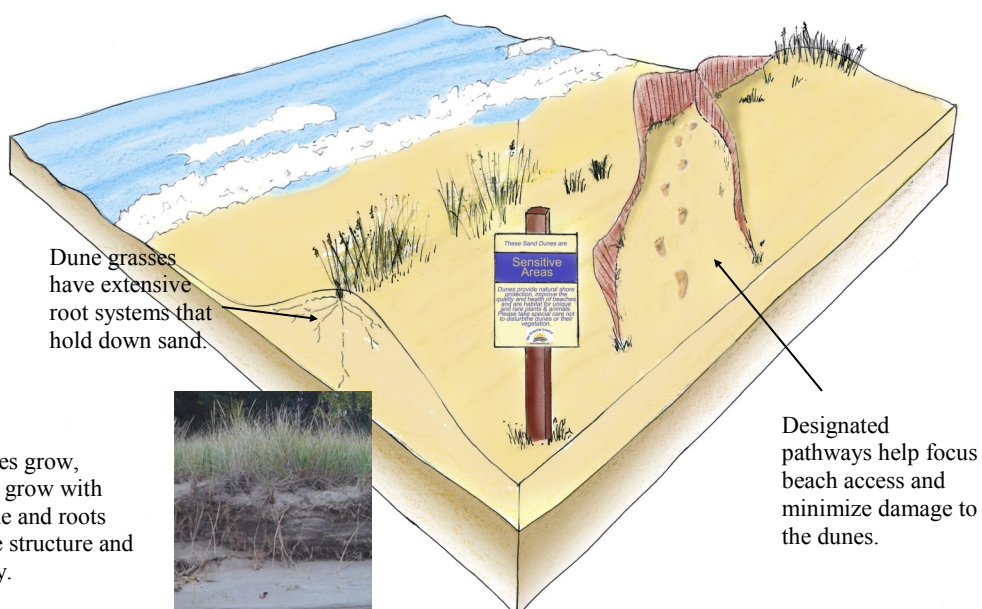
Learning about Beach and Dune Ecosystems

When you plan a day at the beach, you must already know that you'll be heading to a special place. Beaches are a great place for some rest and relaxation, but are also part of an ecological phenomenon. Most of our best beaches along Lake Huron are associated with sand dunes, those hills of sand covered with long grasses and shrubs. Many people don't appreciate how important those dunes are to the existence of the beach, and how vulnerable they are to human impacts.

Seasoned beachgoers will know that beaches and dunes are a very dynamic environment, meaning that they change constantly as a result of waves and wind. Waves tend to erode the dune during storms and high lake levels. Wind, on the other hand, builds up the dune to form a reserve of sand that acts as a protective buffer against future storm waves. This give and take is all part of the normal function of a dune ecosystem.

Back during the high lake levels we experienced in the 1980s and 1990s, the sand stored in the dunes were eroded by waves. This sand reinforced the sand on the beach, but also formed sand bars (underwater dunes!) which acted to 'trip' the waves and lessened the amount of wave energy reaching the beach. This is part of how dunes protect the coast from damaging wave energy. The other way is by providing a physical buffer or barrier between development and the beach. Erosion of the dune by waves is a natural process and part of dunes' important function.

From 1998 to 2012, we had experienced below average lake levels. During low lake periods, beaches become wider and wind has more beach to blow across, picking up sand and carrying it back into the dunes. Dune building occurs during these low lake periods. These sand reserves are important now that lake levels have come back up.





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So, what makes dunes vulnerable? Their vulnerability lies in how much people interfere with the natural processes and functions of the dune system. This interference can be as simple as damaging the anchoring dune vegetation, to extensive damage by vehicles or heavy equipment.

The dunes, which are hills of sand, would blow away if it were not for the specially adapted vegetation that grows in this sand environment. Dune grasses like American Beachgrass, Great Lakes Wheatgrass or Long Leaved Reed Grass are just some of the species that grow on Lake Huron's dunes, and are responsible for their creation. Without them, the sand would continue to blow inland, and those reserves of sand would not be present during high levels and storms. The consequence would be landward migration of the shoreline, threatening buildings and resulting in the loss of the recreation potential of the beach.

In New Zealand, they stress the importance of the dunes by using the simple phrase "No vegetation, no dunes. No dunes, no beach." It certainly captures the essence of how important our dunes are, not only to the environment, but to the economies of our lake communities.

Great Lakes dunes are among the most vulnerable ecosystems in Canada. They have undergone significant declines during the past century, largely as a result of shoreline development and recreational activities. Our diminishing dunes and their adjacent beaches are home to a number of rare species and plant communities. Proper care and conservation can ensure that our dunes are not lost due to complacency or neglect.



Next time you're at the beach, help protect our dunes:

- *Use designated pathways across the dunes to get to the beach.*
- *Avoid trampling the dune vegetation. Without it, the dunes will be open to wind erosion.*
- *Educate others about the importance of dunes.*
- *Dune vegetation can be rare, even globally rare. Learn more about dunes and dune stewardship. The more you know, the more you'll enjoy this natural ecosystem.*

For more information about dune conservation, contact the Coastal Centre.