SHORELINE MANAGEMENT PLANS
IN PRINCE EDWARD ISLAND

What is unique about PEI's shoreline?

Unique shore

The shoreline can be a place for many things; recreation, work, or simply a place to live and connect with nature. PEI is Canada's most densely populated province in Canada and has a unique geography with competing land uses. This means we need to think differently about how we manage our coastline.

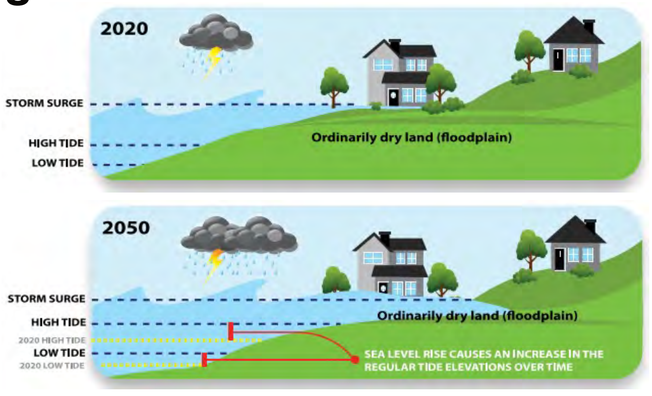
Stressors to the shore

Coastal development—like buildings, roads, and armour rock—can stress natural areas by blocking the natural movement of dunes and saltmarshes, increasing erosion, and weakening the shore's ability to recover from storms.

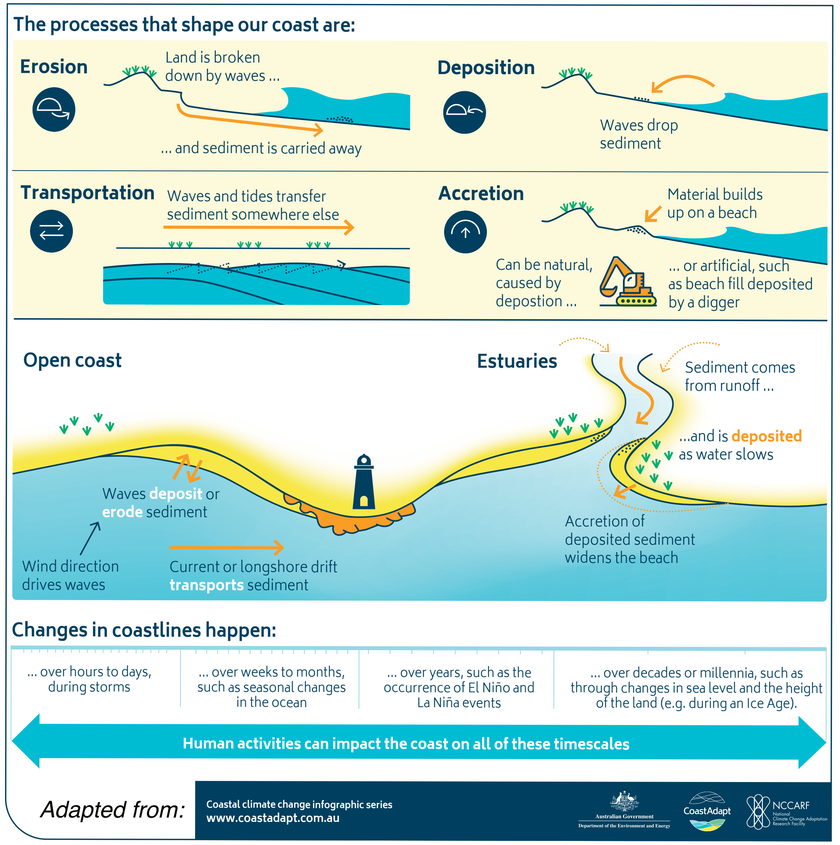
Effects of climate change

Sea levels around PEI are rising, and storms are getting stronger.

By 2100, water could regularly reach 75-100 cm higher, pushing storm surges farther inland and causing more sudden coastal erosion.



A changing coastline



Coastal change is a natural process that has always and will always occur.

Coastal erosion helps to create and maintain our beaches.

People can affect the way these processes occur in both positive and negative ways.

Natural erosion on Pituamkek. Photo: D. Jardine

Saltmarsh migration

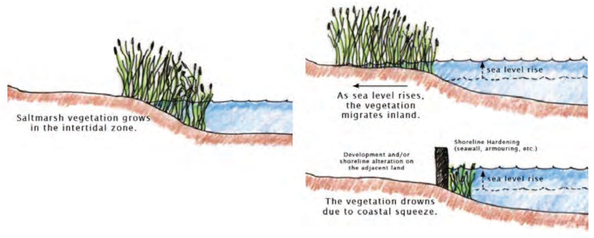


Figure 19. Sea level rise causes saltmarshes to migrate landward. If development or shoreline hardening prevents migration of the salt marsh and the vegetation will eventually drown. (H. Parnham; Adapted from VIMS, 2009)

The Island's saltmarshes help filter runoff and pollutants, provide important habitat, and protect the shoreline.

As sea levels rise, these marshes need space to grow so they can keep doing their job.

SHORELINE MANAGEMENT PLANS
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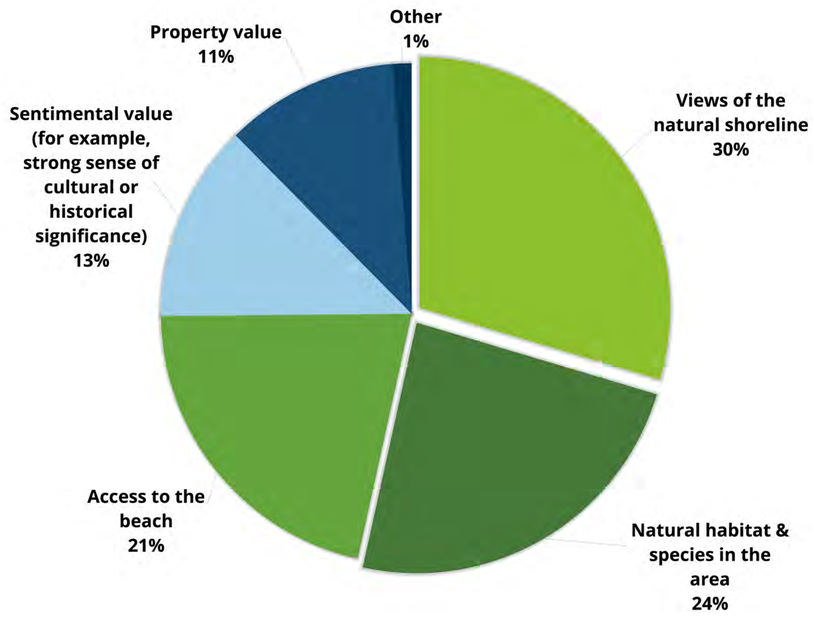
What do you value about the shore?

Coastal property owners survey

In January 2025, 17,000 information mailouts were sent to coastal property owners, including links to a survey. Over 1,500 people responded.

Views of the natural shoreline and habitat & species were the highest ranked by respondents.



What do *you* value?

Add dots for your favourites or add stickies to share your ideas

- Scenery / Views
- Livelihood / Jobs
- Water Activities
- Tourism / Recreation
- Wildlife / Natural habitats
- Waterfront land / property
- Physical/ Mental Health
- Access to the beach
- Spiritual connection
- Gathering or harvesting traditional medicines
- Fishing or harvesting seafood

Others

How do you connect with the shoreline?

Add dots for your favourites or add stickies to share your ideas

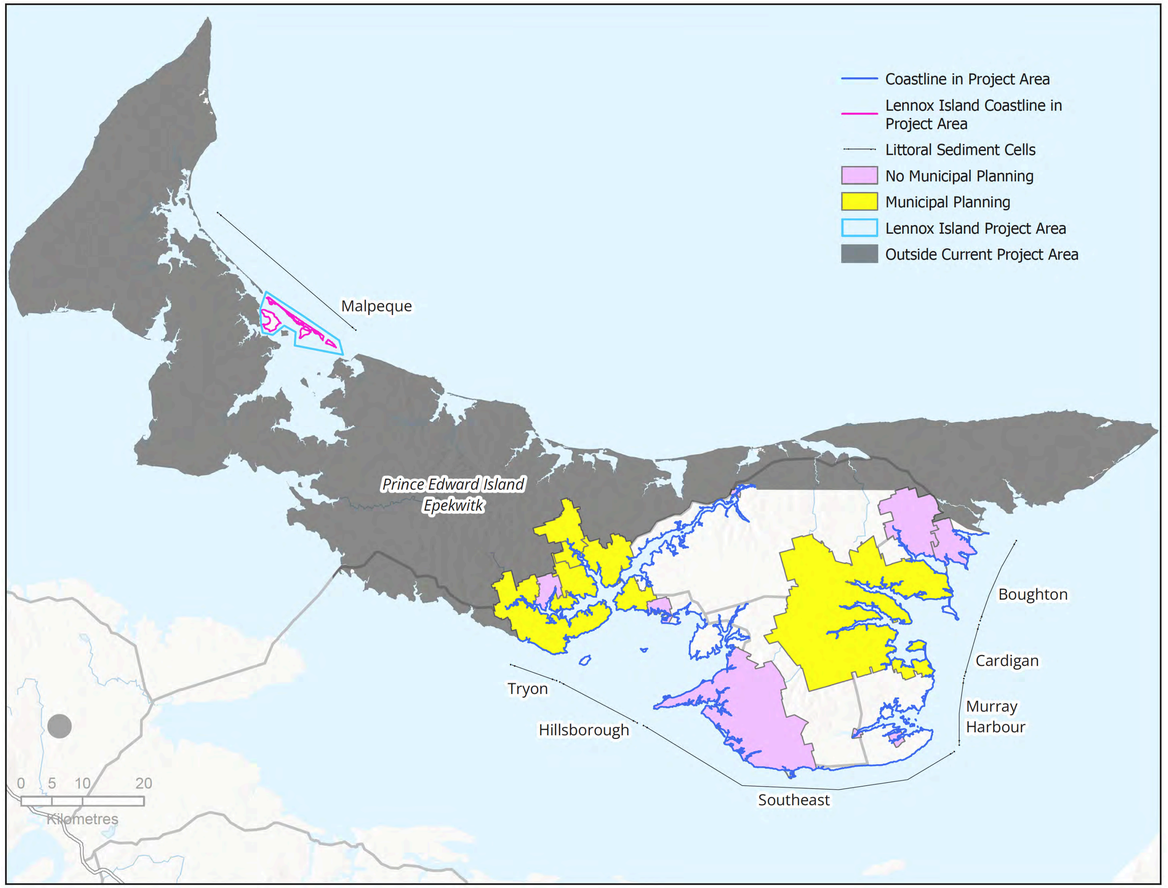
- Walking / running
- Working
- Cycling
- Birdwatching
- Boating / Swimming
- Relaxation / Socializing
- Fishing, harvesting & gathering

Other

SHORELINE MANAGEMENT PLANS IN PRINCE EDWARD ISLAND

The shore and you

What places on the shore are important to you?



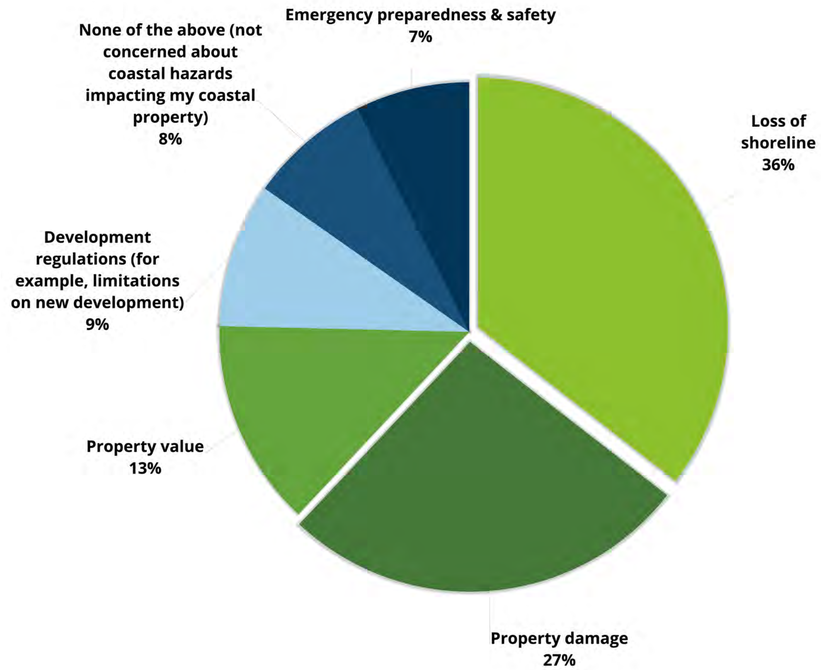
Take the survey:

https://tinyurl.com/msvtnbee

Where do you access the shore?

Please speak with a project team member or complete our virtual survey to share your thoughts.

In the January 2025 survey of coastal property owners, loss of shoreline and property damage were the areas of greatest concern regarding respondents' property and coastal hazards.



What are your thoughts about coastal hazards and changes to the shore? Leave us a note.

What changes have you seen around the shores in your area?

Which areas along the shore are you the most concerned about?

SHORELINE MANAGEMENT PLANS IN PRINCE EDWARD ISLAND

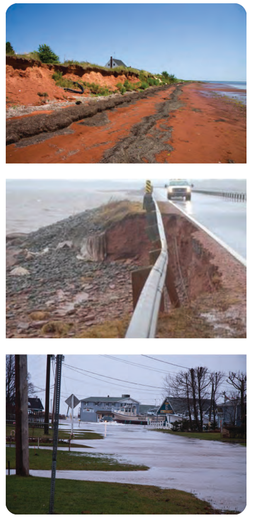
What challenges are we dealing with on the shore?

Impact of development

Development close to the shoreline or in the floodplain such as homes, roads, schools, or any type of building that is too close to the shore can increase the vulnerability to:

- people
- local economy
- natural habitats

These are natural processes that only become risks when we put ourselves in their way.



Photos: D. Jardine

Vulnerability comes from hazards like flooding and erosion

Climate change increases the hazards

Flooding, erosion, and other coastal hazards have always existed, but climate change makes them worse.

As examples, reduced sea ice cover is expected to increase erosion during the winter months and sea level rise will increase the chances of flooding.

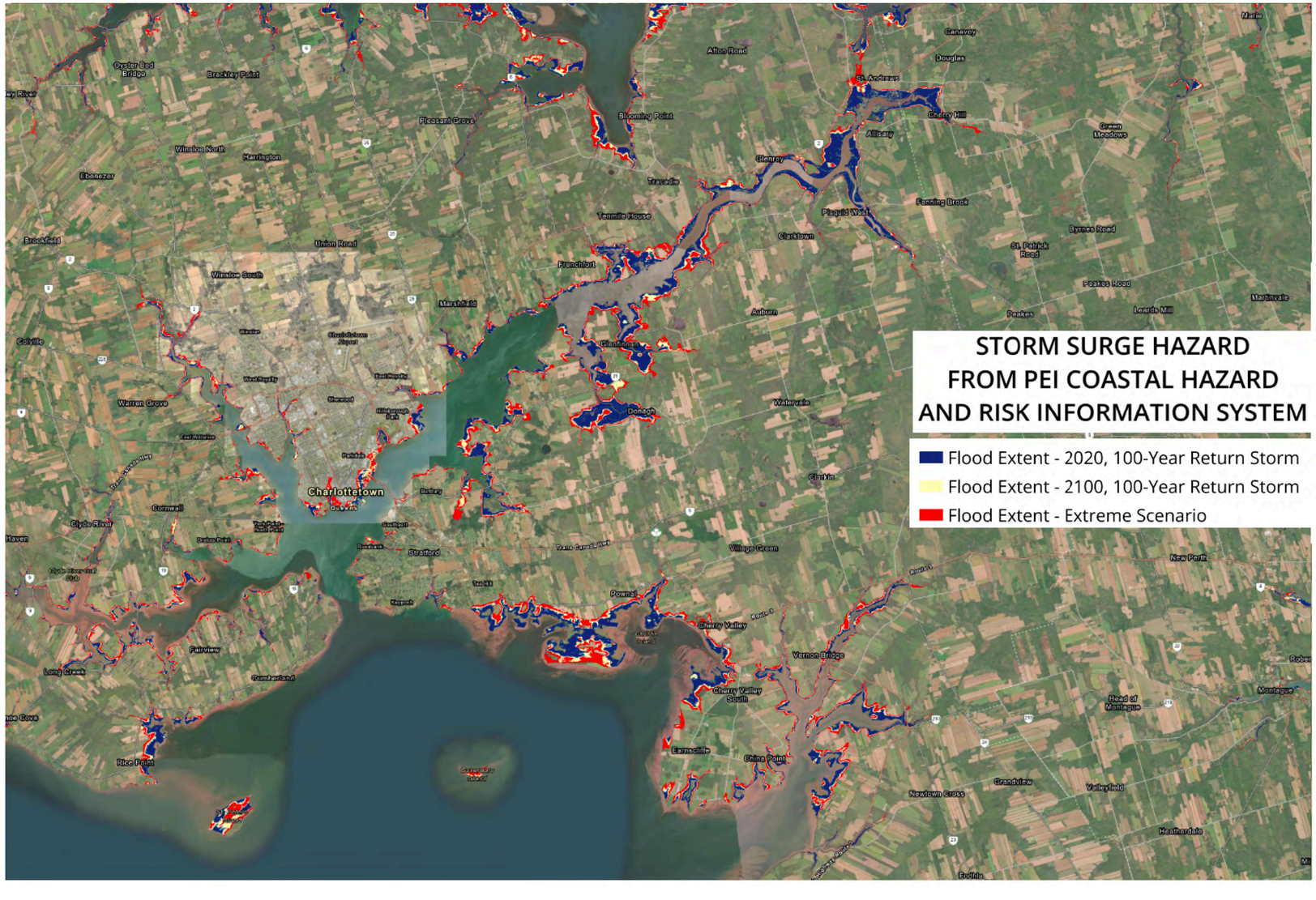
Grahams Pond. Photo: D. Jardine

Climate Change also increases the chances that we will be impacted by large storms making us more vulnerable.

A shoreline in motion

Flooding, like erosion, is a natural process. Flooding can be temporary – such as during large storms where the water floods and goes away, but flooding can also be more permanent – where rising sea levels lead to an area permanently flooded or being repeatedly flooded.

Post Tropical Storm Fiona was an example of temporary flooding.



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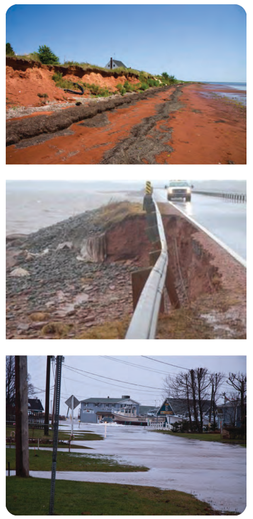

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STORM SURGE HAZARD FROM PEI COASTAL HAZARD AND RISK INFORMATION SYSTEM

- Flood Extent - 2020, 100-Year Return Storm
- Flood Extent - 2100, 100-Year Return Storm
- Flood Extent - Extreme Scenario

What is climate adaptation?

What is climate adaptation?

Climate adaptation is planning to deal with the effects of climate change.

Climate adaptation for the shore means finding ways for people and communities to live safely with changing conditions—like rising seas, stronger storms, and more frequent flooding.

Sometimes, adaptation means avoiding risk by not building in vulnerable areas or moving back from the shoreline. These actions help communities recover more easily after damaging events and build long-term resilience.

In other cases, where moving is not possible, adaptation might involve protecting infrastructure—like homes or wharves—using techniques that are suited to the specific hazard. For example, rock armouring might help with erosion but may not stop flooding.

Effective adaptation looks at the whole picture, choosing solutions that work for both people and nature—without creating new problems elsewhere.

What is maladaptation?

Many places that communities care deeply about are under growing pressure—not just from erosion and flooding, but also from some of the ways we try to fix these issues.

Sometimes, a solution like rock armouring might protect one property but worsen erosion nearby. Other times, it is simply the wrong tool—for example, rock armouring may not stop flooding.

These kinds of missteps are called maladaptations—solutions that either shift the problem elsewhere or do not actually solve it. To truly protect our shores, we need approaches that consider the whole shoreline and use the right tools for the job.

The armouring here will not prevent all flooding and will prevent sand from moving along the shore. The lack of sand moving will affect the beach and plants that grow in the saltmarsh.

SHORELINE MANAGEMENT PLANS
IN PRINCE EDWARD ISLAND

How does climate adaptation help?

Safe and strong communities

Climate adaptation helps communities stay safe and strong in the face of rising seas, stronger storms, and changing coastlines. It means planning ahead—avoiding hazardous areas, using the right tools to protect infrastructure, and working with nature instead of against it.

By adapting wisely, communities can:

- Reduce damage from flooding and erosion
- Recover faster after storms
- Protect cultural and natural areas
- Build long-term resilience for future generations

Smart adaptation doesn't just fix problems—it helps prevent them. Adaptation can take many shapes including naturalizing coastlines, building further back, or building higher.

Protect cultural and natural areas

Adaptation helps safeguard places that matter—like saltmarshes, beaches, and culturally significant sites—so they can continue to support traditions and ecosystems.

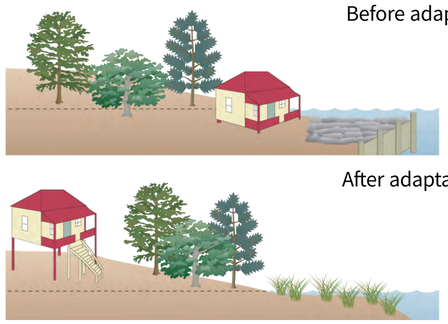
Example of hybrid solution.
Photo: CBWES

Build long-term resilience

By choosing smart, forward-looking solutions, communities become stronger and better prepared for future climate challenges.

Reduce damage

Adaptation helps limit the impact of flooding, erosion, and storms—by protecting homes, roads, and natural areas from costly damage.



Modified from Hawkey 2011
lan.umeces.edu/link/assateague

Recover faster

Communities that plan ahead can bounce back more quickly after extreme weather, reducing downtime and disruption.

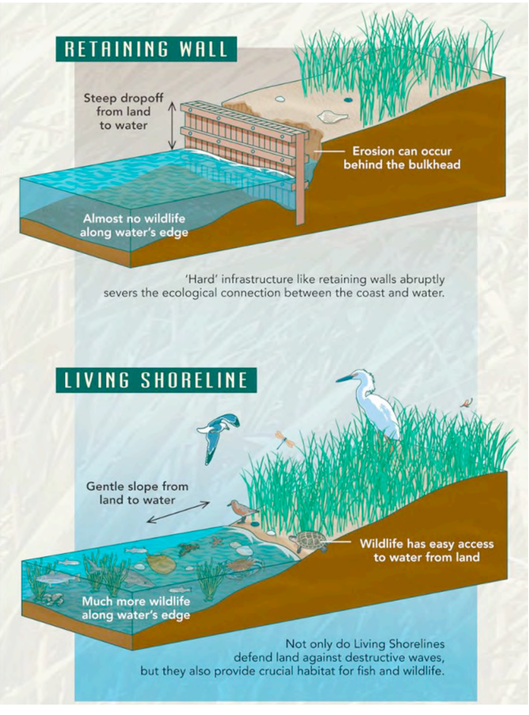
Nature-based solutions

Nature-based solutions work with the environment to reduce coastal risks—and sometimes even improve natural systems.

Working with nature can:

- Create habitat
- Dampen waves
- Reduce erosion in some areas
- Filter pollution from land
- Maintain beaches and beach access

Nature-based solutions are not a one-size-fits-all fix; in places with strong winds and waves, nature may need a little help to buy communities time.



SHORELINE MANAGEMENT PLANS
IN PRINCE EDWARD ISLAND

Questions

How familiar are you with coastal erosion?

Place a dot where you feel most comfortable

How familiar are you with coastal flooding?

Place a dot where you feel most comfortable

Would you like to learn more about the effects of climate change, sea level rise, and human development on the shoreline?

Please place a dot on your answer

Yes	No	Not sure

SHORELINE MANAGEMENT PLANS IN PRINCE EDWARD ISLAND

What is a shoreline management plan?

Options

A shoreline management plan, or SMP, involves a map that shows where different types of adaptation work best. It is an approach that looks at the system as a whole and then applies it to the local scale. Shoreline management plans help to manage the risks to people, wildlife, and habitat associated with coastal erosion and flooding.

In essence – SMPs help protect us from the shore and the shore from us.

These plans are:

- Future focused
- Locally appropriate
- Holistic
- Transparent
- Consistent

These plans:

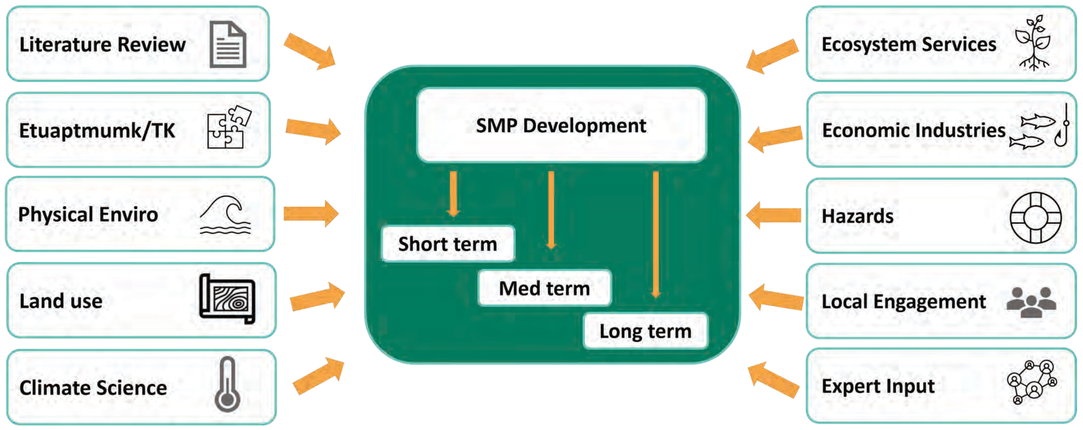
- Consider site suitability
- Reduce maladaptation
- Influence decision making

Plans include three timelines: short, medium, and long term

20 years | 50 years | 100 years

What goes into an SMP?

These are multifaceted approaches that consider many aspects of the natural environment, people & community, beliefs, and the economy, and how these may change over time.

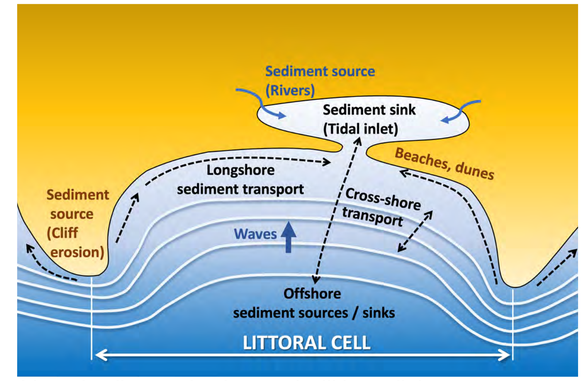


From a littoral cell to individual beaches

Littoral cells are self contained segments, or parts of the shoreline, that include:

- sediment sources (areas of erosion),
- areas of transport where the sand moves along the shore, and
- depositional sinks like beaches, dunes, and sandspits.

Shoreline management plans must work at the littoral cell level to understand how small changes at the property level will affect the entire system.



Littoral cells vary in size, and will be split into management units based on sediment movement, shoreline characteristics, use, and community feedback.

Sediment transport patterns around Panmure Island.

Red and orange suggests a lot of sediment movement while green, teal, and white have less movement.

Arrows depict general direction.

Working at the littoral cell scale helps ensure that we are not trying to protect some parts of the shore while having a negative influence on others. This includes making sure barrier islands maintain a sediment supply to ensure that they continue to protect what is behind them.

This helps to ensure resiliency for everyone.

Shoreline management plans can help achieve goals such as preserving natural features, protecting fish habitat, ensuring public safety, protecting infrastructure, and preserving beach access.

SHORELINE MANAGEMENT PLANS
IN PRINCE EDWARD ISLAND

What would shoreline management plans do for the Island?

Solutions

Shoreline management plans will help match the best solution with the specific problem. They can help ensure that land is protected from the sea when it's absolutely necessary, but they can also help ensure that natural and important harvesting areas, access to beaches and scenery are protected from the potentially damaging impacts of human activity

All actions we take should work towards increasing resilience in coastal communities for generations to come.

By planning with the future in mind, the community will have a better sense of where to develop and where to avoid.

How will the shoreline management plans work?

The shoreline management plans are intended to help public officials make informed decisions about permitting, providing direction to different levels of government, residents, property owners, and others on where and how to manage activities along the shore, recognizing risks to properties, assets and infrastructure.

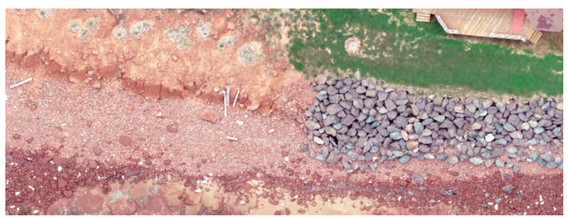
These recommendations will help protect the fishery and harvesting areas, the local economy, environment, and ultimately future generations of people living on PEI.

These plans will link shoreline changes and community values to locally appropriate actions that can be implemented over different time periods.

Can't we just use rocks to stop flooding and erosion?

It turns out armouring has its limits because it:

- seeks to protect property, not shorelines
- disrupts natural coastal habitats
- disrupts sand transport & dune/ beach rebuilding
- leads to a loss of beach access over time
- will eventually be overtopped
- provides limited flood protection
- can be a safety hazard on the beach
- leads to worsened erosion of adjacent properties



Can a shoreline management plan change over time?

Although long-term goals should usually favour the protection of nature, short-term solutions might aim to temporarily protect existing buildings in some areas.

Highly developed or culturally significant areas may need to be protected from the sea for longer periods of time.

Once completed, these maps can be displayed on platforms such as the CHRIS website.

Visit CHRIS.peiclimate.ca to learn more about flooding and erosion hazards

Example of what an SMP could look like: Developed areas not prone to flooding (red line) are protected in the short-term while high flood hazard areas with no infrastructure (green line) are left as natural. Areas that are flood prone with existing infrastructure (orange line) may need temporary armouring to prevent short- to medium-term erosion.

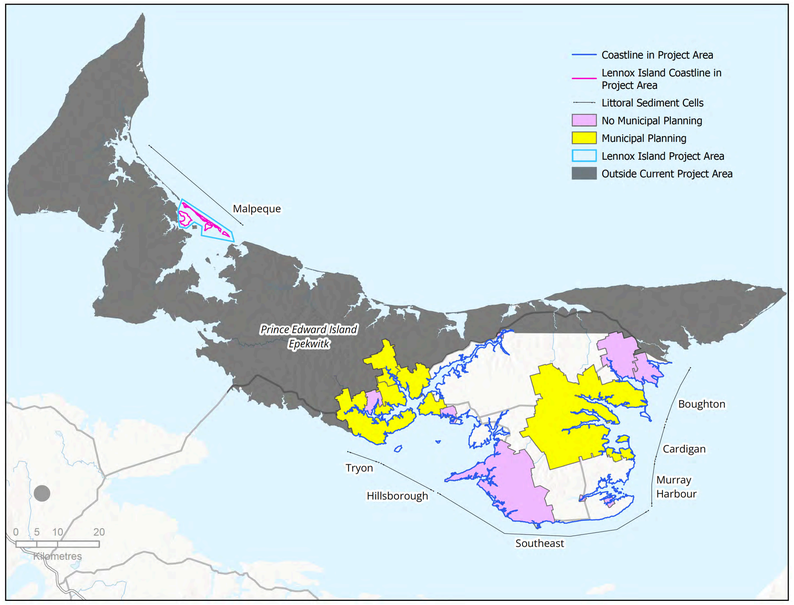
SHORELINE MANAGEMENT PLANS IN PRINCE EDWARD ISLAND

Project Overview

What is the current project?

A Pilot Project for the SMPs is taking place for the southeast portion of PEI, from West River to Boughton.

The project also includes Lennox Island and Pituamkek.



Project timeline

Fall 2025

1

- Community Information Sessions – Introduction and learning from Community

Winter 2025 – Summer 2026

2

- Modelling and drafting

Fall 2026

3

- Community Information Sessions - Presenting findings and learning from Community

Winter 2026 – Summer2027

4

- Preparation of shoreline management plans

Fall 2027

5

- Completion and release of shoreline management plans

Who is involved?

The Pilot Project is funded by the Government of PEI and Natural Resources Canada's Climate Resilient Coastal Communities Program.

Natural Resources Canada / Ressources naturelles Canada

Project Partners

The project team includes a team of expert technical and engagement advisors for all aspects of the project.

Consulting Team

Engineering & lead — CBCL

Planning & engagement — We6 planning group

Nature based solutions — cbwes

Shoreline classification — DHI

Next steps

- Please complete the project survey
- Chat with our team
- More information on climate change adaptation is available through the Government of PEI's website, with specific information on a dedicated website: www.PEIshorelines.ca.

Take the survey:

https://tinyurl.com/msvtnbee

PrinceEdwardIsland.ca/adaptation

www.PEIshorelines.ca

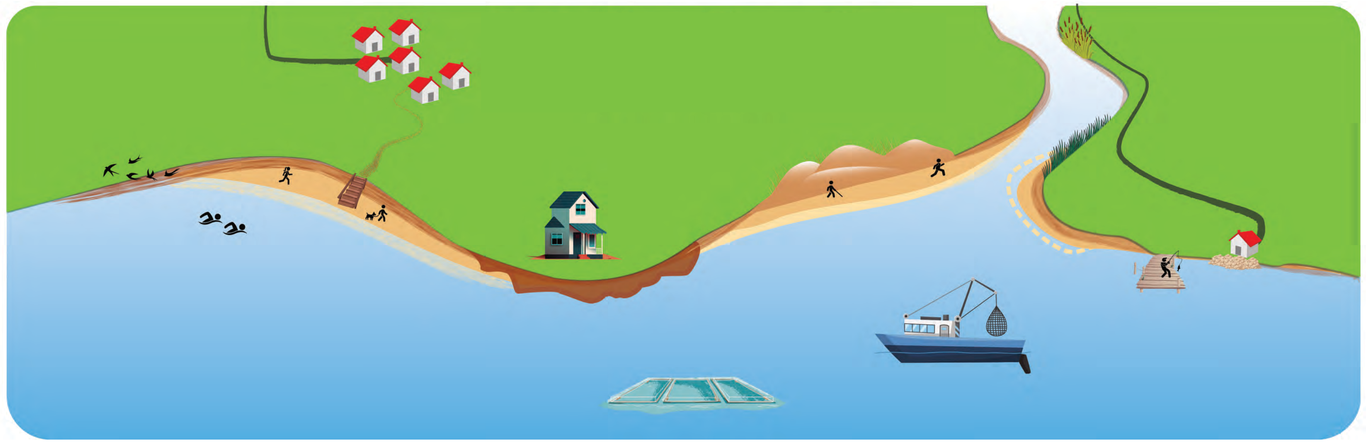
SHORELINE MANAGEMENT PLANS
IN PRINCE EDWARD ISLAND

Final thoughts?

What are your priorities for the shore over time?

For example, protecting bridges, public roads, buildings, protecting land and individual properties, protecting beaches and dunes for wildlife and recreation, protecting coastal harvesting areas, maintaining public spaces, keeping it natural, maintain habitat for animals.

Please add a sticky note with your vision.



Where do you live in relation to the shore?

Using sticky dots, let us know if you live:

On waterfront property

Not on waterfront property

Would you like to share any other comments about the shorelines of PEI or the shoreline management plan project?

Let us know or leave a sticky note.