

The ULTIMATE (NOVA SCOTIA) Coastal Property Owners Checklist

So, you want to own coastal property? Coastal property isn't just any ordinary piece of land. With it comes dynamic features and considerations that a prospective land owner must take into account! First, take a *good* look at the property. Walk around. Touch the soil. Get your boots wet. Talk to previous owners and neighbours. Most importantly, do your research.

Nova Scotia's coast is one worth protecting, and it starts with you!

<i>Consideration</i>	<i>Description</i>	<i>Resources Available</i>
FUNDAMENTAL		
What is the general size and impression of the property?	By observing and recording the current size, boundaries, and conditions of the property, you will develop a better understanding of the property and can monitor any changes into the future.	<ul style="list-style-type: none"> a) Become aware of the property boundaries by consulting your deed and property documents, and looking for the property markers around the property b) Confirm the property boundaries by consulting the deed and measuring on the ground c) Walk around the property and take note of the topography, slope, shape, and texture of the ground d) Walk around the property during or shortly after a heavy rainfall to take note of where water flows and pools
What kind of coastal ecosystem is present on the shoreline?	Coastal ecosystems like beaches and dunes, wetlands, and eel grass beds are the best protection of property from waves and storms. Different ecosystems offer different kinds of shoreline protection and ecological services. Land alteration or shoreline hardening can adversely affect natural habitat and coastal processes.	<ul style="list-style-type: none"> a) The Nova Scotia government has produced a fact sheet on sensitive coastal ecosystems and habitat that can be accessed at www.gov.nsc.ca/coast b) Search Nova Scotia Department of Natural Resources "Shore Zone Characterization" maps (available for some areas) at: http://gis4.natr.gov.ns.ca/novascan/DocumentQuery.faces c) You can find guides to wetland identification, as well as the Nova Scotia wetlands inventory at: http://www.novascotia.ca/nse/wetland/
LEGISLATION AND REGULATION		
Is the property near a proposed park or protected area?	Many areas in Nova Scotia have formal legal designations, such as Wilderness Protected Areas or nature reserve that may require special land management measures on adjacent lands in order to preserve the landscape, resources or historical significance.	<ul style="list-style-type: none"> a) Consult Nova Scotia's interactive Parks and Protected Areas map at: http://www.novascotia.ca/parksandprotectedareas/plan/interactive-map/ b) Consult your local Municipal Planning Strategy
Does the property title include a	Property owners can protect their land through a conservation	<ul style="list-style-type: none"> a) To find out Nova Scotia's regulations about conservation easements:

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conservation easement?	easement: a legally binding agreement between a landowner and a conservation organization or government conservation agency that applies to the title of the land and its future uses.	http://novascotia.ca/natr/land/conservation-easements.asp b) For more information and frequently asked questions about conservation easements: http://nsnt.ca/pdf/conservation_easements.pdf
WATER QUALITY		
Does the property have a well?	Wells are vulnerable on coastal properties due to the risk of salinization and contamination. Whenever possible, it is important to have a thorough analysis of your water quality, including getting the well checked for cracks, leaks, and increased levels of minerals or contaminants. Drinking wells should be tested every two years for bacteria, any chemicals of concern (e.g. arsenic, uranium, nitrates, salts).	a) Consult NS Environment before building a well to confirm regulations, setbacks, and how to maintain and test water quality, at: http://www.novascotia.ca/nse/water/privatewells.asp b) The QEII Hospital in Halifax offers a variety of water quality testing packages, with simple to more thorough options ranging in cost from \$62-\$242. The basic package tests for arsenic, uranium, and bacteria. For a list of water testing labs in Nova Scotia: http://www.novascotia.ca/nse/water/waterlabs.asp
Does the property have a septic system or lagoon?	Property owners must exercise caution when they install septic systems near the coast, to avoid any leaking and contamination. There are provincial regulations about the minimum distance between a septic system and any water body, or drinking water supply.	a) Read up on wastewater-septic system regulations in Nova Scotia at: http://www.novascotia.ca/nse/water/docs/droponwaterfaq_wastewater-septic.pdf b) Properties in some areas in Nova Scotia are eligible for a free and confidential home visit and visual inspection of their septic system, well head, and oil tank: http://clean.ns.ca/programs/water/ehap/
Does the property have an oil storage tank?	Coastal property owners must be particularly cautious with storage tanks that store hazardous liquids, because of the damage any leaks would cause to water quality in adjacent water bodies.	The Insurance Bureau of Canada has some resources pertaining to home insurance policies for oil tanks, maintenance recommendations, and considerations, as well as an Atlantic help department: http://www.ibc.ca/en/Home_Insurance/documents/brochures/Oil%20Tank%20Tips%20brochure_EN.pdf
EROSION		
Is there a history of erosion? What are the erosion trends?	Erosion is a natural process that helps shape the coast, especially features such as beaches. However, many property owners are worried about erosion risk to their property and home. By understanding how the shoreline has changed in the past, you can get an idea of how it might change in the future.	a) Aerial photos: Nova Scotia government has a database of historical aerial photos periodically since 1950 available for print or online at: http://gis8.nsgc.gov.ns.ca/DataLocator31ASP/Search.aspx?typeofaction=login b) More info about NS aerial photo library at: https://www.novascotia.ca/snsmr/pdf/geomatics-civic-addressing-aerial-photos.pdf c) Ask a neighbour or the previous property owner about long term changes along the coast

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<p>Does the property include a bank (near vertical, vertical, or undercut)?</p> <ul style="list-style-type: none"> ➤ If yes, are there slumped trees or vegetation present? 	<p>Near vertical, vertical, and undercut banks are signs that an eroding bank may indicate an unstable shore. If you notice vegetation at the bottom of a bank that appears to have once been at the top, then the bank is likely eroding quickly. If the face of the bank is barren soil, it is not hospitable for vegetation at this point in its evolution, and is likely unstable.</p>	<p>The following is a series of photos and descriptions depicting examples what an eroding shoreline might look like: http://www.wetland.org/07_images/restoration/shoreline/erosion.html</p>
<p>Is the shoreline bedrock stable?</p>	<p>A landscape is typically comprised of two types of material: bedrock overlain by surficial material. Bedrock is consolidated rock that can sometimes be seen at the surface and is called a bedrock outcrop, where there is no surficial material on top of it. Some bedrock have properties that make them more vulnerable to erosion, while others are much stronger.</p>	<p>a) Geological Map of the Province of Nova Scotia and Legend from: http://www.novascotia.ca/natr/meb/download/dpo43dds.asp b) Look into the properties of the bedrock beneath your property. Look for keywords related to weathering, fracturing, solubility, oxidization, c) Consult a geologist</p>
<p>Is the shoreline surficial material stable?</p>	<p>Surficial material is unconsolidated rock typically comprised of the types of rock underneath it and in the region, and typically covers the bedrock. Some surficial material is more vulnerable to erosion, while other types are more resistant.</p>	<p>a) Surficial Geology Map of the Province of Nova Scotia from: http://www.novascotia.ca/natr/meb/download/mg/map/html/map_1992-003.asp b) Look into the properties of the surficial material on your property. Look for keywords related to weathering, texture, compaction, permeability, c) Consult a geologist</p>
<p>Is there a vegetative buffer along the shoreline?</p>	<p>A vegetated buffer is an area of natural or established (planted) deep rooted vegetation beside the coast or a watercourse that helps protect the water quality and slows erosion.</p>	<p>a) For examples of strong and poor vegetative buffers, and for a description of their value and maintenance: http://www.bae.ncsu.edu/programs/extension/wqg/sri/riparian5.pdf b) The Ecology Action Centre encourages a Living Shorelines approach to restore coastal habitat and stabilize banks. For brochures, videos, and other resources, please visit our Living Shorelines Toolkit at www.ecologyaction.ca/livingshorelines</p>
<p>Are there structures to control erosion on your or your neighbour's shoreline?</p> <ul style="list-style-type: none"> ➤ If yes, is there evidence of damage to 	<p>Erosion control structures, such as armouring and groynes, have an effect on adjacent shorelines. If the structures are degrading or failing, they indicate that the shoreline is not stabilized and that other erosion management</p>	<p>a) Consult the previous land owner and neighbours b) Look into possible shoreline structures to mitigate erosion and their influences at: http://www.csc.noaa.gov/archived/beachnourishment/html/geo/shorelin.htm</p>

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them?	measures may be required.	
Is the property located on a sheltered harbour or bay? Is the property facing open ocean? How wide is the fetch affecting the property?	Fetch is the distance traveled by wind or wave across open water. Fetch is lessened in sheltered areas compared to open ocean, Where wind and wave are more intense and land more exposed. If there is a large area of open water in front of the property, the risk of erosion is high.	You can calculate fetch with the help of hydrographic charts from the Canadian Hydrographic Service at http://www.charts.gc.ca/index-eng.asp
What is the direction of prevailing winds?	You can mitigate the effects of strong winds on your property by strategically stabilizing shorelines through vegetation.]	a) Consult Environment Canada climate trends for monthly wind speed and direction averages at: http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?stnID=6465&prov=&lang=e&dCode=4&dispBack=1&StationName=shearwater&SearchType=Contains&province=ALL&provBut=&month1=0&month2=12
Has the area been hit previously by any major or minor storms, and how frequently have they been occurring?	Knowing storm trends will help inform you of how strongly you will need to protect the property from storms.	a) Ask your neighbours b) The Geological Survey of Canada has storm damage reports available at: Coast Net
FLOODING		
Are vulnerable structures (main access road, basement, crawl space, main floor, septic system, and well) elevated at least <i>4m above sea level</i> and at least <i>30m back from high tide level</i> ?	Better safe than flooded! Sea level rise and storm surge can flood the coast unpredictably through risen tide levels and wave run-up. The higher and farther back the vulnerable structures on the property, the safer they will be from flooding.	a) Double check your local planning strategy and by-laws for structural set-backs to ensure you're meeting the minimum legal requirements. b) Consult an elevation map for your area c) The recommended vertical or horizontal buffer or setback will vary depending on the geology, exposure, and condition of the property. Sea level rise will also increase the vulnerability of many properties. Consult with a professional coastal geologist and/or municipal planning before deciding where to local structures on your property.
Is the property on a floodplain or vulnerable to future sea level rise and storm surge?	Low-lying areas are more vulnerable to sea level rise and storm surge, even if they are upriver from the ocean.	a) Search Nova Scotia Department of Natural Resources "Coastal Flood Risk from Sea Level Rise and Storm Surge" maps (available for some areas) at: http://gis4.natr.gov.ns.ca/novascan/DocumentQuery.faces b) The following report details sea level rise and storm surge projections for Nova Scotia communities over the next 100 years at 25 year intervals: https://www.novascotia.ca/nse/climate-change/docs/ScenariosGuidance_WilliamsDaigle.pdf
Are there any flow-	Water control structures will	

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control structures further up the watershed or immediately below your property, such as a dam or weirs?	affect how water moves, spreads, and floods an area. It is important to be aware of what structures are in place and how they might affect the area and your property.	
G E O H A Z A R D S		
Is there a history of mining on or near the property?	Mining sites can leave behind harmful tailings on and adjacent to the site and in nearby water bodies. Abandoned mine shafts can be left open and can be very inconspicuous.	<p>a) Reference Nova Scotia Department of Natural Resources "Historical Gold Mining Areas" Maps to see the extent of places that have been previously mined for gold at: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2009-001.asp</p> <p>b) Look for abandoned mine shafts on Nova Scotia's Department of Natural Resources interactive Geology map at: http://gis4.natr.gov.ns.ca/website/nsgeomap/viewer.htm?box=425240:4923000:531000:4994000&ActiveLayer=19&Layers=100000000000000010111100101111111000000010011</p>
Are there elevated levels of certain minerals or chemicals on or around the property (such as uranium, iron, or arsenic)?	Some minerals in excess can be hazardous to health through air or groundwater contamination.	<p>a) The same interactive Geology map also has information about mineral occurrences: http://gis4.natr.gov.ns.ca/website/nsgeomap/viewer.htm?box=425240:4923000:531000:4994000&ActiveLayer=19&Layers=100000000000000010111100101111111000000010011</p> <p>b) The Department also has an interactive map of "Mineral Resource Land-Use" with similar and valuable geological considerations at: http://gis4.natr.gov.ns.ca/website/mrlu83/viewer.htm</p>
W I L D L I F E & E C O L O G Y		
What kind of wildlife is found on or near the property?	Even wildlife that we do not think of as being coastal, such as foxes, live along and use the coast.	<p>a) Walk around the property and look for footprints! You can find a list of potential wildlife that can be found across Nova Scotia at: http://novascotia.ca/natr/wildlife/wns/wns7f.asp</p> <p>b) You can find a list of species in Nova Scotia at risk, that are protected under the NS Endangered Species Act at: http://novascotia.ca/natr/wildlife/biodiversity/species-list.asp</p> <p>c) For excellent information on how property owners can care for wildlife on their coastal properties. Healthy Beaches and Dunes in Nova Scotia: http://www.birdscanada.org/volunteer/nsplover/NSHealthyBeaches.pdf</p>
Are there any types of rare or endangered vegetative species?	Coastal vegetation is different than inland vegetation in that it typically thrives off of different nutrients and is under different	<p>a) Massachusetts Department of Energy and Environmental Affairs has an excellent guide to the importance of coastal vegetation called StormSmart Properties</p>

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	stresses. It is important to understand how to care for coastal vegetation and what the tolerance is for survival.	http://www.mass.gov/eea/agencies/czm/program-areas/stormsmart-coasts/coastal-landscaping/

This information was collected by Sarah MacKelvie, on behalf of the Ecology Action Centre.

The information in this document should be used as advice only. We encourage further research and consultations with geologists and your local government to find out more.

Draft 4 prepared 2014.08 by Sarah MacKelvie