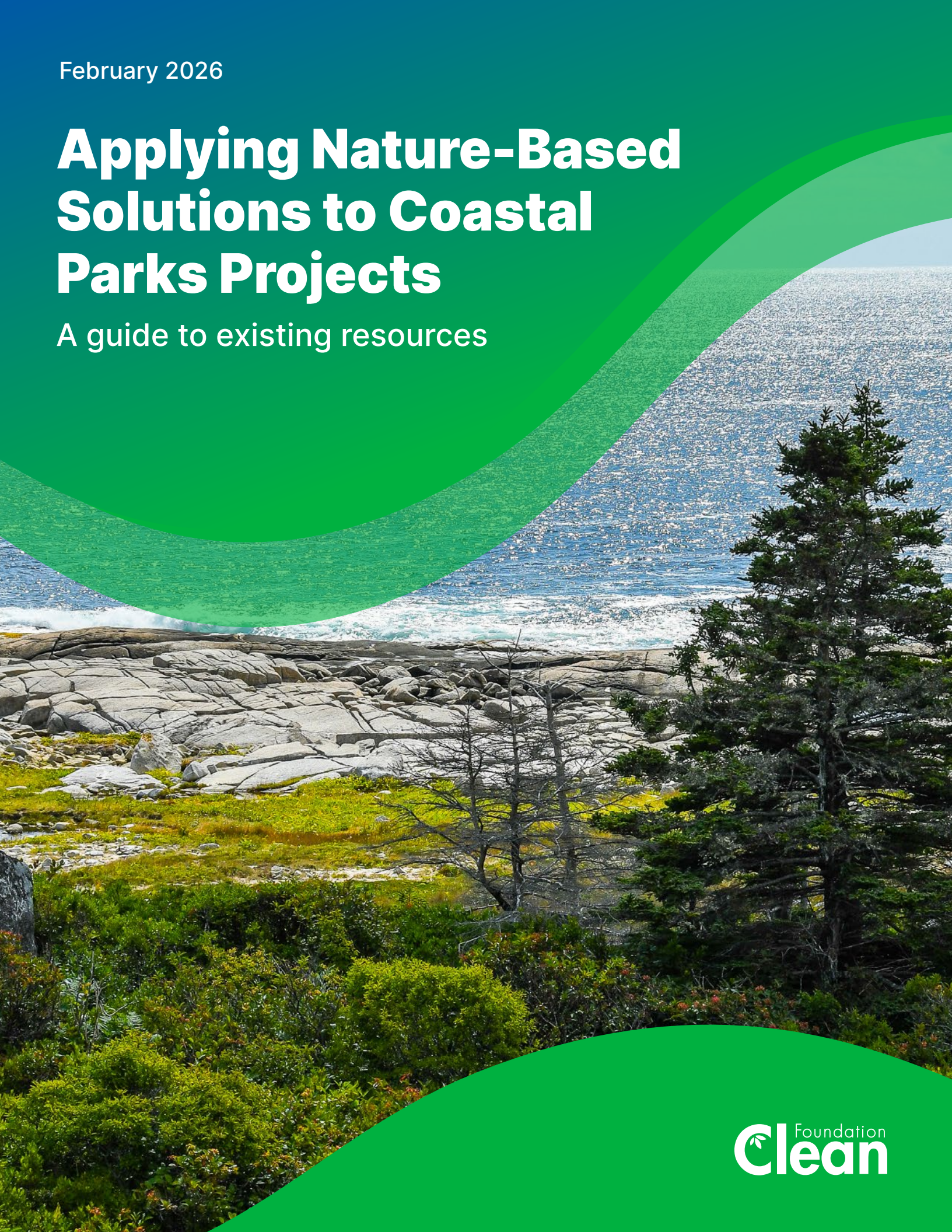
February 2026

Applying Nature-Based Solutions to Coastal Parks Projects

A guide to existing resources



Foundation Clean

Disclaimer

This guide is for informational purposes only and is not a substitute for project-specific professional advice. It does not replace consulting with engineers, land use planners, and/or earth science professionals. Professional contractors and other experts can help you choose the best option for you. Always check with local authorities for any permits or regulations required before starting your project.

Land acknowledgement

We gratefully acknowledge that the Nova Scotia Shared Coastal Parks Sector works in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. These lands and waters are covered by the Treaties of Peace and Friendship, which are living agreements.

Wela'lioq (thank you) to the Mi'kmaw organizations who participated in this work. We deeply value the Knowledge they have shared, which has helped us to better practice Etuaptmumk (Two-Eyed Seeing)—a concept developed by Mi'kmaw Elder Dr. Albert Marshall and his late wife Elder Murdena Marshall. Etuaptmumk values the use of both Traditional Knowledge and Western science.

Funder acknowledgement

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NOVA SCOTIA

Contents

1 Introduction

Nova Scotia is home to more than 13,000 km of coastline. Most of this is privately owned and inaccessible to the public. Coastal parks are designated areas along the coastline that welcome the public for recreation and can help protect important habitats and ecosystems. We must act in the public interest and for the public good in these spaces to ensure healthy ecosystems and build resilience to climate change. Among the tools available, nature-based solutions offers the strongest path forward.

The scope of this guide:

The aim of this guide is to assist Nova Scotians working in the coastal parks sector, with public coastal lands, with different levels of knowledge and experience, to:

- Understand nature-based solutions and their benefits.
- Navigate planning and implementation of nature-based solutions projects.
- Explore reputable resources that support practitioners in understanding, conceptualizing and undertaking nature-based solutions projects.

This guide highlights resources that cover the following:

- Foundational definitions and concepts.
- Perspectives, such as Mi'kmaw guiding principles.
- Considerations for exploring nature-based solutions projects, including risk assessments, regulatory and jurisdictional context, site characteristics and project scoping.
- Approaches to implementing nature-based solutions.

This guide references existing projects as site-specific examples for the reader. These projects provide useful lessons, but they should not be should not be copied directly to other sites. A full site assessment is an essential first step.

Outside the scope of this guide:

In April 2025, the Province of Nova Scotia published Nature-Based Solutions for Coastal Property Owners, for privately held land, that provides information and tools to help coastal property owners learn more about how nature can protect coastal properties from erosion and flooding. If you are an owner of private coastal land, please refer to the coastal property owner guide. Other useful links include the Province of Nova Scotia Coastal Hazard Map and the Province of Nova Scotia Climate Risk Assessment.

Staying current

To stay current with ongoing and planned adaptation projects across Atlantic Canada (including nature-based solutions projects), please refer to:

- CLIMAtlantic facilitates access to data and information that supports adaptation to climate change in Atlantic Canada through collaboration, networking and partnerships.
- Engineering with Nature® highlights projects that combine natural and engineering processes to efficiently and effectively design resilient and sustainable infrastructure.
- Natural Resources Canada's Map of Adaptation Actions highlights examples of communities and sectors adapting to a changing climate across Canada.

2 Key terms

This section defines terms used throughout this guide and in recommended readings. For supporting citations and links, see Appendix Section 2.

Climate change adaptation: Process of adjusting our decisions, policies and actions due to observed or expected changes in climate or its impacts, to avoid or reduce harm. Adaptation can be reactive, occurring after the impacts of climate change are observed; however, the preferred and more cost-effective approach to adaptation is to be proactive and address risks before they manifest.(NBENV)

Climate change mitigation: A human intervention to reduce the sources of greenhouse gases, or to enhance carbon sinks. A source is any process, activity or mechanism – natural or human – that releases greenhouse gasses to the atmosphere. Conversely, a sink is any process, activity or mechanism – natural or human – that removes greenhouse gases from the atmosphere. It's important to focus on both mitigation and adaptation when addressing the climate crisis.(NBENV)

Climate resilient infrastructure: Built and natural infrastructure assets and systems that are situated, planned, designed, built, operated and maintained to protect communities or to withstand and sustain service in the face of climate change.(GCHIC)

Coastal erosion: A natural phenomenon characterized by the loss of material along the coastline, causing it to retreat. It can be caused by waves, ocean currents, precipitation, wind, ice, rising water levels and shrinking ice cover. Human factors, such as the destruction of natural vegetation and the construction of artificial shoreline structures (embankments, walls, etc.) can also cause coastal erosion.(OURANOS)

Coastal flooding: Occurs when low-lying, normally dry land (situated above the highest tide) is submerged by seawater from a combination of high astronomical tide, storm surge and wave action.(UBCM)

Engineered system: Civil infrastructure including buildings or engineering work that interacts with or may be affected by climate.(EC)

Green infrastructure: Natural vegetative systems, engineered features, green technologies and combinations of those, that collectively provide society with a multitude of economic, environmental and social outcomes.(NBENV) Examples include green roofs, green walls and dune restoration.

Grey infrastructure: Features of the built environment made exclusively of materials such as concrete and steel, including bridges, dams, water treatment plants, culverts, ditches and storm drains.(NBENV)

Natural infrastructure: Preserved, restored or enhanced systems and naturally occurring ecological processes to meet targeted infrastructure outcomes. This can include combinations of vegetation and associated biology, land, and water that are intentionally managed to provide multiple benefits. Examples include forest, wetlands and salt marshes.(NBENV)

Nature based infrastructure for coastal flood and erosion risk management: A form of nature-based solution, consisting of natural or built assets that rely on or mimic natural system processes to provide coastal flood and erosion risk management function, while delivering environmental and other societal co-benefits.(NRC)

Nature-based solutions: An umbrella term that refers to a range of ecosystem focused methods to tackling societal challenges. They can be used in both inland and coastal environments. Nature-based solutions are defined as actions that restore, manage, and protect ecosystems while addressing societal challenges like natural disasters and water security to benefit both people's well-being and healthy ecosystems.(IUCN)

Planned retreat: Moving infrastructure, homes, and other land uses away from high-risk areas, reducing human, physical and economic damage from climate change and natural disasters.(NRCAN)

Sea level rise: Rise in water level relative to the land. The local impact of sea level rise depends on the slope and topography of the land. In areas of steep terrain, the shoreline may move little. In low-lying areas, a rise in sea level can move the shoreline a significant distance inland.(CLIMA)

Shoreline hardening: Structures such as retaining walls made of concrete, steel, armour stone, gabion baskets, or wood. Although hardened shorelines can provide some short-term benefits for humans, they can have severe ecological and economic impacts.(WSC)

Storm surge: Occur in coastal areas when strong onshore winds and low atmospheric pressure during passing storms (at times hurricanes), raise water levels along the shore above predicted levels.(CLIMA)

Targeted protection: The process of using biodiversity and climate data to identify and enact new protected areas. Key actions include the greater protection of biodiverse and carbon-rich areas, including moratoria on harvesting remaining carbon-dense old-growth forests, conversion of natural grasslands to other uses, destruction of remaining eelgrass meadows and saltmarshes on all three coasts, and drainage of peatlands for industrial activities.(NCP)

3 Becoming familiar with nature-based solutions

There are many resources for those wanting to learn more about nature-based solutions. This section presents a variety of sources on nature-based solutions both in general and in coastal contexts, tailored for audiences with varying levels of familiarity.

New to nature-based solutions

Learn about key terms and concepts:

- "Nature-Based Solutions for Coastal Property Owners – Nova Scotia" introduces nature-based solutions for those looking to work with natural processes to address the impacts of climate change on their own property.
- "The Guide – Green Communities Guide" discusses the benefits of nature-based solutions, such as ecosystem services, biodiversity, community livability, along with considerations that should be kept in mind when starting a nature-based solutions project.
- "Climate Change Adaptation Resource Pathway (ARP)" is a similar guide to this one and includes definitions, additional resources and training opportunities through a New Brunswick lens.
- "Natural Infrastructure Framework: Key Concepts, Definitions and Terms" provides introductory information from the Canadian Council of Ministers of the Environment.
- "Protected Areas as Nature Based Climate Solutions - CPAWS" highlights the value of ecosystems and nature-based solutions projects as a carbon sink and how they are measured.

Somewhat familiar with nature-based solutions

Learn more about broader nature-based solutions:

- "Nature-Based Solutions for Coastal and Riverine Flood and Erosion Risk Management" explores various characteristics, approaches and considerations for different project sites and nature-based solution approaches.
- "The Nature Conservancy – Using Nature to Reduce Coastal Disaster Risk" and the "Blue Guide to Coastal Resilience" explains how to select nature-based solutions based on the type of hazard that you face and the different ecosystems and natural resources available.

Advanced understanding of nature-based solutions

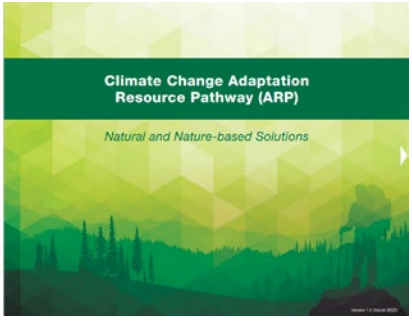
For technical reports that dig into specific nature-based solutions interventions, see the following:

- "Nature-based infrastructure for coastal flood and erosion risk management: a Canadian design guide" provides evidence-based guidance on approaches, methods, and techniques for selecting, designing, deploying, preserving, and adaptively managing nature-based infrastructure in Canadian coastal settings.
- "Coastal Adaptation Toolkit Part 3 Engineering Tools Adaptation Options – CLIMAtlantic" presents intervention options to manage coastal flooding and erosion. It describes the suitability of the tools for different coastal conditions and climate change adaptation objectives. It also identifies the technical and permitting requirements for the adaptation approaches.
- "Atlas Series - Engineering with Nature" outlines case studies that have incorporated nature-based solutions in various ecosystems.

Frequently asked questions

Responses to frequently asked questions about nature-based solutions include:

- What are the differences between green, natural and nature-based infrastructure?
  - ‘Nature-based solutions’ is often used as an umbrella term that includes both green and natural infrastructure. ‘Green infrastructure’ refers to a hybrid approach combining natural and engineered solutions, while ‘natural infrastructure’ makes use of natural landscapes.
- What role does natural infrastructure play in both climate change adaptation and mitigation?
  - Natural infrastructure can contribute to climate change adaptation by creating protective buffers to weather events and climate change impacts. It can also contribute to climate change mitigation by storing atmospheric carbon.
- How can we determine the financial considerations for natural infrastructure?
  - Natural infrastructure can offer services such as drainage systems, sewage systems or dykes. Like engineered infrastructure, natural assets also hold value.



For detailed answers to these questions and more, visit “Climate Change Adaptation Resource Pathway (ARP): Natural and Nature-based Solutions”.

4 Mi’kmaw perspectives and inclusion in nature-based solutions projects

Mi’kma’ki (which includes Nova Scotia) is the traditional homeland of the Mi’kmaq. The Mi’kmaq have adapted with nature across generations. The following resources can help you practice Etuaptmumk (Two-Eyed Seeing) and work toward inclusion in your projects. Etuaptmumk, a concept developed by Elders Dr. Albert and Murdena Marshall, values the use of both Traditional Knowledge and Western science.

Ta'n Weji-sqalia'tiek
Mi'kmaw Place Names

- “Ta’n Weji-sqalia’tiek (Mi’kmaw Place Names) Digital Atlas”, developed by The Confederacy of Mainland Mi’kmaq and Mi’kmawey Debert Cultural Centre, hosts a map of Mi’kmaw place names across what is now Nova Scotia.

- To learn more about Msit No’kmaq, Netukulimk and other Mi’kmaq guiding principles, including Etuaptmumk, visit the video series developed by Unama’ki Institute of Natural Resources:
  - “Maliamuki’k Msit Ko’kqmanaq”
  - “Unama’ki Institute of Natural Resources: Guiding Principles”
- “Malikewe’j: Understanding the Mi’kmaq Way | Unama’ki Institute of Natural Resources” discusses the Mi’kmaq Grand Council’s traditional role in resource management, with lessons on how to re-establish the “Mi’kmaq way” as community caretakers.
- “Ethical Space - Indigenous Climate Monitoring Toolkit” explains the concept of Ethical Space, a framework for collaboration between Traditional Knowledge and non-Indigenous knowledge systems.

- "Operationalizing Ethical Space in IPCAs and Crown Protected and Conserved Areas" provides examples of Ethical Space and Two-Eyed Seeing applied in protected and conserved areas.
- To see Mi'kmaw principles in action, and in the nature-based solutions context, see the following:
  - "Union of Nova Scotia Mi'kmaq and Kwilmu'kw Maw-klusuaqn: Climate Adaptation Stories: Protecting the Sacred Shores of Mniku - CLIMAtlantic"
  - "Unama'ki Institute of Natural Resources: Indigenous Protected and Conserved Areas"

5 Coastal nature-based solutions project examples

Across Canada, many provinces and municipalities are advancing nature-based solutions, often drawing inspiration from Indigenous Traditional Knowledge. The following section highlights nature-based solutions projects that show how these strategies are being applied in the Atlantic region, across Canada, and around the globe.

Examples of coastal nature-based solutions in the Atlantic region

- Union of Nova Scotia Mi'kmaq & Kwilmu'kw Maw-klusuaqn: "Climate Adaptation Stories: Protecting the Sacred Shores of Mniku – CLIMatlantic"
- Coastal Action: "Mahone Bay Living Shoreline"
- Nature New Brunswick: "Coastal Synergy: Blending Living Shorelines with Bank Swallow Habitat"
- Trout River Environmental Committee: "Living Shorelines: Nature-Based Shoreline Protection on PEI"

Examples of coastal nature-based solutions in National Parks and across Canada

- Forillon National Park: Coastal Ecosystem Restoration
  - This award-winning project reintroduced vegetation to the shores of Forillon National Park, relocated park infrastructure and monuments, and implemented citizen science coastline monitoring through COASTIE. COASTIE, a collaboration between Parks Canada and the University of Waterloo, invites park visitors to take and submit photos of coastlines using designated science stations—called COASTIE stations—to help monitor coastal changes over time.

- Prince Edward Island National Park: Dune Recovery
  - NCC: Where We Work - Prince Edward Island - The healing power of dunes
  - This collaborative project and campaign by Parks Canada, the Nature Conservancy of Canada and Prince Edward Island Nature Trust helped dunes recover after Hurricane Fiona by restoring grass and generating public support to stay off the recovering dunes while enjoying park landscapes.
- Colquitz Park Green Shores Restoration Project - District of Saanich
  - The District of Saanich in British Columbia is developing a Green Shores Certified shoreline restoration project in their municipal park, Colquitz Park. Consultants and residents of Saanich are working collaboratively on the design.
- Map of Adaptation Actions— Canada in a Changing Climate
  - This map houses a collection of climate change adaptation examples located across Canada.

Global examples

- Project Dashboard - Engineering with Nature
  - This map displays a collection of climate change adaptation project examples globally.
- Toolbox on Financing Nature-Based Solutions - CPI
  - This report presents case studies that have used blended finance to surpass barriers to investments in nature-based solutions.

6 Defining the scope and objectives of a nature-based solutions project

Building a team

Adaptation projects, including nature-based solutions, must address a variety of systems. Diverse project teams strengthen design, development, implementation and monitoring by incorporating varied perspectives and expertise. The following groups, while not exhaustive, contribute to the effective design of nature-based solutions projects:

- Mi'kmaw partners
- local land use planners
- coastal engineers
- coastal geomorphologists
- landscape architects
- archaeologists
- GIS specialists
- ecologists
- policy specialists
- municipal, provincial, and/or federal officials as necessary depending on the project site jurisdiction

To learn more on available local resources, organizations and practitioners, visit CLIMAtlantic's networking map.

The Mahone Bay Living Shoreline, stewarded by Coastal Action, is an example of a local project that demonstrates the success of nature-based solutions and working together in diverse teams.

Project objectives and considerations

Before undertaking a nature-based solutions project, proponents must define the what, where, why and how of the project. These answers will guide the project's conceptual and technical design, along with any ecological and socio-economic features of the site.

- Section 3.1 of "Managing Natural Assets to Increase Coastal Resilience Guidance Document for Municipalities - MNAI" provides guiding principles on setting objectives for your project.
- Section 3.4 of "Combatting Canada's Rising Flood Costs - IBC" discusses considerations related to the feasibility of your project.
- Section 6 of "Nature-Based Infrastructure for Coastal Flood and Erosion Risk Management: a Canadian Design Guide - NRC Publications Archive" provides information on environmental region-based considerations.
- "International Guidelines on Natural and Nature-Based Features for Flood Risk Management - Engineering with Nature" discusses conceptual design, design, construction and implementation phase considerations.

Communication and engagement

Building the case for a nature-based solutions project

Communication with partners and communities is essential when planning nature-based solutions and adaptation projects. Communities often need education and engagement to understand why adaptation matters and how nature-based solutions can improve public coastal spaces. The resources below help make the case for nature-based solutions.

- Chapters 1 and 2 of "Combatting Canada's Rising Flood Costs – IBC" discuss the need for climate change adaptation in Canada and the role of natural infrastructure.

- Section 3.5 of "Nature-Based Solutions for Coastal and Riverine Flood and Erosion Risk Management – CSA Group" explores the benefits of nature-based solutions projects.
- Section 6 of "International Guidelines on Natural and Nature-Based Features for Flood Risk Management - Engineering With Nature" provides guidance on qualitative and quantitative assessments for related projects.

- Sections 2 and 3 of "Green Shores 2020: Impact, Value and Lessons Learned" summarizes the social impact and economic analysis to help support your project case.
- "Managing Natural Assets to Increase Coastal Resilience Coastal Asset Guidance document for Municipalities" introduces a modelling tool to help assess the value and benefits of a coastal nature-based solutions project.
- "Nature-Based Solutions Installation and Maintenance Costs" from the National Oceanic and Atmospheric Administration, provides general cost estimates for related solutions.

Community engagement

Intentional engagement with communities strengthens nature-based solution projects by ensuring local input is incorporated, leading to better outcomes and greater impact.

- "International Guidelines on Natural and Nature-Based Features for Flood Risk Management - Engineering with Nature" provides guidance on engagement planning, supported by case examples, including strategies on how to work toward meeting the needs of Indigenous communities.
- Sections 5.2.1 and 7.5 of "Nature-Based Solutions for Coastal and Riverine Flood and Erosion Risk Management" offer additional context on engagement approaches.
- Section 2.1 of "Green Shores 2020: Impact, Value and Lessons Learned" presents examples of engagement activities used in previous initiatives.

7 Site assessment and planning

Once project teams have defined their goals and objectives, they should assess the proposed site. Site assessments provide critical insights to guide design for a given location and help achieve the best results. This section outlines key different assessment types and their potential components.

The first step is to determine whether the site is suitable for a nature-based project and if it would benefit from that approach. Project participants start by evaluating a site's factors such as:

- Site characteristics—altitude, soil quality, geology, water quality, water levels and watershed features
- Habitat-related features—species distribution, vegetation and public access
- Constraints—existing or dominant vegetation, historical records of native species, and infrastructure and services

Further information and a site assessment checklist is available in the Site Assessment Handbook – Woodland Trust.

- Section 4 of "Green Shores 2020: Impact, Value and Lessons Learned" provides overarching considerations for site assessments in Atlantic Canada, including a summary of data sources, challenges and opportunities regarding socioeconomic context.

Common nature-based solutions projects can include ecological, socio-economic and risk assessments. The following sections provide resources to support these types of assessments.

Ecological assessment

Ecological assessments examine a project area's beneficial and at-risk features within the environmental system and evaluate how the proposed project can support and enhance these ecosystems. The following resources offer insights on selecting ecological features to include in an assessment, their compatibility with nature-based solutions and their ability to sequester carbon:

- "Nature Based Climate Solutions Toolkit - Nature Canada" gives an overview of nature-based solutions separated into different landscapes or project approaches.
- "Protected Areas as Nature Based Climate Solutions" presents information and data on carbon sequestration of various ecosystems in Canada.
- Chapter 5 of "CLIMAtlantic's Coastal Adaptation Toolkit Part 1 Guidance for Selecting-Adaptation Options" provides insight on general characteristics, features and considerations of various ecosystems and their compatibility with certain adaptation options.

Socio-economic assessment

A socio-economic assessment examines site features that contribute to social well-being and economic development. Aspects of each assessment often overlap because people and the environment are closely connected. The assessments will share much of the same information acquired while building your case, as discussed above. Socio-economic benefits of ecosystem services in a community can include flood reduction, food production, tourism, recreation, health and improved water quality.

- See Chapter 2.3 of "Combatting Canada's Rising Flood Costs - IBC" for case studies on the economic assessment of nature-based solutions projects. Refer to Chapter 3.3 for an explanation of how engagement with Indigenous partners and relevant organizations can be a method of understanding the priorities of the community and, in turn their social and economic resilience.
- Climate Insight's interactive map explores the socio-economic and climate vulnerabilities in the area adjacent to a potential nature-based solutions project. Additionally, Climate Insight provides case studies and a breakdown of the methodologies used.

Risk assessment

A risk assessment identifies the areas of the coastal system most vulnerable to climate impacts and evaluates how the proposed project can address or mitigate those risks. It also examines potential risks tied to project implementation.

Climate change risk assessment

Conducting a climate change risk assessment helps project teams understand climate-related risks at the site and develop measures to reduce them.

Information from the site, ecological and socio-economic assessments can inform the climate change risk assessment by identifying vulnerable elements such as infrastructure or land uses that are at risk, and by helping to prioritize the project actions.

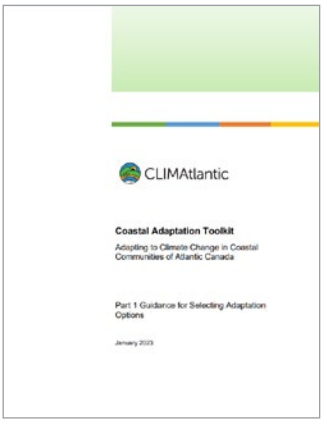
- CLIMAtlantic's "Coastal Adaptation Toolkit Part 1 Guidance for Selecting-Adaptation Options" provides a general overview of risk assessments.
- Climate Change Risks Assessment | Government of Prince Edward Island is an example of a comprehensive risk assessment. A smaller project or site-specific risk assessment would be less complex than this example.

Site planning

Site planning represents one of the most technical phases in developing nature-based solutions projects. To support this phase, teams gather essential information through site assessments, as outlined above. This section includes considerations and best practices for successful site planning.

- "Changing Climate, Changing Communities: Workbook for Municipal Climate Adaptation – ICLEI" provides a structured workspace to navigate technical aspects of nature-based solutions projects. Worksheets 7-13 are particularly relevant to nature-based solutions and parks work.
- The implementation overviews in "The Guide – Green Communities Guide" offer considerations of the economic, social and environmental aspects of a nature-based solutions project to align project objectives and site assessment results with an appropriate approach.

- CLIMAtlantic's "Coastal Adaptation Toolkit Part 1 Guidance for Selecting-Adaptation Options" provides information on selecting appropriate nature-based solutions informed by results of a site assessment. Specifically:
  - Chapter 3 provides an overarching review of the different adaptation strategies.
  - Chapter 4 provides a framework on how to choose the right adaptation strategy based on your site assessment results.
  - Chapter 5 describes suitable approaches based on a particular coastal system.



Site design includes highly technical elements such as, but not limited to, creating a project map and site plan, identifying required materials and outlining a step-by-step process to complete the project on the ground.

- CLIMAtlantic's "Coastal Adaptation Toolkit Part 3 Coastal Intervention Options & Engineering Considerations" provides insight on various engineering approaches, methodologies, site images and diagrams to assist with site planning.
- Section 7 of International Guidelines on Natural and Nature-Based Features for Flood Risk Management - Engineering with Nature provides information on adaptive management planning.

Project timeline

Many factors, such as scale and design, shape the project timeline. This timeline helps inform the project budget, anticipated impacts and the considerations of working in public spaces. The project team should be consulted when creating the timeline to ensure all relevant factors are considered. A well-designed timeline also includes buffers for unexpected delays or issues.

8 Land use and regulations

Land use and planning for nature-based solutions projects can be complex, especially along coastal areas where legislative and permitting jurisdictions intersect.

During the project planning stage, it is essential to identify the relevant jurisdictional authorities and permitting requirements. For example, a nature-based solutions project in Nova Scotia falls under municipal or provincial land planning regulations if it sits above the ordinary high-water mark. If the project crosses below the high-water mark, it falls under federal and provincial jurisdiction. Additional or alternative processes may also apply when working within Indigenous parks or Indigenous communities.

To ensure compliance, a project must align with local land use policy and by-laws and adhere to all relevant municipal, provincial and federal permitting requirements. Early in the planning stages the team should proactively engage with the appropriate planning and permitting departments.

- Section 2.4 of CLIMAtlantic "Coastal Adaptation Toolkit Part 2 Land Use Planning Tools Adaptation Options" provides an overview of the local land use planning decision-making authority and relevant legislation in Nova Scotia. Sections 3.2 and 3.3 provide additional insight on policy and planning framework tools, and regulatory and land use change tools.

9 Funding opportunities

This section highlights potential funding opportunities to finance nature-based solutions programs and projects.

Various organizations and institutions offer cyclical funding for nature-based solutions projects, with different funding streams offered each year.

The following organizations have provided funding for adaptation and nature-based solutions projects in the past and are good starting points when seeking project funding:

- Government of Canada
  - Several departments offer funding for nature-based solutions projects, such as Natural Resources Canada and Environment and Climate Change Canada.
  - Tip: projects may be eligible for funding under multiple departments, so explore all available options.
- Province of Nova Scotia
  - Like the federal government, a project may be eligible for funding through multiple departments.
- Municipalities
  - The Federation of Canadian Municipalities is a federal organization that has several funding programs dedicated to climate change adaptation, specifically intended for municipalities and organizations that support them.
  - Nova Scotia Federation of Municipalities offers supports for the 49 municipalities within Nova Scotia, including climate change related funding programs.

- Academic institutions
  - If the proposed project has a research component, academic institutions access different funding streams. Partnering with them can also provide additional project team capacity and expertise, alongside potential funding.
- Philanthropic foundations
  - Some private organizations have financial incentive to fund adaptation projects like nature-based solutions. Banking institutions and insurance companies, including the Royal Bank of Canada and Manulife, have offered funding opportunities.
- International organizations
  - These funds can be highly competitive but may offer a potential source of funding. Such organizations may be governmental in nature, such as the United Nations or the World Bank, or may come from cause-based organizations like the World Wildlife Fund.

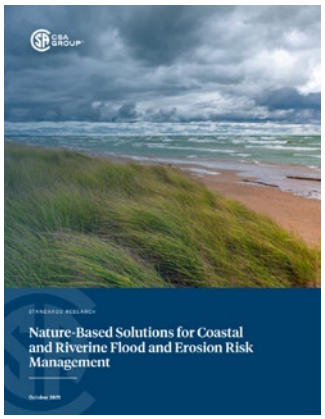
Helpful resources on how to navigate the funding landscape:

- CLIMAtlantic's funding opportunities available in the Atlantic region.
- Government funding: tips for a strong application provides general advice on applying for government funds.
- Toolbox on financing nature-based solutions - CPI gives a high-level overview on funding nature-based solutions projects globally, including issues and lessons learned from other jurisdictions.

10 Monitoring and reporting

The final steps in nature-based solutions projects include ongoing monitoring and progress reporting. This section provides resources to assist with this process.

Ongoing monitoring helps assess ecosystem response and guide adaptive management. Collecting long-term data informs and strengthens future project planning. The resources below offer general insight into monitoring and reporting:



- Section 5.2.4 of "Nature-Based Solutions for Coastal and Riverine Flood and Erosion Risk Management – CSA Group" provides general information on best practices and suggests parameters to follow.
- Stage 6, "Implement and Monitor" of "The Blue Guide to coastal resilience: Protecting coastal communities through nature-based solutions" explains the importance of monitoring and maintaining a project.
- Section 6.6 of "International Guidelines on Natural and Nature-Based Features for Flood Risk Management - Engineering With Nature" explores monitoring and managing the performance and benefits of nature-based projects.

Nature-based solutions projects may explore citizen science monitoring, which allows site visitors to submit their own monitoring observations or contact the project team if the project site appears damaged.

- Coast Reach and COASTIE are examples of citizen science monitoring projects that track changes to the coastline through images submitted by the public.

Acknowledgements

Nova Scotia's Shared Coastal Parks Sector is a diverse group of Mi'kmaw partners, local partners and other organizations who are working together to create a more resilient coastal parks system. The Sector undertakes projects that advance climate change adaptation in publicly accessible coastal land including Indigenous, federal, provincial and municipal parks, as well as land managed by stewardship, land and nature conservation organizations.

Thank you to the Sector members for sharing their time, knowledge and perspectives to inform the development of this guide. The Nova Scotia Shared Coastal Parks Sector is made up of representatives from the following organizations:

- Province of Nova Scotia
- Atlantic Coastal Action Program Cape Breton
- Boreas Heritage Consulting
- Clean Foundation
- Confederacy of Mainland Mi'kmaq
- Dalhousie University
- Ecology Action Centre
- Halifax Regional Municipality
- Nova Scotia Trails Federation
- TransCoastal Adaptations
- Unama'ki Institute of Natural Resources

Nova Scotia's Shared Coastal Parks Sector is supported by funding from the province's Climate Change Plan for Clean Growth.

Appendix

List of resources/sources

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These sources are intended to be introductory and general.

If you have specific project considerations or questions, please email us at: coastalparks@cleanfoundation.ca