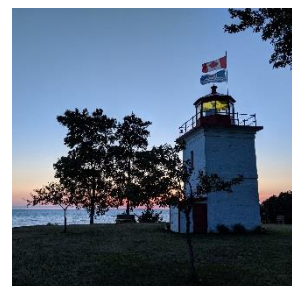
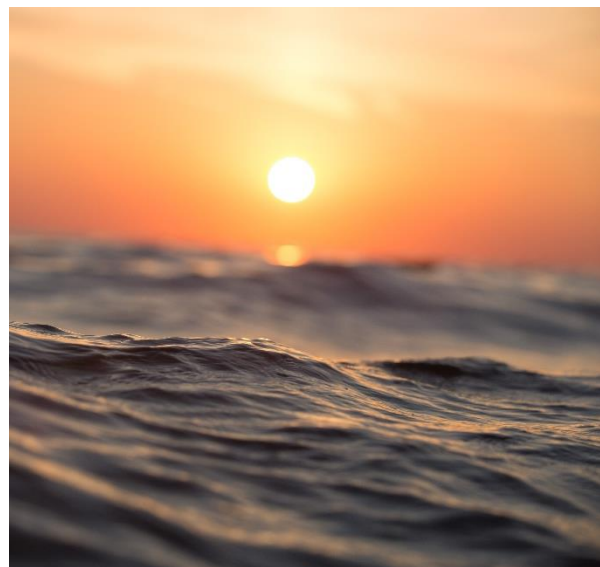


LAKE HURON CENTRE FOR COASTAL CONSERVATION



POSITION STATEMENT

Sand Dune Management at Sauble Beach

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Lake Huron Centre for Coastal Conservation

PO Box 477
Goderich, ON N7A 4C7
Canada

226-421-3029
www.lakehuron.ca
coastalcentre@lakehuron.ca

ABOUT THE LHCCC

The LHCCC is an independent non-governmental organization dedicated to the conservation and wise stewardship of Lake Huron's coastal ecosystems. It has been in operation as a registered charity since 1998. Our environmental priorities include water quality, coastal processes, biodiversity and climate change. The Centre's work is focused on coastal research, restoration, education and community outreach.

BACKGROUND

The Town of South Bruce Peninsula (TSBP) is proposing to excavate 469 m of coastal dune at Sauble Beach, west of Lakeshore Boulevard, and construct a concrete block retaining wall. The project extends from the Crowd Inn in the south to Kinloss Lane in the north. The proposed goal is to expand angled parking space to increase parking space and public safety. The TSBP submitted technical data for a permit to the Grey Sauble Conservation Authority and other government datasets. The Grey Sauble Conservation Authority permit number is GS20-363.

BEACH MANAGEMENT AT SAUBLE BEACH

Beach Management actions that repeatedly attempt to manipulate the natural size and extent of a dune feature (from both lake-side using beach grooming, and land- side using expanded parking areas) will jeopardize the natural protection it provides the Lakeshore Boulevard, and the 149 lakefront properties at Sauble Beach. This is especially true given the unknown impacts of a changing climate. High water levels combined with more frequent and stronger storm conditions will test the protection value of the dunes. If the dune feature was compromised to the extent that it fails to protect the inland development, sand on the road allowance may be the least of the future challenges of this lakeshore community. Wise management of a healthy beach-dune system is the best defense against the existing and future coastal elements related to the weather that is expected to be warmer, wetter and wilder.

Rare / Fragile - Sand beaches and dunes are rare, fragile, dynamic ecosystems, making up 2-3% of the total Lake Huron shoreline. They are also the most popular area for visitors and residents, providing a rich opportunity for tourism in communities situated on the Lake Huron shoreline. In recent studies, revenue from beach visitation was estimated at \$15-40 spent per person per day trip. With a greater demand for

beaches and dunes comes greater stress on these fragile ecosystems. It is important we balance the demands for tourism and preserving coastal ecosystems to mediate the stress of over-use.

Relics / Irreplaceable - Along parts of the Lake Huron shoreline, the sand on the beaches and in the dunes are considered geologic relics—sand which was deposited centuries ago. The majority of the sand beach and dune system at Sauble Beach is of relic material- meaning there are no sources of sand available up shore or down shore of this area in enough quantities to replace this material. The dunes are made up of fine sand, which is particularly vulnerable to erosion- both from storm waves and from wind. Sauble Beach relies on the dune’s sand reservoir to maintain its form and function. Kincardine’s Station Beach is an example of a relic sand deposit which has successfully managed both vehicle parking, vegetation and dune protection.

Function / Mobility - In order to make sound decisions in managing beach and dune ecosystems, it is critical that we understand how they function to ensure that we are not causing our beaches to degrade over time. Lake Huron’s dunes are active, moving back and forth parallel to the shoreline, growing and receding depending on lake levels, winds, and vegetation cover. Wind blown sand can cover roads and buildings such as Lakeshore Boulevard and the 31 lakefront cottages adjacent to the proposed work where vegetation is sparse.

Pedestrian Access Control – Trampling vegetation destroys vegetation which then destabilizes the dunes, increasing wind erosion and causing the dune to fail, encroaching onto roads and lakefront properties. As trails are established along frequently used routes through the dunes, the vegetation is destroyed and the wind begins to carry sand from the exposed area. The continual loss of sand deepens the trails, and with a greater open sand area exposed to wind erosion, a blowout or washout may develop carrying sand inland. This inland blowing of sand can result in substantial maintenance costs to the town as it forms drifts on the roads, covers lawns and gardens, and clogs storm drains. These blowouts can also allow storm waves to erode much larger segments of the shore.

Invaluable - The value of a beach and dune system as shore protection has been estimated at about \$3,000 per linear metre. This does not include the aesthetic value of the dunes, important to tourism, and wildlife habitat. Sand dunes also act as a natural water filter, and reduce road and property maintenance costs by preventing sand drifting. Healthy dunes provide ‘free’ shore protection against flooding and windblown sand, and losses of sand from the beach-dune system represent a loss to this protective capacity during storm events. By conserving its dunes, the community of Sauble Beach is preserving a multi-million-dollar asset which provides shore protection to Lakeshore Boulevard and the approximately 149 lakefront cottages.

Changing Climate – water levels - We are living during a high-water level period in a changing climate on Lake Huron, where millions of dollars are being spent by municipalities to protect coastal properties and municipal waterfronts. The average cost of properly designed and installed hardened protection was \$2,000 per linear metre in 2004, and has increased since then. It has become especially apparent recently

that coastal communities who retained a healthy dune system buffer do not have costly infrastructure (such a roads and parking) damaged from the impacts of above average water levels.

Changing Climate - ice cover - In addition, reduced ice cover in early and late winter will impact sandy beach and dune systems as a result of increased frequency of intense storm events generating high waves and storm surges. Storm events and surges increase the probability of major dune erosion, particularly during periods of high lake levels. Under these conditions, there is increased potential for wind blow-outs, wave attack and barrier breach, particularly at vulnerable locations where dunes are being compromised by excavation. If this occurs, the ability of the dunes to protect inland areas from lake forces is lost.

Collaboration - Many Lake Huron jurisdictions with significant public beach use have not embarked on the extraction or excavation of dune systems to increase parking, and control traffic (e.g. Ipperwash Beach). It is recommended that beach managers consider alternatives to increase parking, and public safety while working with local groups and Saugeen Ojibway Nation to develop a sound long-term beach management plan for this section of the waterfront.

Examples - The needs of tourism and beach visitors can be mitigated to benefit the coastal environment with little to no impact to the economic wellbeing of the community. Kincardine Station Beach has been a recent example that dune conservation and tourism are not mutually exclusive, and that dunes and the presence of dune vegetation on a well-managed shoreline can improve the visitor experience.

Resources / Advice - The Lake Huron Centre for Coastal Conservation developed a beach management plan for Sauble Beach in 2004 which can be viewed at www.lakehuron.ca/stewardship-plans-and-guides. We encourage the decision-makers from the Town of South Bruce Peninsula to revisit this plan when developing an updated beach management strategy, and we would like to offer our support in developing a scientifically-sound plan that strives to accommodate the needs of the beach-dune system while maintaining public parking for beach recreation and tourism. Stewardship efforts will not only ensure a healthy beach ecosystem and allow Species at Risk to thrive, but will help improve the waterfront-based economy of Sauble Beach. The Lake Huron Centre for Coastal Conservation encourages those interested in learning more about beaches and dunes to visit www.lakehuron.ca/beaches-and-dunes or to contact coastalcentre@lakehuron.ca.

REFERENCES

Zuzek, P., Byrne, M.L., 2020. Independent Review of the Sauble Beach Dune Retaining Wall. Prepared by Zuzek Inc.

The Lake Huron Centre for Coastal Conservation., 2019. Coastal Action Plan for the Southeastern Shores of Lake Huron. Goderich, Ontario. 297pp

Peach, G.H., 2007. Conserving a Delicate Balance. Management Plan for the Dunes at North Sauble Beach, Ontario. Prepared by the Lake Huron Centre for Coastal Conservation for Friends of Sauble Beach.

The Lake Huron Centre for Coastal Conservation., 2004. Sauble Beach Management Plan. Prepared for the Friends of Sauble Beach.

Note:

Peach, G.H., 2007 report covers 6th street to the Sauble River

The Lake Huron Centre for Coastal Conservation., 2004 report covers Main Street to 6th street

