

# Carron Point: Life in a Coastal Ecosystem

Taking steps toward a sustainable community plan

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Université de Moncton



**Social Economy and Sustainability Research Network**

**Partenariat sur l'économie sociale et la durabilité**

Bridging, Bonding, and Building / Renforcement des liens et des capacités



**Your Environmental Trust Fund at work!**

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**The committee wishes to thank the City of Bathurst, and the residents from Bayshore Drive and Carron Point for their partnership and support of this project.**

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# 1. Introduction, Purpose & Background

Nearly 60% of the population in New Brunswick (NB) live within 50 kilometres of a shoreline (*source: A Coastal Areas Protection Policy for New Brunswick*). Coastal areas in NB support economic activity, provide spaces for recreation, support a rich diversity of plants and wildlife, and are an integral part of NB's culture and history.

There is continually increasing pressure for development within these coastal areas. Adding more risk to coastal development is the threat of extreme weather and rising sea levels associated with climate change. In order to take a proactive approach to these potential threats, it is imperative to examine sustainable approaches to development along NB's dynamic and vulnerable coastal ecosystems.

An important step in examining sustainable approaches to development is cooperative planning among stakeholders. These include individual property owners, community and regional representatives, and scientific experts. By working together in the planning and development phase all groups gain improved protection of coastlines for the future.

Nature plays a role in both creating and altering land and water formations. This is not always for the better from a human perspective. As a result, coastal residents often use erosion protection measures to protect from or correct these changes. Constructing such an erosion barrier along waterfront property is a complex permitting and design issue.

Residents of Bayshore Drive on Caron Point recognize that in order to maintain their shoreline, they must work together to examine best practices for erosion protection. Subsequently, the Carron Erosion Study Team & Steering Committee was formed.

This document is a summary of the committee's research on best practices for erosion control in NB. It is the hope of the committee that the information will be of assistance to landowners in the Carron Point area as well as other coastal landowners and communities in NB.

## Background

In 2007 a voluntary group of residents, researchers from Université de Moncton, and representatives from the City of Bathurst, NB Department of Natural Resources, and Bathurst Sustainable Development agreed to openly discuss shoreline erosion in the Carron Point area near Bathurst, NB.

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The group was formed as a result of underlying issues including: beach access, beach quality, and unintentionally created accelerated erosion resulting from erosion control structures. The goal of the group was to identify the most urgent erosion issues and to develop sustainable solutions.

## **Purpose**

- To promote awareness of sustainable approaches to living in a coastal area, with emphasis on erosion control approaches
- To share information collected during a study on beach erosion at Carron Point conducted between 2007 and 2009
- To provide technical background information and terms used in the permitting process
- To provide a pro and con list for common erosion protection structures
- To answer some common questions residents and community members have regarding coastal erosion

## **Objectives**

1. Identify the perception of residents towards erosion, the types of coastal structures to use, and actions to find common solutions;
2. Evaluate the erosion rates along Carron Point using aerial photographs;
3. To present an overview of the advantages and disadvantages of existing protection structures and approaches;
4. Provide support for decision-making and community capacity by leading a number of focus group discussions in the community.

## **2. Ecosystem Features**

**C**arron Point is a coastal residential development. In addition to the residential community, it hosts a diverse natural community that includes a variety of wildlife species, and some unique ecosystem features.

These features include: beaches, dunes, coastal salt marshes, intertidal areas, & rock platforms. The unique coastal salt marshes in the Carron Point area cover over 40 hectares (98 acres). The map below shows the beaches and dunes (in yellow), and the salt marsh area (in pale green) that comprise Carron Point.

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### 3. Coastal Dynamics

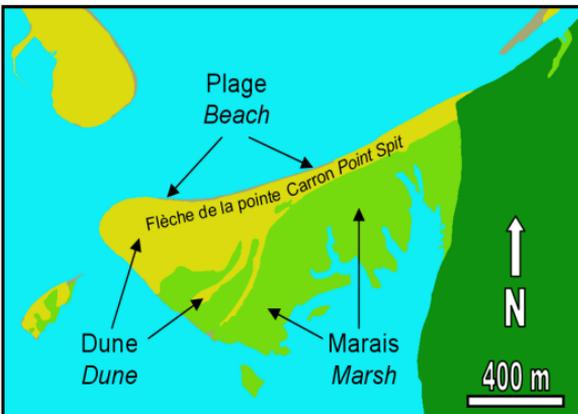
#### What have we learned from research at Carron Point?

The Carron Point area is a low-lying coastal spit, which is generally narrow (<300 meters wide) except at its western tip. The point itself is actually formed by a sand dune with a neighboring salt marsh that has formed as a result of the dune. Since the point is sand-based, dune protection and restoration are a priority.

Dune protection requires that the natural sand supply (from wave action and tidal currents) not be interrupted. The dunes are the largest and most effective source of erosion protection for the area. By comparing aerial photography from 1939 to current conditions, the study group determined that the dunes and beaches at Carron Point have changed markedly over time. The end of the sand spit has increased more than 70 meters seaward from natural sand deposition (also called littoral drift) since 1939.

To the east of Carron Point, the Belloni Point cliffs show an uneven landward retreat. The point itself retreated at a slower rate than adjacent sections and the curved coastline is more pronounced than in 1939. The section of shoreline between the Belloni Point cliffs and Carron Point (where the Bass River drains) has a more complex shoreline dynamic. The littoral drift coming from the east carries sand coming from the eroding Belloni Point cliffs. The result is the formation of a coastal spit that over time increases in length parallel to the coast towards the south-west.

Subsequently, the Bass River outlet is displaced by the emerging “Bass River spit” which in turn prevents the Bass River from flowing directly into Nepisiquit Bay. The Bass River spit can increase in length and its tip sometimes attaches to the coast. When a such a breach forms, it forces the displacement of the mouth of the river, as observed on maps from 1944 and 2007.



**Ecosystem features at Carron Point. The yellow highlights the beaches and dunes. The salt marshes are displayed in pale green.**

*Source: Extracted from Service New Brunswick 1998 Digital Topographic Data Base (DTDB98); produced by the New Brunswick Department of Natural Resources Geological Surveys Branch.*

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## 4. Development

Similar to many coastal areas, historical development began with small seasonal cottages and progressed over the years. Currently there are approximately 60 summer cottages and year-round homes. In the last ten years, approximately 30% of the beach area at Carron Point has had erosion control structures erected. Residential development is reaching its capacity as most of the lots are already occupied.

The majority of Carron Point property would be classified as 'Zone A' according to the Coastal Areas Protection Policy (NBDNR) since the cottages, homes, roads and other infrastructure are built directly on a dune or beach.

## 5. Questions about Crown Land

### Who owns the beach?

In most cases, the 'dry' part of the beach (or 'backshore') is owned by the upland property owner, while the 'wet' part of the beach (or 'foreshore') that is exposed when the tide goes out is owned by the Province. It is managed by the New Brunswick Department of Natural Resources (NBDNR). The average high water mark is the boundary between a waterfront property owner's land and Crown land. This mark is defined as the average of the normal high tides at a given location. It can be formally delineated by a licensed surveyor (NBDNR).

### Who owns submerged lands?

Lands covered by fresh or salt water such as a lake, river, or sea-bed are owned by the Crown.

The Province owns approximately 2.1 million hectares of submerged Crown land, including inland waters and parts of the Bay of Fundy, Northumberland Strait, Gulf of St. Lawrence and Bay of Chaleur. These lands and waters are managed by Natural Resources on behalf of the Province. Other provincial and federal agencies also have jurisdictional responsibilities. (NBDNR).

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## 6. Erosion Control

### **W**hy is the salt marsh important for erosion control?

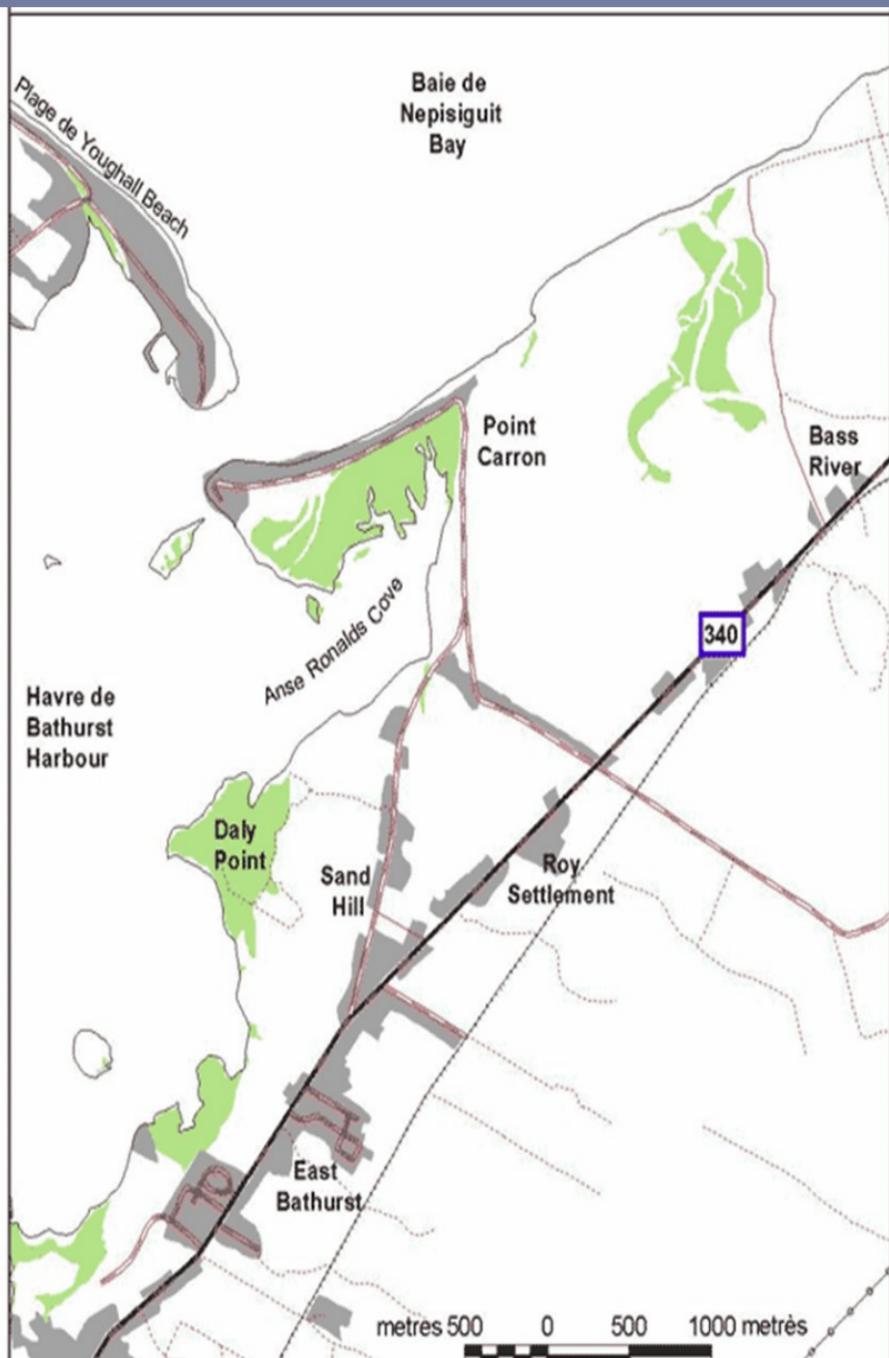
Salt marshes are coastal wetlands located in protected bays and estuaries where fresh water meets the sea. Most of the time, they are located behind sand dunes. Salt marshes resemble grassy prairies and can be entwined by many small streams and ponds. They are also regularly flooded by tides.

The salt marsh is one of the most productive habitats in the world. Salt marshes are extremely important as ecosystem filters. Salt marshes are capable of removing and safely storing many of the pollutants found in rivers, lakes and oceans. In addition, the vegetation in salt marshes stabilizes coastal banks, reduces flooding and protects the shoreline from erosion.



**A salt marsh at Peters River, New Brunswick. What may look like an unassuming grassy meadow actually provides great erosion protection through networks of plant roots.**

*Source: Recovery Strategy and Action Plan for the Maritime Ringlet in New Brunswick, 2005.*



**Locations of salt marshes (displayed in pale green) and private land ownership (displayed in gray) at Carron Point, Daly Point and the Bass River.**

*Source: Recovery Strategy and Action Plan for the Maritime Ringlet in New Brunswick*

## How can you protect salt marshes?



*Source: City of Beresford*

- Never add gravel, garbage or soil to fill in marshes
- Never drive ANY vehicle in the marsh, on the dunes or beaches. It is illegal and you may destroy the stability of the marsh.
- Avoid walking through the marsh. It crushes the grasses and damages critical habitats.
- Report all illegal dumping to 1-877-777-4218.
- Do not burn grass near the marsh and rivers.
- Leave dead trees and branches in the buffer zone, they help to protect the marsh from erosion.

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## What is a Buffer Zone?

A buffer zone is an area where grasses, bushes and trees grow together, and where there is **little to no human impact from development**. These zones reduce the impact of storms and flooding by absorbing part of the force from waves, winds, and heavy precipitation. If your property is located in a buffer zone, you can help restore this sensitive habitat by planting species native to the region and by not mowing or clearing the naturally occurring vegetation.

The Coastal Areas Protection Policy for New Brunswick recommends that this zone be at least 30 meters wide\* in order to maintain integrity of the coastal marsh. The larger the buffer zone created and maintained, the better it will be at protecting sensitive habitats and reducing erosion rates to private property.

***\*The 30 meter buffer zone around all coastal and freshwater wetlands and watercourses is regulated by the province. Contact the New Brunswick Department of Environment prior to any activity or development within this zone.\****

## How Can We Restore a Buffer Zone?

- Plant indigenous plant species like marram grass
- Stop mowing or pruning back natural vegetation, and allow it to grow freely
- Seek site-specific advice from your local New Brunswick Departments of Natural Resources or Environment
- Your efforts will have a positive impact on erosion reduction, and local wildlife species

## Soft Erosion Control Approaches: Two options

### Option 1 — No Action

- If the estimate of capital loss to erosion will be low, and no or relatively inexpensive structures are at risk, than likely no action is required
  - This can be the case for some properties that only experience erosion during irregular storm events and surges
  - With 'no action' the shoreline is left to its natural dynamic
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## Option 2 — Protect and Restore Coastal Features

- Protect sand dunes and coastal wetlands by erecting sand fences (see photo below)
- Planting native vegetation also collects sand deposits
- By combining sand fencing and plantings, your beach, dune, and wetland will be protected against erosion



**Sand fencing and planting of native dune grass (marram grass) are two soft erosion control approaches. The success of these methods depends on local conditions.**

*Photo: Universite de Moncton*

## Hard Erosion Control Structures

### Many options, big expense

- Recommended only in cases where there is high wave energy
- They are more costly (for both installation and on-going maintenance) but can provide more protection for a longer period of time.
- Such structures can range anywhere from Gabion rock cages, rip-rap, to concrete walls

## 7. Regulation, Policy & Contacts

### Regulation & Policy summary:

#### Important information for coastal landowners

According to the New Brunswick Department of Natural Resources and in accordance with the *Submerged Land Policy*... “when any hard erosion control structure along the frontage of a landowners property which belongs to the property, such as riprap, gabion baskets or a vertical wall, is damaged or destroyed by storm surge or falls into a state of disrepair due to lack of maintenance or other events, it is the responsibility of the land owner to clean up and remove debris and materials from these damaged structures if they have fallen either onto crown land (beach area below the high water mark) or into crown waters (oceans or rivers).”

*Source: Submerged Land Policy, NB Department of Natural Resources and Letter from Minister of Natural Resource to Caron Erosion Study Team, April 24, 2009.*

At the present time, under the New Brunswick Coastal Areas Protection Policy and the *New Brunswick Watercourse and Wetland Alteration Regulation*, **no erosion control structure is permitted to be built within 30 metres of a coastal wetland.**

### Did you know?

Atlantic storms are becoming more frequent. During the last decade, the number of tropical cyclones has increased radically. These meteorological phenomenon's have a direct impact on the coastal landscape. Sensitive habitats, such as salt marshes, can be highly disrupted by these natural forces. The presence of a buffer zone near these wetlands helps absorb part of the destructive forces brought on by these storms.

## **Which developments require a formal environmental review?**

1. Permanent wharves, docks, or piers
2. Bridges and causeways, including repair, upgrading, opening of gates, and decommissioning
3. Intake/outflow/run-off pipes, as well as cables, pipelines, road ditches, and culverts
4. Breakwaters and jetties
5. Beach nourishment
6. The removal, repair, rebuilding, upgrading or altering of any existing permanent works
7. Roads associated with allowable coastal works that may cross or impact coastal marshes or dunes, including within the associated Zone B area
8. Dredge and/or disposal activities associated with Ocean Disposal Permits under the Canadian Environmental Assessment Act (CEPA)
9. Floating boardwalks crossing tidally influenced areas for public access
10. Coastal lands clean-up activities involving large marine mammals or other species
11. Harvesting, collection, or other activities involving organic matter on coastal lands, including beach wrack or seaweed, as well as beach raking
12. Opening of natural tidal barriers for water exchange purposes
13. Any coastal works not otherwise addressed

*Source: Coastal Land Use Policy, NB Department of Environment*

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## Example:

### Local Permitting Process for Construction of a Hard Erosion Control Structure- City of Bathurst, NB

1. The landowner informs in writing the City of Bathurst Planning Development officer, the **New Brunswick Department of Natural Resources (NBDNR)**, the **NB Department of Environment (NBDOE)** of their intention to apply for a permit from the City.
  2. The landowner receives from the City of Bathurst and NBDOE the structural requirements for design and materials used for a permitted erosion control structure according to section 3.17 of the current erosion Zoning By-law already adopted and passed by the City of Bathurst and the **Coastal Areas Protection Policy for New Brunswick (CAPPNB)**.
  3. The landowner hires a surveyor to determine the **Ordinary High Water mark (OHWM)** on the property in consultation with NBDNR.
  4. The CAPPNB outlines and provides guidance on allowable coastal erosion structures and approaches.
  5. In order to comply with all requirements, the landowner may need to hire an engineer to design and oversee the placement and construction of the erosion control structure.
  6. The City reviews the submitted design of the structure based on City by-laws. The NBDOE may review the submitted design of the structure.
  7. In some cases when the proposed structure is to be on Crown land (below high water mark) a License of occupation from the NBDNR under the *Crown Lands and Forest Act* is required prior to any construction taking place.
  8. If the design and placement location are approved, the landowner obtains a building permit from the City of Bathurst. The landowner builds the erosion control structure according to approved plans.
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Example (continued...)

**Notes:**

City of Bathurst Zoning Status: Protected Area, Residential  
City of Bathurst Zoning By-laws:

- Section 3.16 General Setback from Bodies of Water
- Section 3.17 Erosion Protection By-law

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## Contacts

- City of Bathurst- Planning Department: 548-0444
- New Brunswick Department of Environment: 547-2092
- New Brunswick Department of Natural Resources: 547-2070
- Belledune District Planning Commission: 542-2688

## Provincial & Federal Regulations

The following is a sample of legislation or policies that proposed developments may need to contact for authorization or permits when considering conducting activities near a watercourse, crown lands or crown waters. ***\*This list is not inclusive.\****

**A Coastal Areas Protection Policy for New Brunswick**, New Brunswick Department of Environment, <http://www.gnb.ca/0009/0010-e.asp>

**Canadian Environmental Protection Act (CEPA)** – Environment Canada must review and approve any activity involving the disposal of any materials below the ordinary high water mark under the Ocean Disposal Permit Regulation. After screening projects under the *Canadian Environmental Assessment Act*, an Ocean Disposal Permit may be issued. [\\_http://www.ec.gc.ca/CEPARRegistry/the\\_act/](http://www.ec.gc.ca/CEPARRegistry/the_act/)

**New Brunswick Clean Water Act** – No watercourse or wetland may be disturbed without a Watercourse and Wetland Alteration Permit. <http://www.gnb.ca/0062/acts/acts-e.asp>

**Fisheries Act** (federal) – The Habitat Management Division of Fisheries and Oceans Canada must approve any activity that may alter, disrupt or destroy fish habitat. <http://laws.justice.gc.ca/en/F-14/index.html>

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## Provincial & federal regulations (continued...)

**New Brunswick Clean Environment Act**— New Brunswick Department of Environment may review and approve activities under certain regulations (e.g., Water Quality Regulation, Environmental Impact Regulation). An application and written approval, in the form of a Certificate of Determination and or a Certificate of Approval may be required. <http://www.gnb.ca/0062/acts/acts-e.asp>

**New Brunswick Community Planning Act** — Check with your local municipality or District Planning Commission to determine what permits are required. <http://www.gnb.ca/0062/acts/acts-e.asp>

**New Brunswick Fish & Wildlife Act, Endangered Species Act, Wetlands Policy** – All applications may be forwarded to New Brunswick Department of Natural Resources' Fish & Wildlife Branch for their review to ensure they do not conflict with these Acts or Policies, <http://laws.justice.gc.ca/en/F-14/index.html>

**New Brunswick Quarriable Substances Act** – The Department of Natural Resources' Minerals Division must issue a Quarry Permit authorizing any excavation of materials 300 meters above or 300 meters below the ordinary high water mark. <http://www.gnb.ca/0062/regs/q-1-1reg.htm>

**New Brunswick Submerged Land Policy** — <http://www.gnb.ca/0078/Policies/CLM0142004E.pdf>

**Species at Risk Act** (federal) - A permit and formal review is required for activity or development that may disturb species or their habitat that are formally listed under the Act. This includes the Maritime Ringlet and Piping Plover. <http://www.sararegistry.gc.ca>

**Migratory Birds Convention Act & Regulations** (federal) — It is illegal to disturb or destroy the nest or eggs of migratory birds in Canada. Contact the Sackville, NB office of the Canadian Wildlife Service for more detail (506) 364-5044. You may be required to carry out your development outside of breeding periods. [http://www.cws-scf.ec.gc.ca/legislations/laws1\\_e.cfm](http://www.cws-scf.ec.gc.ca/legislations/laws1_e.cfm)

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## Did you know?

- The Intergovernmental Panel on Climate Change predicts that global sea level may increase 50 cm by 2100 due to warming of the oceans, melting of glaciers, and other effects.



- The Atlantic coast is sensitive to the effects of sea-level rise. The most sensitive coasts (shown here in red) are generally low-lying areas with salt marshes, barrier beaches, and lagoons. Predicted effects include increased erosion, rapid migration of beaches, and flooding of coastal freshwater marshes.

Source: Natural Resources Canada - Climate Change Impacts and Adaptation, [http://adaptation.nrcan.gc.ca/posters/ac/ac\\_11\\_e.php](http://adaptation.nrcan.gc.ca/posters/ac/ac_11_e.php)

# Tips for Coastal Landscape Management

The landscape management options you choose today will make a vital difference in protecting coastal areas such as buffer zones and salt marshes for future generations.

- **Construction should respect the coastal areas** - including salt marshes and the buffer zones. Buildings should be situated far from the marsh, leaving enough space for a buffer zone.
- **Clean and maintain septic tanks.** Tanks should be installed well away from the water (consult appropriate regulations), be in good working condition, and inspected and cleaned annually.
- **Restore your buffers!** Planting indigenous species like beach grass and sea-lyme grass to fight erosion instead of building artificial structures will protect natural ecosystems and create habitat.
- **Do not park vehicles next to a salt marsh.** Vehicles can leak oil and other fluids which pollute the marsh.
- **Do not mow beach grass.** It helps trap sand and prevent erosion of your property.



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## 8. Glossary

**Accelerated erosion**—an increase over the rate of natural erosion as a result of land-disturbing activity.

**Backshore** - the part of the beach that stays dry during a normal high tide. It is located landward of the ordinary high water mark, where sand or other sediment typically gets deposited.

**Energy dissipater** - a structure or a shaped channel section with mechanical armor placed at the outlet of pipes or conduits to receive and break down the energy from high velocity flow of water.

**Erosion** - the wearing away of land surface by the action of wind, water, gravity, or any combination thereof.

**Estuary** - a semi-enclosed coastal body of water with one or more rivers or streams flowing into it, and with a free connection to the open sea.

**Foreshore** - the wet part of the beach that is exposed at low tide and located between the ordinary high water marks.

**Geomorphology** - the branch of geology that studies the characteristics and configuration and evolution of rocks and land forms.

**Hard erosion control structure** - shore erosion control structure that relies solely on inert materials and can include riprap, (slabs of rock encapsulated in gabion baskets, laid on a slope) or seawalls.

**Littoral Drift** - materials moved by waves and currents of the littoral (coastal) zone.

**Ordinary High Water Mark (OHWM)** - *Coastal* a line on the shore representing the average high tide under normal weather conditions. *Inland* - the line on the bank of a lake, river or stream made at the average level of the water (NBDNR).

**Salt Marsh** - plant communities of emergent herbs, grasses, or low shrubs, rooted in soils; flooded and drained by tides

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## Glossary (continued...)

**Sediment** - solid particulate matter, both mineral and organic, that has been or is being transported by water, air, gravity, or ice from its site of origin.

**Sedimentation** — the process by which sediment resulting from accelerated erosion has been or is being transported off the site of the land-disturbing activity or into a lake or natural water-course.

**Siltation** — sediment in water resulting from accelerated erosion which is settleable or removable by properly designed, constructed, and maintained control measures; and which has been transported from its point of origin within the site of a land-disturbing activity; and which has been deposited, or is in suspension in water.

**Soft Erosion control structure** - biological forms of erosion control such as salt marshes, dunes and beach nourishment (through installation of sand fencing).

**Submerged Crown Land** - Crown land that is covered by either fresh or salt water such as a lake bottom, river bed or the bed of the sea.

**Terminal Scour** - an erosion process which is carried out by the tidal movement of water over any surface.

**Velocity** - the average flow of water through the cross section of a main channel at peak flow. The cross section of the main channel is defined by the geometry of the channel plus the area of flow below the flood height defined by vertical lines at the main channel banks. Overload flows are not to be included for the purpose of computing velocity of flow.

***Sources: The definitions listed here are from the New Brunswick Department of Natural Resources and the New Brunswick Department of Environment and the Environmental Protection Agency (EPA) websites.***

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## 9. Select References

A Coastal Areas Protection Policy for New Brunswick; NB Department of Environment Sustainable Planning Branch.

Beaubassin Case Study, Shediac, NB, Case Study Analysis Research, Residential Development in Coastal Communities: Addressing Climate Change through Sustainable Coastal Planning, by Paul Jordan: Associate Rural and Small Town Programme, Mount Allison University.

Erosion rates at specific erosion control structures along Carron Point: Dominique Bérubé of NBDNR, Serge Joilcoeur, professor at U de Moncton and Stéphane O'Caroll, coastal geomorphologists.

Maritime Ringlet Recovery Strategy, Endangered Species Population Counts: Species Recovery Team: References; Webster 1998a, 1999.

New Brunswick Department of Natural Resources (NBDNR): Coastal Areas Management, [http://www.gnb.ca/0263/coastal\\_areas-e.asp](http://www.gnb.ca/0263/coastal_areas-e.asp).

Residential development in coastal communities: addressing climate change through sustainable coastal planning, External Research Program, Canada Mortgage and Housing Corporation, By: Paul Jordan.

Towards a community plan for adaptation to erosion and other impacts of climate change in the Pointe Carron area: Omer Chouinard, Serge Jolicoeur, Gilles Martin, Université de Moncton, Stéphane O'Carroll and Dominique Bérubé, NBDNR.

Submerged Land Policy, NB Department of Natural Resources, <http://www.gnb.ca/0078/Policies/CLM0142004E.pdf>.

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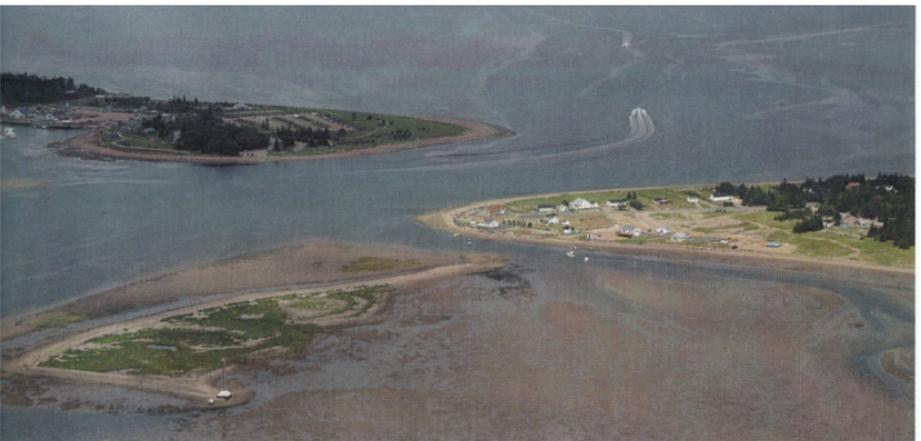
## 10. Photographs

- I. Aerial view from of the Carron Point area. Note the large salt marsh.



PROMENADE – BAYSHORE – DRIVE / PAGE DE LA POINTE – CARRON – POINT BEACH

- II. Aerial view of the main channel between Youghall Beach and Carron Point.



LES POINTES – ALSTON & CARRON - POINTS

## Photographs (continued...)

### III. Aerial view of erosion control structures

- 1- Heavy shale riprap
- 2- Small rock riprap
- 3- Solid vertical cement wall
- 4- Large rock riprap



*Photo: City of Bathurst*

**Photographs (continued....)**

**IV. Bass River Estuary. Source: City of Bathurst**



**V. Bass River littoral area, November, 2002. Source: City of Bathurst**



## 11. Land protection options

**The Nature Trust of New Brunswick Inc.** is a charitable, non-governmental organization dedicated to conserving New Brunswick's outstanding ecological areas.

As a landowner you can protect your property in perpetuity through several options including land donation, conservation easement, or private land stewardship. The Nature Trust welcomes all proposals for land protection and you are welcome to contact one of our staff for more information.

Another option for protecting your property is through a **conservation easement**. A conservation easement is a voluntary legal agreement between a landowner and third party such as the Nature Trust that allows a landowner to place permanent restrictions on certain land uses ensuring the future protection of the land. The landowner retains ownership to the property while the holder of the easement takes on the monitoring and enforcing responsibility to ensure that the provisions of the easement are met.

A donation of ecologically important property to the Nature Trust will ensure that the land will be protected in perpetuity. There are several options for land donation, including:

- **Gifts of land through donation**
- **Gifts of land in a will** -if you are not ready to donate the land in your lifetime, you can leave the land to the Trust in your will.
- **Life estate** - you can continue to live on your property and at the same time cede the property for conservation purposes.

If your land is ecologically sensitive, its conservation through one of the mechanisms above may qualify for a federal tax incentive through ***Environment Canada's Ecological Gifts Program***.

You can practise good land stewardship without donating your land or using other formal protection. Learn about your land and understand how you can contribute to the well-being of your property.

Other organizations that can also assist you in protecting or donating your land for protection:

- The Nature Trust of New Brunswick Inc.  
404 Queen Street (P.O.Box 603, Stn A)  
Fredericton, NB E3B 5A6  
Tel: (506) 457-2398  
Fax: (506) 450-2137  
Email: [ntnb@nbnet.nb.net](mailto:ntnb@nbnet.nb.net)  
<http://www.naturetrust.nb.ca/>
- Nature Conservancy of Canada Atlantic Office  
924 Prospect Street, Suite 180  
Fredericton, NB E3B 2T9  
Tel.: (506) 450-6010  
Fax: (506) 450-6013  
Toll Free: 1-877-231-4400  
E-mail: [atlantic@natureconservancy.ca](mailto:atlantic@natureconservancy.ca)  
<http://www.natureconservancy.ca>
- Ducks Unlimited Canada  
752 Union St.  
Fredericton, NB E3A 3P2  
Tel.: (506) 458-8848  
Fax: (506) 458-9921  
E-mail: [du\\_fredericton@ducks.ca](mailto:du_fredericton@ducks.ca)  
<http://www.ducks.ca>

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## Let us know what you think...

1. Did you find this booklet useful? (circle one)  
Yes No
2. Are you using any of the tips and suggestions mentioned in this booklet? (circle one)  
Yes No
3. What new actions have you taken to help in the stewardship of salt marshes and coastal ecosystems?

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4. Suggestions? Comments? Questions?

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Returning this feedback form will help us to better serve our community.

### Mail to:

Bathurst Sustainable Development  
Climate Change Action Center,  
237 Main Street, Bathurst, NB, E2A 1C9

Tel: (506) 548-2106 or 548-8470

E-mail: [rosewood@nbnet.nb.ca](mailto:rosewood@nbnet.nb.ca)

Visit Bathurst Sustainable Development Saturday mornings at the **Environmental Resource Center** at the Bathurst City Farmer's Market.

[www.bathurstsustainabledevelopment.com](http://www.bathurstsustainabledevelopment.com)

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