On The Front Lines:
Strategies for Healthy Beaches in Nova Scotia

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Nova Scotia’s beloved beaches are in trouble. This document outlines the Ecology Action Centre’s seven goals for better beach management that can help guide a much-needed coastal strategy for Nova Scotia. It is time to draw bold lines in the sand - we need to protect beaches so that they can continue to protect us.

From the low-lying reddish sand shorelines along the Northumberland Strait to the high, white dunes of the southwest shore, Nova Scotia’s coast is adorned with an astonishing diversity of beach systems. Intricate and beautiful, they are also one of our province’s most valuable assets. Residents and visitors greatly value their access to healthy beaches for recreation, tourism and shellfish harvesting.

Offering more than just suntans, clambakes and sandcastles, these systems form a buffer between land and sea, protecting us from storm surges and the impacts of climate change. They provide critical habitat for many uniquely adapted species, from the Tiger Beetle (*Cicindela marginipennis*) to the Piping Plover (*Charadrius melodus melodus*).

Beaches – especially sandy systems – are extremely sensitive to human impacts. Yet healthy beach systems are also amazingly resilient, absorbing and dissipating energy from wind, waves and weather. A synthesis of available information about Nova Scotia’s beach systems and management can be found in the Ecology Action Centre discussion paper *True Grit: A New Vision For Healthy Beaches in Nova Scotia* (available online).

What is A Beach Exactly?

Though we often imagine a beach as a simple accumulation of sand, gravel or cobble along the shore, beaches are actually much more. These dynamic and interconnected coastal systems stretch underwater to offshore sand bars, and often include dunes, salt marshes, and lagoons or barachois ponds on the landward edge. Healthy beaches rely on new supplies of sand and gravel stored elsewhere on the coast to help them respond to coastal change. The same sediments that fall from eroding coastal cliffs to become beach sand may later become the building blocks of a nearby salt marsh.
Beaches are on the front lines of climate change in Nova Scotia, yet they are not adequately protected. Accelerated erosion and habitat degradation are already threatening their natural functions and processes, while land use changes threaten public access. In turn, our human-made beach infrastructure, including roads and boardwalks, is becoming increasingly susceptible to damage.

Situated between land and sea, beaches often fall into a ‘bureaucratic black hole’. Several government departments have beach management responsibilities, including testing water quality, promoting tourism, reviewing proposals, and protecting biodiversity. However, no lead agency is accountable for the overall health of Nova Scotia’s beach systems. Nova Scotia needs a bold new approach to beach management that considers the whole ecosystem. Healthy beaches need room to move and respond to wind, waves, and climate change. The sensitive wildlife and plant species that bring life to the beach system need protection from disturbance. Finally, people need beach access to continue to responsibly enjoy our shores, whether for swimming, surfing, bird watching or shellfish harvesting.

Throughout 2008, the Ecology Action Centre researched Nova Scotia’s beaches and beach management in other places. Based on this work, the report outlines seven key goals for better beach management and clear actions for each.

Adapting to a Changing Climate

Our climate is changing. Human activities—notably the burning of fossil fuels—are the dominant causes of global warming. Forecasted impacts include shifts in precipitation patterns, more storms, and accelerated coastal change. As winters warm, sea ice cover diminishes, reducing protection of beaches from winter storms. It is also predicted that sea level will rise by 70 centimetres by the year 2100. As sea level rises, beach systems respond by moving inland, a process known as landward migration.

Accelerated changes are already happening across Nova Scotia, especially where coastal development prevents or limits natural beach migration. One of the best ways to prepare for the changing climate is to adjust land use along the coast where possible, to give beach systems a chance to move, respond and, in turn, protect us (Lemmon et al, 2007).
Goal #1: Nova Scotia's beaches and coastal systems are protected by strong, enforceable laws

Beach management in this province needs clear direction and enforceable laws to maintain natural shoreline processes, healthy habitats, and responsible public use. Current laws are outdated and fail to recognize beach systems as critical coastal features. Nova Scotia needs consistent coastal policies, legislation, and regulations that can address beach management problems such as intense coastal development, declining water quality, dwindling wildlife, illegal vehicle use, accelerated erosion, and loss of public access.

How to Get There

• **Set clear direction** for beach management in the Sustainable Coastal Development Strategy and other relevant policies.
• **Provide special protection** for ecologically significant beaches using a modernized Beaches Act, the Special Places Protection Act, or other conservation legislation.
• **Expand the definition** of beaches in the Beaches Act to include linked coastal features such as salt marshes, lagoons and barachois ponds.
• **Create and implement** management plans for important beach systems — including protected beaches, those in provincial parks or protected areas, or with diverse users, extensive dune systems, important wildlife or key clamming areas.
• **Use municipal planning strategies** to achieve beach management goals like assuring public access, protecting biodiversity and species at risk, and reducing the impacts of coastal development.

92 beaches across Nova Scotia are currently protected under the Beaches Act.

The Sustainable Coastal Development Strategy

As announced in June 2008, the government of Nova Scotia will develop a Sustainable Coastal Development strategy by 2010. The strategy will focus on six themes, including coastal access, water quality, storm surges and climate change, coastal habitat and ecosystems, coastal development, and working waterfronts. The Sustainable Coastal Development Strategy can also provide a clear direction for better beach management by recognizing beach features and natural processes as key coastal components and making their management and protection a priority.

Beaches should also feature prominently in other emerging provincial strategies such as the Natural Resources Strategy, the Climate Change Action Plan, and the Water Resources Management Strategy.

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Beaches need to room to move and change. These dynamic coastal systems are continually re-shaping themselves in response to shifting winds, waves and other natural forces. This flexibility is a key coastal function, allowing Nova Scotia’s beaches to act as a powerful buffer from the damaging effects of storms.

However, beaches are also very sensitive to human impacts. Infrastructure built in or close to the beach can disrupt the natural buffering ability of these unique coastal systems. Poorly planned and sited coastal development in Nova Scotia has already led to accelerated beach erosion and increased vulnerability to climate change.

**Goal #2:** Beaches of Nova Scotia have room to respond to coastal change.

**How to Get There**

- **Enact policy, legislation and development regulations** that recognize beaches as dynamic, interconnected systems which require sediment from other coastal features.
- **Develop (and build on existing) partnerships** to monitor erosion and shoreline change across the province.
- **Make shoreline change data publicly available** to municipalities, planners, and coastal property owners.
- **Increase public ownership** and protection of properties next to protected beaches, islands and provincial parks.
- **Create mandatory setbacks** to provide buffer areas for beaches and other coastal features.
- **Educate property owners and developers** about alternatives to seawalls and groins to minimize loss of property and retain natural shoreline processes.
Goal #3: Diverse wildlife and vegetation communities thrive on Nova Scotia’s beach systems.

Nova Scotia’s beaches are picturesque and enjoyable for human visitors – but they also serve as crucial habitat for a variety of vegetation and wildlife communities. These specially adapted species are often sensitive to human impacts, and require healthy, well-managed beaches to thrive. Valuable in their own right, beach species also contribute to vital coastal biodiversity and are valuable indicators of water quality and overall ecosystem health.

Alarmingly, many of our treasured beach species are experiencing serious population declines, including the endangered piping plover. Managing for healthy wildlife and vegetation communities on our beaches requires that beaches are understood as intimately connected living systems.

How to Get There

- **Develop provincial coastal policy, legislation and management regulations** that give high priority to wildlife habitat, vegetation and biodiversity protection.
- **Identify and monitor key indicators** for beach ecosystem and wildlife health.
- **Take aggressive action** to recover Species At Risk on Nova Scotia’s beaches.
- **Reduce human disturbance** on the most sensitive beach habitats, including dunes, breeding and wintering grounds, and migratory stop-over sites.

### Disappearing Shorebirds

Shorebirds that nest on beaches are highly adapted to a harsh environment of shifting sands and sparse vegetation. In the past, when a beach breeding ground eroded or degraded, beach-nesting birds moved to a better site. Today, habitat loss and degradation caused by coastal development and recreation has forced birds to lay their eggs, as the expression goes, in fewer baskets.

Many of Nova Scotia’s shorebirds are suffering serious population declines, including the Endangered Piping Plover (Charadrius melodus melodus), listed as endangered since 1985. Alarmingly, Piping Plover populations have declined by over 25% since 1991. With only 40 or so known breeding pairs, the need for action is urgent.
Nova Scotians have a longstanding relationship with beaches. One legacy of this connection is the value that residents place on their access to the shore. Because 95% of the provincial coast is privately owned, changes in land use patterns along the shore can cause access-related conflicts.

The privilege of coastal access brings responsibility. After all, increased access holds the potential for increased foot and vehicle traffic, wildlife disturbance, litter and degradation of an already fragile ecosystem. Carefully designed beach access can contribute to the economic well-being of coastal communities, allowing residents and visitors to explore and appreciate local beach systems.

How to Get There

- **Assemble a comprehensive inventory** of public beach access points.
- **Develop and enforce standards** for access points and infrastructure at public beaches so that parking lots, roads, and boardwalks do not disrupt beach habitats and shoreline processes.
- **Limit beach access points** to protect habitat and shoreline processes – closing sections as necessary.
- **Work with developers and municipalities** to ensure that new property developments respect traditional access by communities.
- **Strictly enforce key beach protection legislation**, including the Beaches Act, Wildlife Act, Species at Risk Act, Parks Act and Off Highway Vehicles Act.
- **Partner with tourism operators and recreation managers** to promote low-impact beach recreation and coastal stewardship.
- **Monitor all recreational swimming beaches** to ensure they meet minimum water quality standards.

During July and August 2008, the Nova Scotia Lifesaving Society counted over 260,000 visitors on just 21 supervised beaches.
Goal #5: Nova Scotia’s communities are directly involved in beach management.

Citizens have important local knowledge, passion and ideas about protecting the well-being of Nova Scotia’s beaches. Communities need to play key roles in beach stewardship and management. Government agencies responsible for beach management need to build capacity to work effectively with concerned citizens and community groups. Government departments are under-resourced and require on-the-ground help to achieve beach management goals.

How to Get There

- Fund non-governmental organizations, community groups, and universities to create and run beach education and stewardship programs.
- Promote best practices for community engagement among civil servants.
- Create an ongoing beach research and advisory network with community representation to oversee beach management in Nova Scotia.
- Engage community members in the development of management plans for specific beaches.

Digging for Treasure

Though a day at the beach may mean sunbathing or bird watching for some, for others it is a day of hard work. Shellfish harvesting, especially “clamming”, is an important recreational and commercial activity that has long taken place on many of Nova Scotia’s beaches. The soft-shelled clams (Mya arenaria) and quahogs (Mercenaria mercenaria) sought by harvesters are not only delicious steamed and dipped in butter – they are also sensitive filter feeders, making them excellent indicators of beach health.

Unfortunately, sewage and septic contamination has compromised beach health and water quality in many important clamming areas, with serious implications for the province’s shellfish harvesting industry. The number of closures has more than doubled in Nova Scotia over the past 15 years at an estimated cost of $8 million each year in lost revenues (Charles et al., 2009).
Goal #6: Relevant beach management information is available and widely used.

There is no network to coordinate beach research activities and outcomes in Nova Scotia. Agencies and individuals that collect beach data lack an obvious way to share it, thus important information about coastal erosion rates, shorebird populations and water quality is often inaccessible to planners and decision-makers.

Investing in comprehensive beach research and interdisciplinary monitoring is crucial to get a full picture of overall beach health in Nova Scotia. Accessible beach information would reduce costs of property damage, storm damage and the maintenance of shoreline protection structures. Research and monitoring projects also educate and engage government, universities, and communities, and promote coordination and cooperation.

How to Get There

- Establish a provincial beach research and advisory network hosted in a university or government agency.
- Organize a forum for beach researchers, academics and decision-makers to share information and resources and to identify key Nova Scotia beach research questions, as well as strategies to address them.
- Make existing information about Nova Scotia’s beach systems more accessible to coastal managers, beach users and community groups, using tools such as websites, maps and easy-to-use databases.
- Increase funding and support for community-based research and monitoring programs.
Goal #7: Leaders work together to protect and promote beach health.

Nova Scotia is operating without a blueprint for beach management. The provincial government currently lacks a clear direction for Nova Scotia’s beaches, as well as the leadership, commitment and resources to make good beach management happen. This has lead to the degradation of beach systems, declining wildlife populations, damage to coastal infrastructure, and recurrent conflicts among users. Nova Scotia needs a government department to champion healthy beaches and provide consistent guidance, work effectively with other departments, make key policy changes and enforce existing regulations. It is time to identify opportunities to move forward immediately on key issues, and set priorities for action over the longer term.

How to Get There

- Identify and nurture beach champions within government and communities.
- Establish an interdepartmental beach research and advisory network to set priorities for beach management and to facilitate information sharing and joint decision-making.
- Increase financial and human resources to coordinate and implement beach management activities.

Where to Start

- Multi-stakeholder beach research and advisory network.
- Modernized Beaches Act.
- Additional beach specialists within the Department of Natural Resources.
- Increased enforcement of existing beach rules and regulations.
Everyone has a role to play in protecting our beaches!

The Ecology Action Centre has acted as a voice for Nova Scotia’s environment for over 37 years. The Centre’s Coastal Issues Committee promotes sustainable coastal communities and the protection and management of Nova Scotia’s coasts.

This report is part of an Ecology Action Centre project on better beach management, which involved a discussion paper and a stakeholder’s workshop, taking place between January and December 2008. Read the full discussion paper, available online at: http://ecologyaction.ca/content/coastal-issues-committee-publications or by contacting beach@ecologyaction.ca.

Get involved in a stewardship project at your favourite beach. Beach clean-ups, shorebird monitoring are great ways to help keep our beach systems healthy.

Join a local community group or non-governmental organization working on coastal issues. The Coastal Coalition of Nova Scotia has a list of active groups at http://ccns.chebucto.org

Participate in public consultations about the future of Nova Scotia’s coasts, water, and other natural resources.

Express your hopes and concerns to our key coastal decision makers:

A) The Provincial Oceans Network - Developing the emerging Sustainable Coastal Development Strategy. hustonje@gov.ns.ca / (902) 424-2996

B) Parks Division of the Department of Natural Resources – Responsible for much of the current management happening in Nova Scotia’s beaches. carrolhe@gov.ns.ca / (902) 662-5062

C) Your local MLA and municipal councillor.