
GREEN RIBBON
CHAMPION
PARTICIPANT GUIDE
the Coastal Centre
THE LAKE HURON CENTRE FOR COASTAL CONSERVATION

GREEN RIBBON CHAMPION

The Coastal Centre
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Our Vision: *A healthy Lake Huron coastal ecosystem*

Our mission: *To provide leadership and expertise, in collaboration with partners, to achieve a healthy Lake Huron coastal ecosystem.*

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Thank you to the following organizations for their ongoing support and assistance for the Green Ribbon Champion program.

Huron-Kinloss

nwmo
NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

LUSH FRESH HANDMADE COSMETICS

GREEN RIBBON CHAMPION

PROGRAM SUMMARY

PARTICIPANT GUIDE

This Participant Guide produced by the Coastal Centre provides the Green Ribbon Champion candidate with background information on the target areas of the program. The guide is meant to assist each participant with the interpretation of their beach health report so they can understand what might be required for their property to be awarded a bronze, silver or gold Green Ribbon Champion award.

Green Ribbon Champions are coastal stewards committed to the protection of the Great Lakes and are recognized for their efforts to understand coastal ecosystems, and for their actions to preserve, protect and restore them.

To become a Green Ribbon Champion, each participant must satisfy the Coastal Centre's five targets for good beach stewardship based on a grading system (A - D) which is used for each target:

1. Access Path
2. Sand Dunes
3. Dune Profile
4. Invasive Species
5. Equipment Storage

Participants who achieve straight A's receive a Gold Green Ribbon Champion award. Participants who achieve B's, C's and D's have some work to do and will receive either a Silver or Bronze Green Ribbon Champion award. An example of the Beach Health Report can be found at the end of this guide.

GRADE	TASKS REQUIRED
A	0
B	1 - 2
C	3 - 4
D	> 5

TARGET 1: PEDESTRIAN ACCESS PATHS

Straight paths, as illustrated in Photo 1, are prone to wind scour and considerable erosion as wind from the lake blows up the path gathering momentum and erosive force. Township of Huron-Kinloss residents are very aware of this problem, especially during the spring and fall. Sand blowing up pathways from the beach clogs roadways and can deposit around cottages.

Photo 1: Example of a straight and wide beach pathway which is prone to erosion.

The easiest way to stop the sand from blowing off the beach is simply to create a narrow pathway that has an 'S' shape. The 'S' shape forces the wind to blow through the beach grass, which cuts wind velocity and prevents large scale erosion.

Photo 2 illustrates a good example of a narrow 'S' shaped pathway to the beach, and a proper location for a cleared sitting area. By clearing an area behind the dunes and at an angle to prevailing winds, the sitting area causes minimal dune impacts because the wind does not have a straight path to blow sand off the beach and path.

Photo 2: Example of an "S" shaped pathway which prevents large scale erosion.

As an alternative, consider sharing a path to the beach with your neighbours. Not only will you be minimizing negative impacts on the dunes, you can share summer holiday stories while you make your way through the dunes to enjoy the lake.

TARGET 2: MAINTAINING & PROTECTING YOUR SAND DUNES

The photo below demonstrates the impact on beach sand quality due to the removal of part of a sand dune and accompanying beach grass. Because sand dunes represent an accumulation of sand, they are naturally higher than the adjacent beach. Also, the depth to the water table is proportional to the height of the surface of the sand. Therefore, the lower the surface of a beach, the closer the surface is to the water table, causing wet sand conditions.

The photo above also illustrates how the removal of a portion of the dune over time has lowered the surface of the beach/dune, leading to wet sand conditions (as shown by the darker coloured sand). Note that the dunes on either side of the depression have both a higher surface and dry sand (as shown by the lighter coloured sand). Wet sand on beaches away from the shoreline creates additional problems; it attracts and sustains unwanted vegetation than can ruin your sandy beaches. Note that in the photo, the foredune with the high and dry sand contains mostly native beach grass and no invasive vegetation.

The easiest way to correct this problem is to allow the dune to develop and grow naturally, either by using snow fencing to trap sand in the low area, planting beach grass in the low area, or allowing the beach grass to spread from the adjacent dune into the low area as featured in the photos below.

TARGET 3: MAINTAINING & UNDERSTANDING THE DUNE PROFILE

It is important to respect the natural composition of native species on the beach because they have evolved in a beach dune ecosystem and have organized themselves in a predictable way from water's edge to forest.

The dune profile is a cross-section through the dune system showing the change in the height of the surface of the beach and dune, and the vegetation types that occur as you move from water's edge to inland locations. The change in plant species, known as "plant succession" describes the natural development and change of plants on dunes. Over hundreds of years, the older parts of the dunes that are away from the lake become stable due to having little influence from wind and waves, and hence the plants become more permanent such as trees.

The three major sections of a natural dune environment in the Township of Huron-Kinloss are:

1. **The beach:** relative flat area or gently rising from the shore to the base of the dunes; affected by waves and storms, hence no vegetation.
2. **The foredune:** noticeable rise in surface elevation, lightly vegetated (especially beach grass) affected by wind and blowing sand but not waves; grasses migrate towards and away from the shore in response to long term lake level changes.
3. **The backdune:** higher and older portion of the dune environment, not affected by waves or lake level changes, may be affected by strong wind; a stable environment for long-term establishment of trees, shrubs, etc.

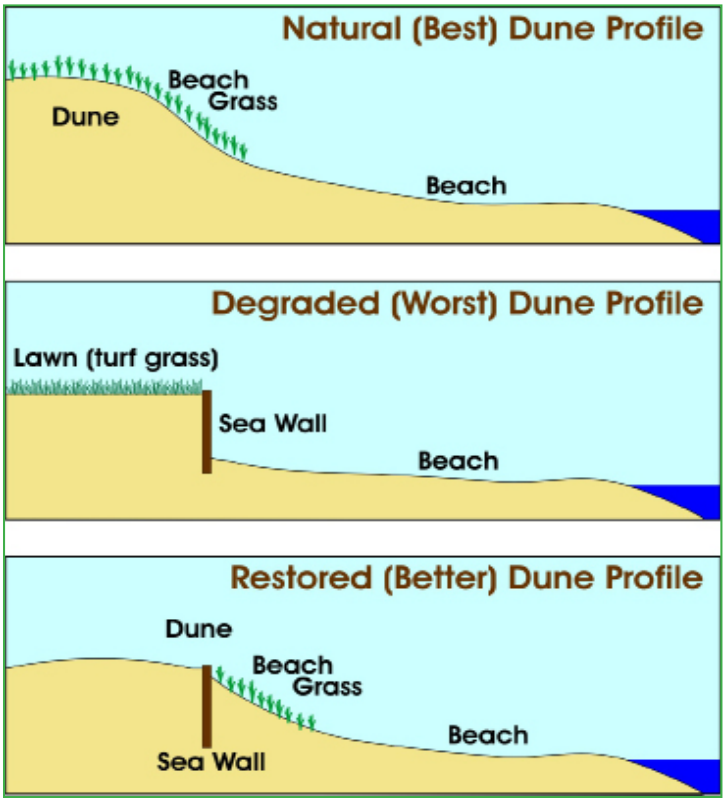
A healthy dune system is adaptable to changes in the lake, such as long-term lake-level changes. As water levels rise and fall, the grasses in the foredune expand and erode in unison. Any interruption in this natural cycle, such as removal of dunes and beach grass, building sea walls, or development of permanent structures in the foredune or backdune can impact dune succession, and therefore the system's ability to adapt to changing lake conditions over time (refer to photos below for comparison.)

Healthy beaches are able to respond to changing water levels in the lake. The images show Bruce Beach, south Bruce County on the shores of Lake Huron during high water years in 1986 and low water in 2005.

The simplest way to avoid long term damage is to properly maintain and care for the dunes and the native vegetation that creates a healthy dune profile. When planting is necessary, choose native vegetation appropriate to each section of the dune profile. If native species are difficult to find, contact the Coastal Centre. Many native species can be easily propagated or transplanted from a local source. You may refer to the Coastal Centre's native plant guide "The Good, The Bad, and The Ugly".

NOTE: SEA WALLS

With respect to the dune profile, sea walls built in response to high lake levels pose a challenge to the natural function of dune systems. While dunes provide dynamic flexibility, eroding and re-building with the changing water levels, sea walls are rigid, fixed structures.



During periods of low lake levels, the vertical wall can cause beach loss and change wind patterns, affecting how and where sand gets deposited. During periods of high lake levels, these vertical structures can reflect wave energy downward at the base of the wall, which can cause scouring in front of the wall and erosion that can undermine the structure, causing it to fail. A healthy dune with beach grass acts as a natural sea wall, that will protect properties during times of high lake-levels.

The lake and your property will benefit from the removal of an existing sea wall followed by the restoration of a healthy dune profile. Keep in mind that the opinion of a qualified coastal professional should be sought to ensure such change does not cause unnecessary risk. If you already have a sea wall that cannot be removed, consider letting the sand blow and accumulate against your wall and allow a natural sand dune to develop. This dune may be eroded during periods of high lake levels, but better the lake take the sand then undermine your sea wall.

TARGET 4: MANAGING INVASIVE VEGETATION

In a beach-dune ecosystem, it is important to stop the spread of invasive plants. Invasive plants are species from another ecosystem or continent, whose introduction or spread will negatively impact coastal processes, native plants and wildlife. Their presence can even impact property values and your ability to use the shoreline.

Phragmites australis (*Phragmites*) also known as European Common Reed is Canada's number one invasive plant. The image below shows a dense stand of Phragmites. Phragmites can quickly spread along a shoreline, blocking views and access, choking out native beach vegetation, and interrupting natural coastal processes. Phragmites prefers to invade naturally wet beaches, but the invasive plant can also change the moisture content in a dry sandy beach which allows for new species more typical of a wetland to establish. Once this happens, restoration to a dry sandy beach can take years, if at all.

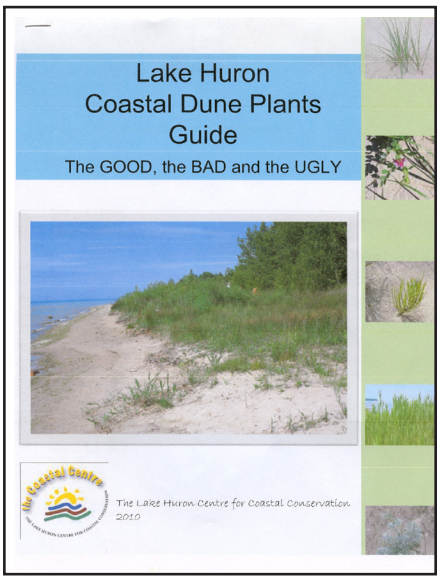
Controlling *Phragmites* before it grows into dense monoculture stands is the best option for shoreline landowners at this time. Herbicides are the quickest option, but require a licensed pesticide applicator with the proper permits and permissions for shoreline work. Repeated manual control, such as digging and removal of roots, has been proven to stress the plant and eventually it may stop growing in that location. At a minimum, shoreline residents should be cutting the seed heads, usually in early August, from the plants and disposing of them in garbage bags on an annual basis to slow the spread of the plant along the coast.

Phragmites can quickly spread along a shoreline, blocking views and beach access, and changing the moisture content in the sand. The picture on the right shows a close up of the seed heads produce by the plant.

Other non-native species that appear on the beach should be removed, but are not as high a priority because they will not impact the beach like an invasive species will. The best way to know what species are invasive, is to learn what species are supposed to be on the beach so you are able to quickly identify a new, potential invader.

The Coastal Centre has published a plant guide, "Lake Huron Coastal Dune Plants: The GOOD, the BAD and the UGLY" which can be a helpful tool.

The guide lists common native, non-native and invasive species that can be found on the shoreline and provides control options for the invasive species. This guide is available by contacting the Coastal Centre, or online at www.lakehuron.ca.



NOTE: TURF GRASS

Turf grass, used by many to create lawns, has no place along the shoreline where a beach and dune ecosystem exists. Turf grass requires large amounts of fertilizer and water to get established and grow. Since sand is porous, water carrying excess fertilizers quickly percolates into the groundwater and is carried into the lake where the added nutrients can create nearshore water quality issues such as algal blooms.

Turf grass also attracts geese. Excessive geese droppings can increase *E. coli* in the sand and the lake to unsafe levels. Native species such as beach grass do not attract geese and have deep roots that will filter nutrients and help protect nearshore water quality. Turf grass can also introduce common weeds to a beach environment which can be difficult to remove once they establish. Turf grass will not capture sand and grow a dune either, leaving your property vulnerable to changing lake conditions and causing a loss of fine sands over time.

Turf Grass & Septic System

Turf grass is not the only option available when planting above a septic system. The Coastal Centre's "Dune Planting Guide" suggests several species that will grow well over a septic bed.

If your septic bed is close enough to the house or cottage that it is sheltered from strong winds, even sand alone is a better option than turf grass.

TARGET 5: PROPER STORAGE OF RECREATION EQUIPMENT

Residents' enjoyment of the water often includes using a watercraft, and then pulling it onto the beach when returning to shore. It has become common to pull a watercraft up into the dunes to keep the beach clear for pedestrians and away from high water during storms. Storing the watercraft in the dunes for an extended period of time can damage the vegetation and structure of the dunes, so it is important to minimize this impact as much as possible. Moving the watercraft from storage to the shore and back again should be done with great care to ensure minimal disturbance. It is also important to carefully fill gas and oil tanks and properly dispose of empty containers.

NOTE: IMPROVING WATER QUALITY

"All water flows to the lake"

Rain and snow melt that runs off your property, water that goes into your septic system; and water that flows from your garden hose all end up flowing to the lake. Fertilizers and pesticides applied to your property, and anything you put down the drain, can end up as a pollutant in the lake. The more water held back and then released slowly into the sand will help reduce the amount of pollution reaching the lake. Three key messages for water management on your property:

1. Keep it clean
2. Slow it down
3. Soak it up

Proper maintenance of septic systems is extremely important to protecting water quality of both your groundwater (well water) and the lake. Septic systems should not be located close to any water course. Septic systems should be inspected annually and pumped every 3 - 5 years by a qualified septic system contractor.

Every property in the Township of Huron-Kinloss drains water into Lake Huron. The accumulation of nutrients from your property, storm water management facilities, and all other potential sources of water pollution create conditions for algae blooms. Algae blooms can ruin swimming opportunities and the enjoyment of the lake. Do your part to protect water quality.

At the beach evaluation, Coastal Centre staff will provide you with a Beach Care Toolkit and walkthrough their findings with you. Following the evaluation, you will receive the results by email that willl contain restoration recommendations. The program is able to provide some sand fencing, T-posts, and signs for participants (refer to materials available below).

It is important to confirm the work you plan to implement so that the Coastal Centre can ensure you receive the right materials. You can do this on the day of your beach evaluation, or by e-mail in reply to your results.

Also, keep in mind that any work proposed should be shared with your neighbour. It is good to keep them informed about expected changes so that they can help protect newly planted areas or perhaps your good stewardship ethic inspires them to make changes on their own property. Working together will increase efficiencies and double the positive results of your activities.

Materials available for coastal stewardship activities

INFORMATION RESOURCES

The Coastal Centre has a wealth of information on our website to assist participants with improving beach stewardship. Fact sheets, booklets, and instructional videos are available free-of-charge on the Coastal Centre website: **www.lakehuron.ca**. Additional assistance is always available by contacting the Coastal Centre.

BEACH GRASS

If your property requires beach grass, your copy of the beach sketch will illustrate how many grasses you will need and where you should plant them.

Sometimes it is best to plant in phases because sourcing beach grasses can be challenging. Working with your neighbours and your beach association to harvest local grasses using sustainable methods should produce enough beach grasses for most participants. Even small patches of grasses can be expanded over time. Beach grass harvesting is not recommended until late fall, after the plant has gone dormant for the

winter. The Coastal Centre has published a "How to plant beach grass" factsheet that is available on the website.

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BEACH HEALTH REPORT - EXAMPLE

Date	
Time	
ID #	

Name		Easting	
Address		Northing	
Beach Ass.		Lot length	
Phone Email		Lot width	

Image #	Descriptor	Image #	Descriptor
	Of cottage from water		
	Of beach from cottage		
	Neighbour north		
	Neighbour south		
	Profile north		
	Profile south		

Target	Grade	Notes
Access path		
Sand dunes		
Dune profile		
Invasive species		
Equipment storage		