Cole Harbour-Lawrencetown Coastal Heritage Park System

Management Plans for Rainbow Haven Beach and Lawrencetown Beach



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Executive Summary

The Cole Harbour-Lawrencetown Coastal Heritage Park System is a large provincial park system comprised of smaller provincial park properties: Rainbow Haven Beach, Lawrencetown Beach, Conrods Beach, Stoney Beach, Terminal Beach, Cole Harbour Heritage Park, and portions of the provincially owned former trail corridor which now serves as the Salt Marsh Trail, Atlantic View Trail and a portion of the Trans Canada Trail. This management plan focusses on Rainbow Haven Beach and Lawrencetown Beach, with each park property having its own section as they have different uses, impacts and needs. The plan assists in the development of future work plans for Rainbow Haven and Lawrencetown Beach, based on information gathered through previous studies, data, and public and stakeholder engagement. Feedback from the various engagement sessions have been incorporated into this document.

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1.0 Introduction

Cole Harbour-Lawrencetown Coastal Heritage Park System is a 747-hectare Natural Environment class park, located in Halifax County. This coastal park system offers a range of outdoor recreation opportunities, including supervised swimming, beach access, surfing, hiking, and picnicking, and plays an important conservation role, encompassing a diversity of coastal landscapes and habitats.

The park system includes:

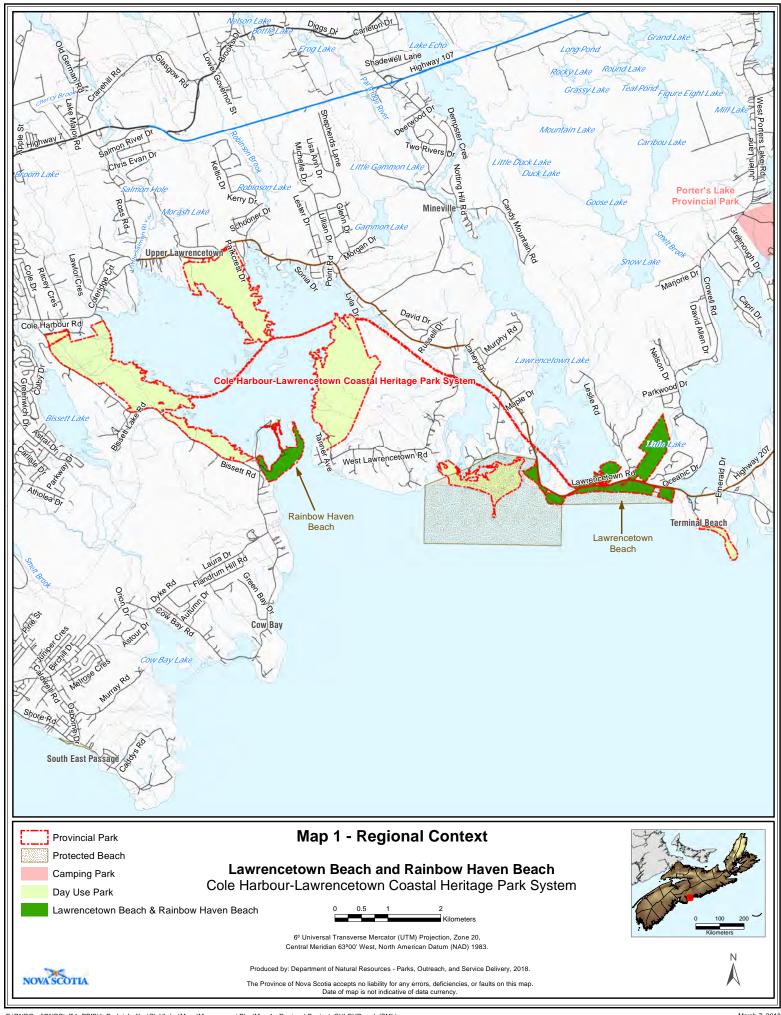
- Rainbow Haven Beach (Section 2.0)
- Lawrencetown Beach (Section 9.0)
- Conrods Beach
- Stoney Beach
- Terminal Beach
- Cole Harbour Heritage Park, and Salt March and Atlantic View Trails

In 1975, the Government of Nova Scotia began to acquire properties within the Cole Harbour – Lawrencetown area in 1975 for park purposes. In 1976, Lawrencetown Beach was protected under the *Beaches Act* (as part of Conrod's and Lawrencetown Protected Beach) (Government of Nova Scotia 1989a). In 1983, the Cole-Harbour Coastal Heritage Park System was proposed. In 1987, Lawrencetown Beach and Rainbow Haven Beach were designated under the *Provincial Parks Act* (Government of Nova Scotia 1989b) and were re-designated in 1998 as part of the Cole Harbour-Lawrencetown Coastal Heritage Park System.

Rainbow Haven Beach and Lawrencetown Beach are popular beach parks, attracting both local residents and tourists alike. Rainbow Haven Beach is maintained by the Department of Natural Resources and Renewables (the Department) district office in Waverley and Lawrencetown Beach is maintained by the district office in Jeddore (Map 1– Regional Context).

The purpose of Cole Harbour — Lawrencetown Coastal Heritage Park System is to provide opportunities for low-intensity day use recreation and natural and cultural heritage appreciation, while protecting the park's landscape, biodiversity, and natural and cultural heritage. The purpose of a park management plan as defined in the *Provincial Park Regulations*, is to provide direction for the protection and management of a park and provision for visitor facilities and services (Government of Nova Scotia 1989c). A completed management plan provides guidance to develop budgets and timelines related to project phases, infrastructure, and park designs to meet the needs of the park and its users. The land constraints inherent within a natural environment are numerous; therefore, environmental reports by field experts may be required to ensure park sustainability.

This management plan applies to Rainbow Haven Beach and Lawrencetown Beach. Management plans for the other areas may be completed as required. Feedback from the various engagement sessions have been incorporated into this document.



1.1 Planning Context

The Management Plan has been prepared consistent with direction contained in:

- The Nova Scotia Provincial Parks Act (Government of Nova Scotia 1989b);
- The Nova Scotia Beaches Act (Government of Nova Scotia 1989a);
- The Path We Share: A Natural Resources Strategy for Nova Scotia 2011-2020 (NS DNR 2011); and
- Our Parks and Protected Areas: A Plan for Nova Scotia (Government of Nova Scotia 2013).

1.2 Park Classification and Zoning

Park Classification is a key element in determining the general policy basis for park management, which determines the type and extent of activities that occur in a park.

Within the Provincial Park System; a park can be classified in one of seven classifications as defined under the *Provincial Park Regulations* (Government of Nova Scotia 1989c):

- Wildland Park natural landscapes and suited to low-intensity recreational use;
- 2. <u>Natural Heritage Reserve</u> protects natural features, sites, objects or landscapes of Provincial significance primarily for scientific and educational purposes;
- 3. <u>Historic Park</u> preserves and protects distinctive historical resources in open settings and managed for interpretive and educational research purposes;
- 4. <u>Natural Environment Park</u> incorporates representative natural landscapes in combination with outstanding recreational resources;
- 5. <u>Outdoor Recreation Park</u> incorporates quality recreational resources capable of supporting a wide variety of outdoor activities and is established to meet the recreational needs of residents and visitors;
- 6. <u>Wayside Park</u> provides specific recreational facilities and services adjacent to travel corridors or local communities and may be a roadside picnic area, scenic viewpoint, access point, boat launch, or small park area of local importance; or
- 7. <u>Wildlife Park</u> provides opportunities for the public to view wildlife in controlled settings and to gain an understanding and appreciation of the characteristics and habitat requirements of wildlife populations in the wild.

Cole Harbour – Lawrencetown Coastal Heritage Park System is classified as a Natural Environment Park.

The Cole Harbour – Lawrencetown Coastal Heritage Provincial Park System is located in Halifax County, encompassing several properties spread between Cow Bay and Three Fathom Harbour.

• Rainbow Haven Beach is located approximately 14 km east of downtown Dartmouth. The civic

- address is 2248 Cow Bay Road (Hwy 322), Cow Bay (Section 6, Map 2: Park Boundary Rainbow Haven Beach).
- Lawrencetown Beach is located approximately 22 km from downtown Dartmouth. The civic address is 4348 Lawrencetown Road, Lawrencetown (Section 13, Map 12: Park Boundary Lawrencetown Beach).

Zoning is a tool that spatially delineates areas within a park that have common management objectives, intentions, values and/or uses. Regulations provided in the section below, are applied in each zone to enable different management approaches that are appropriate for those areas, as outlined in the *Provincial Park Regulations* (Government of Nova Scotia 1989c).

- Environmental Protection Zone (EP) includes areas of a park that are highly sensitive or contains significant natural or historic resources that require protection. These areas provide protection of habitat for flora and fauna.
- Resource Conservation Zone (RC) may also incorporate and protect small, scattered sites with
 highly sensitive or significant natural or historic sites and features. These sites and features may
 otherwise warrant inclusion within an Environmental Protection Zone but due to the limited
 landbase involved, have been incorporated into the Resource Conservation Zone. A full range of
 protection options must be considered when planning activities or land use within the RC Zone.
- Recreation Development Zone (RD) includes an area of a park that can support the development
 of facilities and services associated with outdoor recreation activities and more intensive visitor
 use. This zone is used to focus park facilities and services, as well as public use, within the most
 appropriate park areas without compromising the natural or cultural heritage values of the park.

Based on the described zones, the Department will evaluate lands to determine if infrastructure will be permitted and, if so, to what extent. The zones for Rainbow Haven Beach and Lawrencetown Beach were established using available information and knowledge at the time of the review.

1.3 Park Objectives

Management of the Cole Harbour – Lawrencetown Coastal Heritage System shall meet the following objectives and will be consistent with the mandate of Nova Scotia Provincial Parks, as outlined in the *Provincial Parks Act* (Government of Nova Scotia 1989b).

Provincial Parks Act Objectives:

- Outdoor Recreation: provide opportunities for a wide variety of outdoor recreational opportunities ranging from relatively high intensity near-urban facilities to low intensity wildland experiences.
- **Protection**: preserve unique, rare, representative or otherwise significant elements of the natural environment and historic resources of Nova Scotia.
- Education: provide opportunities for exploration, understanding and appreciation of Nova

Scotia's natural and cultural heritage through interpretation, information and educational programs.

- **Tourism**: provide resident travelers and out-of-province visitors with opportunities to discover, experience and enjoy Nova Scotia's distinctive outdoor recreational and heritage resources.
- Maintain the land base of the park system: assemble and maintain, within a system of
 provincial parks and park reserves, a land base adequate to meet present and future needs of
 Nova Scotians for outdoor recreation and heritage resource protection.

2.0 Rainbow Haven Beach Management Plan

Rainbow Haven Beach provides opportunities for beach activities, picnicking, and nature appreciation, for both Nova Scotians and visitors alike (Map 2 - Park Boundary).

2.1 Existing Park

Rainbow Haven Beach provides opportunities for day use recreation that includes beach walking, supervised swimming, scenic and wildlife viewing, birdwatching, picnicking, relaxation, experiencing solitude, photography, nature appreciation, body surfing, stand up paddle boarding, kayaking, on-leash dog walking, and bicycling (Map 3- Park Infrastructure).

Currently, beach access can be obtained through a central accessible boardwalk, two additional boardwalks, or by trail. Camping and open campfires are not permitted at Rainbow Haven Beach or within the Cole Harbour-Lawrencetown Coastal Heritage Park System. Camping opportunities are provided nearby at Porters Lake Provincial Park. Swimming is a popular activity at Rainbow Haven Beach and is supervised by the Nova Scotia Lifeguard Service (NSLS). Supervised swimming is typically from the start of July to end of August. The location of the supervised area may vary depending on conditions; but is approximately 400 metres in width and is marked by red and yellow flags. Rainbow Haven Beach has a tidal channel containing strong currents that are potentially dangerous to swimmers. During the 2023 summer season; Rainbow Haven Beach saw over 22,000 visitors with an average of 207 people per supervised swimming days (NSLS, n.d.).

2.2 Landscape

Rainbow Haven Beach extends over 1 km from the western park boundary to the saltmarsh leading into Cole Harbour. The beach has an extensive dune ecosystem, which provides high biodiversity values and wildlife habitat.

Rainbow Haven Beach area was formed overtime by coastline sedimentation through wave action, involves salt marshes and marine deposits as well as Stony Till Plain (Ground Moraine) which was flatto rolling with surface boulders (Government of Nova Scotia 2006) (Map 4 - Surficial Geology). Rainbow Haven Beach is located within the Eastern Shore Ecodistrict (NS DNR 2017). The Eastern Shore Ecodistrict is a coastal system that consists of Salt Marsh (WWMS Ecosection) communities (NS DNR 2017) as well as eroding drumlins, barrier beaches and estuaries (Map 5 - Ecological Land Classification).

Rainbow Haven Beach area has limited trees or forests within the park boundaries. Non-forested cover (Map 6 - Non-Forested, Map7 – Small Patch Ecosystem) within Rainbow Haven Beach are categorized as beach and coastal habitat areas; this area is also identified as a small patch ecosystem-beach/dune. Rainbow Haven Beach and some of the surrounding areas have been identified as significant habitat for Species at Risk (SAR) and migratory birds (Map 8 - Significant Habitat). Much of the interior waters are considered salt marsh wetlands (Map 9 - Wetlands). The water table and drainages in the Rainbow Haven Beach area are identified in Map 10 - Drainage. Infrastructure development in these areas will require special design measures and mitigation based on location.

Although there are no registered archaeological sites located within the planning areas at Rainbow Haven Beach, there are several historic (i.e. post-contact) registered archaeological sites nearby. The lack of registered archaeological sites within the park lands is likely more the lack of archaeological investigation in these areas rather than an indication that these areas do not have



Figure 1: 1954 (top) and 1974 (bottom) aerial images of Rainbow Haven Beach, showing the sedimentation of the western seaward shore. Early maps show that the original entrance channel into Cole Harbour passed through the historical dyke bridge, while the current entrance channel to the east is newly formed (Davies et al., 2011).

archaeological sites. For this reason, an archaeological resource impact assessment may be completed if any new park infrastructure requires significant ground disturbance (e.g., new park building), as directed by the Department of Communities, Culture, Tourism and Heritage.

2.3 Biodiversity

Rainbow Haven Beach has been identified as a significant area for a variety of migratory birds and provides habitat for many invertebrates such as dragonflies and butterflies. Piping Plovers have not been recorded to nest at Rainbow Haven, however, they have been spotted on the beach and may use the area as feeding habitat during migrations. The website eBird (2017a) provides an unofficial bird list that includes 159 species sighted at Rainbow Haven Beach. No rare plants have been documented in the Rainbow Haven Beach area.

3.0 Rainbow Haven Beach Zoning

The zoning for Rainbow Haven Beach was determined using available data sources, maps, and evaluating the information to make an informed decision.

Rainbow Haven Beach includes four zones, described in Table 1 and Map 11 - Rainbow Haven Beach Zones.

4.0 Issues and Concerns

4.1 Natural

Rainbow Haven Beach is susceptible to coastal processes (storm events with high tidal surges or wind driven waves) that cause site erosion, particularly along the dune faces. Sea level rise may threaten the dune system, biodiversity values, and park infrastructure. These dynamic systems may cause present beach systems to change. This information is key to the planning process for potential infrastructure design and impacts.

Vegetation communities within park systems may be impacted by the introduction of invasive flora and fauna species; where species are introduced to a system will be dealt with on a case-by-case basis.

4.2 Anthropogenic

The dune systems at Rainbow Haven Beach are under threat from pedestrian traffic and dogs off-leash, causing trampling and loss of marram grass, leading to dune erosion (Figures 2 and 3).



Figure 2: Unauthorized trails through the dunes at Rainbow Haven Beach.



Figure 3: Unauthorized foot path through the dune at Rainbow Haven Beach.

Table 2: Rainbow Haven Beach Zoning (refer to Map 11).

Zone Name	Description	Management Intent	Planning Considerations
Environmental Protection Zone (EP) (8.5 hectares)	Sand dunes and saltmarsh areas on the eastern side of the park.	To protect highly sensitive natural resources. Only interpretive, educational or scientific activities will be permitted, where these activities do not conflict with the underlying protection objectives of the zone. No trails or infrastructure is permitted.	This Zone includes two sensitive ecosystems, the dune system and salt marsh. Currently, there is a network of unauthorized trails throughout the dune system, which is inconsistent with the intent of the zone, and is considered a non-conforming use.
Resource Conservation Zone 1 (RC1) (10.9 hectares)	Western portion of the sand dunes and a small area of white spruce forest.	To protect natural, cultural, and low-impact recreational features. Only activities that do not conflict with the inherent natural character and aesthetic qualities of the park resource base will be permitted. There is currently a network of unauthorized trails throughout the dune system within this zone, which is inconsistent with the intent of the zone, and is considered a non-conforming use.	 This Zone connects the core facility and Recreation Development Zone to the beach, and allows for limited beach access points and associated infrastructure (e.g. boardwalks). This Zone may also incorporate and protect small, scattered sites with highly sensitive or significant natural or historic sites and features. There sites and features may otherwise warrant inclusion within an Environmental Protection Zone but due to the limited landbase involved, have been incorporated into the Resource Conservation Zone. Planning for any activities or land uses within the Resource Conservation Zone must consider the full range of protections options as the priority. This Zone includes a large portion of the park's dune system, as well as infrastructure to support beach access and maintenance.
Resource Conservation Zone 2 (RC2)	Sandy beach.	To protect natural, cultural, and low-impact recreational features. Only activities that do not conflict with the inherent natural character and aesthetic qualities of the park resource base will be permitted.	 This area is the focus of the park's recreational activities, yet also provides habitat to the endangered piping plover. Piping plovers have not nested at Rainbow Haven Beach for several years, they have been spotted on the beach and may use the area as feeding grounds during migrations.
Recreation Development Zone (RD) (10.9 hectares)	Eastern portion of the Drumlin physiographic unit and a small portion of the Beach.	To provide high quality day use recreation opportunities.	 This Zone includes an area of a park that can support the development of facilities and services associated with outdoor recreation activities and more intensive visitor use. This Zone is used to focus park facilities and services, as well as public use, within the most appropriate park areas without compromising natural or cultural heritage values of the park. The Zone is limited to the park entry road, the existing development area, and areas for potential parking lot and facility expansion adjacent to the park entry road, small parking lot, and large parking lot. Potential development may include accessible boardwalks and trails, change houses, toilets, showers, parking areas, interpretive kiosks, picnic tables and/or benches, and maintenance infrastructure.

5.0 Mi'kmaq Consultation and Engagement

The Department will continue to support Mi'kmaq initiatives and activities at Rainbow Haven Beach. Discussions regarding Park Management Plans will be ongoing and potential for partnerships may be established.

6.0 Public Engagement

Through public engagement sessions and emailed submissions, valuable information was received. This information can be split into two opportunities for management plan purposes: Management Opportunities and Operational Opportunities. Management Opportunities include information that supports large development opportunities in the park such as design considerations for core building and facilities, parking areas, large scale repairs to existing infrastructure, etc. Operation Opportunities can be identified as areas where needs are required that are deemed to be solved at an operational level such as staffing, garbage can placement, signage placement, general maintenance of existing infrastructure, etc. Management and Operational Opportunities were determined based on current knowledge of the area and comments received from stakeholders and public through engagement sessions held in September 2017.

7.0 Policies: Rainbow Haven Beach

This section provides site specific management and operational policies and any associated actions required to effectively manage Rainbow Haven Beach.

7.1 Protection Opportunities

Environmentally sensitive areas have been identified at Rainbow Haven Beach under the Environmental Protection Zone. The dune system is the most sensitive habitat and is facing threats from visitor disturbance, habitat destruction, and erosion. Anticipated threats include increased coastal erosion and sea level rise, due to climate change. Flora and fauna that inhabit these areas are also to be protected throughout the park.

7.1.1 Management

Actions to address protection of environmentally sensitive areas may include:

- Restricting large park infrastructure to the recreation development zone.
- Limiting infrastructure developments during specific activity windows critical for species such as migratory birds.
- Encouraging design of park infrastructure to consider long term effects of erosion and storm events
- May establish educational programs or interpretative signage to increase awareness of various environmental topics such as coastal processes, beach dunes, species at risk, and vegetation.
- Identifying areas within the park that may be viable options for restoration of native plant species.
- Planting of non-native species for aesthetic purposes is not permitted.
- Managing vegetation according to the Guidelines for Vegetation Management in Provincial Parks, Park Reserves, Protected Beaches, and Trails (NS DNR, 2002).
- Collaborating with the Department of Communities, Culture, Tourism and Heritage regarding protection of cultural heritage resources.

- No enhancements to the beach itself (e.g., removing seaweed, raking sand, etc.), apart from removing potentially hazardous debris (e.g., lobster traps) and garbage.
- Increasing education and awareness of wildlife values. Potential themes include interpretation of coastal processes, habitats, and cultural history. The Department may work with interested partners in developing interpretive opportunities.
- Increasing promotion of leave no trace principles.

7.1.2 Operational

Actions to address protection of environmentally sensitive areas may include:

- Removing trees, limbs, or branches that pose a risk to public safety or park operations is permitted.
 Whenever possible, removed vegetation may remain on-site to provide wildlife habitat and increase biodiversity. Park operations and maintenance may require the removal of trees and brush around buildings and structures.
- Unauthorized footpaths are considered a non-conforming use. The Department may erect interpretive signage to educate visitors about the sensitivities of the dune ecosystem, and the importance of staying on authorized access points and the beach area.
- Ongoing enforcement of the *Provincial Parks Act* and regulations (e.g., off-leash dogs, impacts to dune systems, and protection of Species at Risk).
- Actively suppress any fire that may occur in the park. Managing insect, disease, or invasive species
 infestations on a case-by-case basis. Many disturbances are recognized as a component of the natural
 ecosystem and generally will be allowed to progress undisturbed. Where disturbances threaten natural
 values or human safety, a control program may be undertaken if appropriate.



Figure 4: Flooding in the overflow parking area.

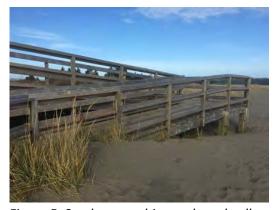


Figure 5: Sand encroaching on boardwalk.

7.2 Public and Recreational Opportunities

7.2.1 Management

Actions to address public and recreational opportunities from a management planning perspective may include:

No enhancements to the beach itself (e.g., removing seaweed, raking sand, etc.), apart from removing

- potentially hazardous debris (e.g. lobster traps) and garbage.
- Exploring opportunities to enhance the accessibility of park facilities throughout any future redevelopment (e.g., accessible change houses, washrooms, parking, beach access, and picnic facilities).
- Core facilities may provide change rooms, showers, and toilets.
- Infrastructure such as water taps, bicycle racks, outdoor shower towers, foot wash stations with hose attachments and accessible picnic areas may be included.
- A redesigned parking lot that addresses increased parking capacity, designated parking spots for accessibility, emergency and enforcement vehicles, and bus parking may be incorporated. A designated drop-off / pick-up lane may be provided.
- Traffic control measures such as speed bumps may be installed.
- To help support active transportation and bike touring, bicycle racks may be installed near the parking lot.
- It is recognized that getting onto the beach from the boardwalk in a wheelchair is challenging due to the soft sand, and the dynamic nature of the changing beach. The Department may investigate options to better provide accessible access to the beach.
- Providing power hookups may be considered in a designated area within the parking lot to support food vendors.
- Pursuing opportunities for partnerships involving other agencies and groups through formal partnership agreements. Partners may work with the Department to assist with the implementation of the approved Park Management Plan and will follow provincial park policies, standards, and regulations.
- Supporting in principle, the addition of property to the park, provided the proposed addition will
 enhance park values. If suitable lands adjacent or near the park become available for acquisition, they
 may be evaluated based on contribution to park objectives, willing seller/willing buyer, and available
 funding.

7.2.2 Operational

Actions to address public and recreational opportunities from an operational planning perspective may include:

- Creating and implementing a park operational plan for Rainbow Haven Beach. The park operational plan
 will address budget, staffing, maintenance schedules, waste management, and coordination of
 enforcement activities. Park operations and maintenance will be consistent with the Nova Scotia
 Provincial Parks Operating Standards and is the responsibility of the Regional Services branch of the
 Department.
- Developing policy to enable more food and non-food concessions within provincial parks.
- Continue to support the Nova Scotia Lifeguard Service to provide supervised swimming at Rainbow Haven Beach.
- Off-season access (mid-October to mid-May) may be accommodated by keeping a small parking lot open. During this time, people are welcome to use the park understanding that the park is not staffed nor maintained.
- Reviewing way-finding sign standards and installation of new directional signs may occur at Rainbow Haven Beach as resources become available.



Figure 6: Unauthorized trails through the dunes at Rainbow Haven Beach, causing site erosion.



Figure 7: Aerial image showing a network of unauthorized trails throughout the dunes.

8.0 Next Steps - Rainbow Haven Beach

Prior to any work performed at Rainbow Haven Beach; the following studies may be required depending on location within the park and the type of development:

- Prior to any development outside of the existing development footprint, a biological inventory and site
 assessment is recommended, especially if development is proposed in an Environmental Protection
 Zone.
- As directed by the Department of Communities, Culture, Tourism and Heritage, an archaeological resource impact assessment may be completed if any new park infrastructure requires large ground disturbance (e.g., new park building).

9.0 <u>Lawrencetown Beach Park Management Plan</u>

Lawrencetown Beach (Map 12 – Park Boundary), as part of the larger Cole Harbour – Lawrencetown Coastal Heritage Park System, provides opportunities for beach activities such as surfing and swimming as well as nature appreciation, for both Nova Scotians and visitors alike.

9.1. Existing Park

Lawrencetown Beach provides opportunities for day use recreation that includes beach walking, supervised swimming, scenic and wildlife viewing, birdwatching, picnicking, relaxation, experiencing solitude, photography, nature appreciation, surfing, kayaking, on-leash dog walking, and bicycling (as a destination). Lawrencetown Beach is known as a surfing destination with consistent surf breaks suitable for both beginners and more advanced surfers, providing a year-round opportunity for surfing.

Camping and open campfires are not permitted at Lawrencetown Beach or anywhere within the Cole Harbour-Lawrencetown Coastal Heritage Park System. Camping opportunities are provided nearby at Porters Lake Provincial Park. Swimming at Lawrencetown Beach is supervised by the Nova Scotia Lifeguard Service from July to the end of August. During the 2023 summer season, Lawrencetown Beach saw over 8,687 visitors with an average of 126 people per supervised swimming day. The supervised swimming area is approximately 200 metres in width and is marked by red and yellow flags. The lifeguards regularly patrol the beach to keep swimmers away from rips or higher surf areas (NSLS, n.d.). Due to dangerous currents and rips, supervised swimming and supporting infrastructure (e.g., toilets or change houses) is not supported at Stoney Beach. Visitors are encouraged to swim in the supervised area at Lawrencetown Beach (Map 13 – Park Infrastructure).

9.2 Landscape

Lawrencetown Beach has excellent examples of the varied geology and landscape development of the eastern shore beaches. Lawrencetown Beach is largely cobble stone with sand showing at low tides and extends approximately 2 km from the drumlin at Lawrencetown Head. The drumlin is composed of red-brown Lawrencetown Till (Nova Scotia Museum, 1994). Across HWY 207 is Lawrencetown Lake with 10.5 hectares of salt marsh that lies within the park boundary, providing important habitat for waterfowl and migratory birds. Lawrencetown Beach has an extensive dune ecosystem, which provide high biodiversity values and wildlife habitat.

Portions of the Lawrencetown Beach area were formed by coastline sedimentation through wave action, involving salt marshes and marine deposits. Other lands in the area are Stony Till Plain (Ground Moraine), which was flat to rolling with surface boulders, and Silty Drumlin (Drumlin Facies), which were formed from large ice sheets depositing till (Map 14 - Surficial Geology). Using the Ecological Land Classification (ELC) for Nova Scotia (DNR2017), Lawrencetown Beach is located within the Eastern Shore Ecodistrict. The area of the Eastern Shore Ecodistrict is a coastal system that consists of coastal beach (XXCB Ecosection), inland water (XXWA Ecosection), and well-drained, fine soil drumlins and flute communities (WFDM Ecosection, DNR 2017), as well as eroding drumlins, barrier beaches, and estuaries as identified by the Eastern Shore Beaches Natural Landscape (NSE 2002) (Map 15 – Ecological Land Classification).

The main beach area at Lawrencetown has no tree species or communities present, however northeast of the beach there are softwood stands within the park boundaries (Map 16 - Forest Cover). Non-forested cover within Lawrencetown Beach is categorized as coastal habitat area, wetlands, natural stands, old fields cliffs, dunes, and coastal rock (Map 17- Non-Forested). More detail is provided by the small patch ecosystems, which include beach/dune systems, erosional sea bluffs, coastal cliffs, and barrens, as well as wetlands such as coastal shrub fens, coastal shrub bogs, and vernal pools (Map 18 - Small Patch Ecosystem). Nearby ecosystems include salt marshes and estuarine flats. Lawrencetown Beach and some of the surrounding areas have been identified as significant habitats for Species at Risk (SAR) and migratory birds (Map 19 – Significant Habitat). Much of the interior waters are considered salt marsh wetlands, along with a treed swamp to the northeast within the Park Boundary (Map 20 - Wetlands). The water table and drainages in the Lawrencetown Beach area are identified in Map 21 - Drainage.

The main wildlife values within the park are associated with the dune system, beach, headlands, and salt marshes. Of these, the dune system is the most sensitive habitat and is facing threats from visitor disturbance, habitat destruction, and erosion. Anticipated threats include increased coastal erosion and sea level rise.

Although there are no registered archaeological sites located within the planning areas at Lawrencetown Beach, there are several historic (i.e., post-contact) registered archaeological sites in the nearby vicinity. The lack of registered archaeological sites within the park lands is likely more a function of lack of archaeological investigation in these areas rather than an indication that these areas do not have archaeological sites. For this reason, an archaeological resource impact assessment may be completed if any new park infrastructure requires large ground disturbance, as directed by the Department of Communities, Culture, Tourism and Heritage.

9.3 Biodiversity

Lawrencetown Beach has been identified as a significant area for a variety of migratory birds and provides habitat for many species of plants and invertebrates such as dragonflies and butterflies. Lawrencetown Beach provides habitat to one non-vascular plant species, one bird species and one small mammal species that are classed as critically imperiled. In addition, two bird species were listed as imperiled and six more as vulnerable to extirpation or extinction. The website eBird provides an unofficial bird list that includes 128 species sighted at Lawrencetown Beach.

10.0 Lawrencetown Beach Zoning

The zoning for Lawrencetown Beach was determined using available data sources, producing maps, and evaluating the information to make informed and educated decisions.

Lawrencetown Beach includes nine zones, described in Table 2 and Map 22- Park Zoning - Lawrencetown Beach.

Table 2: Lawrencetown Beach Zoning (refer to map 22).

Zone Name	Description	Management Intent	Additional Information
Environmental Protection Zone 1 (EP1) (4.3 hectares)	Includes the sand dunes at Stoney Beach.	To protect highly sensitive natural resources. Only interpretive, educational or scientific activities will be permitted, where these activities do not conflict with the underlying protection objectives of the zone. No trails or infrastructure is permitted.	 This Zone includes one sensitive ecosystem, the dune system at Stoney Beach. Currently, there is a network of unauthorized trails throughout the dune system, which is inconsistent with the intent of the zone, and is considered a non- conforming use.
Environmental Protection Zone 2 (EP2) (19.6 hectares)	Includes the sand dunes at Lawrencetown Beach.	To protect highly sensitive natural resources. Only interpretive, educational or scientific activities will be permitted, where these activities do not conflict with the underlying protection objectives of the zone. No trails or infrastructure is permitted.	This Zone includes one sensitive ecosystem, the dune system. Currently, there is a network of unauthorized trails throughout the dune system, which is inconsistent with the intent of the zone, and is considered a non-conforming use.
Resource Conservation Zone 1 (RC1) (9.1 hectares)	Includes the sand and cobble beach at Stoney Beach.	To protect natural, cultural, and low-impact recreational features. Only activities that do not conflict with the inherent natural character and aesthetic qualities of the park resource base will be permitted.	This Zone includes the sandy and cobble beach area, and is the focus of the recreational activities at Stoney Beach.
Resource Conservation Zone 2 (RC2) (6.5 hectares)	Includes the drumlin area at Lawrencetown Head (surrounding the MacDonald House).	To protect natural, cultural, and low-impact recreational features. Only activities that do not conflict with the inherent natural character and aesthetic qualities of the park resource base will be permitted.	This Zone includes the drumlin area at Lawrencetown Head between Lawrencetown Beach and Stoney Beach, and surrounds the MacDonald House. The drumlin is actively eroding, and no shoreline access will be provided here.
Resource Conservation Zone 3 (RC3) (3.9 hectares)	Includes the western portion of the sand dunes at Lawrencetown Beach. This area connects the core facility and Recreation Development Zone to the beach, and allows for limited beach access points and associated infrastructure (e.g. boardwalks).	To protect natural, cultural, and low-impact recreational features. Only activities that do not conflict with the inherent natural character and aesthetic qualities of the park resource base will be permitted.	 This Zone includes a portion of the park's dune system, as well as infrastructure to support beach access and maintenance. There is currently a network of unauthorized trails throughout the dune system within this zone, which is inconsistent with the intent of the zone, and is considered a non-conforming use. A portion of the Atlantic View Trail is located within this zone. A small viewing platform and lifeguarding infrastructure may be permitted within this zone.

Zone Name	Description	Management Intent	Additional Information
Resource Conservation Zone 4 (RC4) (17.7 hectares)	Includes the salt marsh and a portion of the Atlantic View Trail on the north side of HWY 207.	To protect natural, cultural, and low-impact recreational features. Only activities that do not conflict with the inherent natural character and aesthetic qualities of the park resource base will be permitted.	 This Zone includes a salt marsh, which provides important waterfowl, winter, and migratory bird habitat. The western side of this zone includes the Atlantic View Trail, which traverses a portion of the Lawrencetown Lake Salt Marsh. No other infrastructure will be permitted within this zone.
Resource Conservation Zone 5 (RC5) (40.7 hectares)	Includes a spruce forest north of HWY 207 leading to Little Lake.	To protect natural, cultural, and low-impact recreational features. Only activities that do not conflict with the inherent natural character and aesthetic qualities of the park resource base will be permitted.	 This Zone includes a poorly-drained spruce forest that borders onto the southwestern side of Little Lake. There are no plans to develop this area.
Recreation Development Zone (RD1) (0.4 hectares)	Includes the parking lot area at Stoney Beach.	To provide high quality day use recreation opportunities.	 This Zone is limited to the current development footprint at Stoney Beach, and includes the parking area and access to the beach. Potential development may include upgrading the parking lot, erecting vehicular barricades, better delineating beach access, and installing interpretive kiosks or panels. This area is prone to flooding and no other infrastructure will be provided within this zone.
Recreation Development Zone (RD2) (1.6 hectares)	Includes the existing parking lot area and core facility at Lawrencetown Beach.	To provide high quality day use recreation opportunities.	 This Zone is limited to the park entry roads and the existing development area, which includes the parking lot area, core facility, pit toilets, and gravel pathway adjacent to the dune system. This area may be redeveloped with a new core facility and supporting infrastructure. Potential development may include change houses, toilets, showers, parking areas, interpretive kiosks or panels, picnic tables or benches, and infrastructure to support park maintenance, staff, and lifeguarding activities.

11.0 Issues and Concerns

11.1 Natural

Lawrencetown Beach is susceptible to coastal processes (storm events with high tidal surges or wind driven waves) that cause site erosion, particularly along the dune faces. Sea level rise may threaten the dune system, biodiversity values, and park infrastructure. This may cause present beach systems to change as these are dynamic systems; this information is key to the planning process as the Department considers infrastructure design and impacts.

Lawrencetown Beach is directly exposed to high wind-wave action and deep-sea swells approaching the beach face. In instances where storm conditions, including storm surge, occur during high tide there is increased potential for erosion of the dune systems (Figure 8). Although the presence of gravel and cobbles serves to counter high energy levels, there is potential for breach through the dune. Lawrencetown Beach has been experiencing a decrease in sand over the years, which will eventually reduce the recreational value of the beach.

The dune systems at Lawrencetown Beach are under threat from pedestrian traffic and dogs off-leash, causing trampling and loss of marram grass, leading to dune erosion. Other impacts include garbage and animal waste. Vegetation communities within the park system can be impacted by the introduction of invasive flora and fauna species.



Figure 8: Erosion of the dunes at Lawrencetown Beach during winter storms.



Figure 9: Unauthorized trails through the dunes at Lawrencetown Beach.

11.2 Anthropogenic

The dune systems at Lawrencetown Beach are under impacted from pedestrian traffic and dogs off-leash, causing trampling and loss of marram grass and leading to dune erosion, and installation of armour stone (Figure 9).



Figure 10: Impacts to beach access infrastructure from winter storms.



Figure 11: Lawrencetown Beach access showing signage for the supervised swimming area.

12.0 Mi'kmaq Consultation and Engagement

The Department will continue to support Mi'kmaq initiatives and activities at Lawrencetown Beach. Discussions regarding Park Management Plans will be ongoing and potential for partnerships may be established.

13.0 Public Engagement

Through public engagement sessions and emails, valuable information was received. This information has been divided into two opportunities: Protection; and Public and Recreational Opportunities. Under each opportunity, actions will be divided into two types of Action Areas: Management; and Operational. Management Actions include information that supports large development opportunities in the park such as design considerations for a core building and facilities, parking areas, large scale repairs to existing infrastructure, etc. Operational actions can be identified as areas where needs are required that are deemed to be solved at an operational level such as staffing, garbage can placement, signage placement, general maintenance of existing infrastructure, etc.

14.0 Policies: Lawrencetown Beach

This section provides site specific management and operational policies and any associated actions required to effectively manage Lawrencetown Beach in accordance with applicable legislation and policies.

14.1 Protection Opportunities

Through the Zoning portion of the Park Management Plan, environmentally sensitive areas have been identified in Lawrencetown Beach under the Environmental Protection Zone. The dune system is the most sensitive habitat and is facing threats from visitor disturbance, habitat destruction, and erosion. Anticipated threats include increased coastal erosion and sea level rise, due to climate change. Flora and fauna that inhabit these areas are also to be protected throughout the park. Lands identified as Resource Conservation Zones in Lawrencetown Beach are areas where lands will be evaluated and may allow some infrastructure. Development within the Park area is difficult due to the dynamic system therefore, environmental reports such as coastal assessments (CBCL Limited, 2018) are essential in infrastructure design and placement.

14.1.1 Management

Actions to address protection of environmentally sensitive areas may include:

- Restricting large Infrastructure to specific zones.
- Limiting infrastructure developments to occur during specific activity windows critical for species such as migratory birds.
- Encouraging design of park infrastructure to consider long term effects of erosion and storm events.
- May establish educational programs or interpretative signage to increase awareness of various environmental topics. Consider the installation of interpretive kiosks or panels to help visitors gain an understanding of the park and its resources. Potential interpretive themes include coastal processes, habitats, and cultural history. The Department may work with interested partners in developing interpretive opportunities.
- Identify areas within the park that may be viable options for restoration of native vegetation species (e.g., non-conforming trails, etc.). Planting of non-native species for aesthetic purposes is not permitted.
- Managing vegetation according to the Guidelines for Vegetation Management in Provincial Parks, Park Reserves, Protected Beaches, and Trails (DNR, 2002).
- Collaborating with the Department of Communities, Culture, Tourism and Heritage regarding protection of cultural heritage resources.
- There will be no enhancements to the beach itself (e.g., removing seaweed, raking sand, etc.), apart from removing potentially hazardous debris (e.g., lobster traps) and garbage.
- Unauthorized footpaths are considered a non-conforming use. The Department may erect interpretive
 signage to educate visitors and staff about the sensitivities of the dune ecosystem, and the importance
 of staying on authorized access points and the beach area.
- Supporting in principle, the addition of property to the park, provided the proposed addition will
 enhance park values. If suitable lands adjacent or near the park become available for acquisition, they
 may be evaluated based on contribution to park objectives, willing seller/willing buyer, and available
 funding.

14.1.2 Operational

Actions to address protection of environmentally sensitive areas may include:

- Removing trees, limbs, or branches that pose a risk to public safety or park operations. Wherever
 possible, removed vegetation may remain on-site to provide wildlife habitat and increase biodiversity.
- Actively suppress any fire that may occur in the park. Managing insect, disease, or invasive species
 infestations will be managed on a case-by-case basis. Many disturbances are recognized as a component
 of the natural ecosystem and generally will be allowed to progress undisturbed. Where disturbances
 threaten natural values or human safety, a control program may be undertaken if appropriate. The
 Guidelines for Vegetation Management provide further direction on insect and disease management.

14.2 Public and Recreational Opportunities

This section provides site specific management and operational policies and any associated actions required to effectively manage Lawrencetown Beach in accordance with applicable legislation and policies.

14.2.1 Management

Actions to address public and recreational opportunities from a management planning perspective may include:

- No enhancements to the beach itself (e.g., removing seaweed, raking sand, etc.), apart from removing potentially hazardous debris (e.g., lobster traps).
- Exploring opportunities to enhance the accessibility of the park facilities throughout any future redevelopment (e.g., accessible change houses, washrooms, parking, and picnic facilities).
- The main building at Lawrencetown reached the end of its lifespan and has been replaced (Figures 12 and 13). The new core facility may provide change rooms, showers, toilets, and a staff and lifeguard office and supply room. It may be accessible by wheelchair and have nearby accessible parking.
- Providing water taps, bicycle racks, outdoor shower towers, foot wash stations with hose attachments, and accessible picnic areas. This infrastructure may be adjacent to the proposed facilities.
- Redesigning the main parking lot to maximize parking capacity and providing designated parking spots for accessibility, emergency, enforcement, and bus parking. A designated drop-off/pick-up lane location may be considered.
- Traffic control measures such as speed bumps may be installed.
- Additional parking (if deemed necessary) may be subject to ecological and archeological review, and other necessary approvals.
- Installation of bicycle racks to help support active transportation and bike touring may be installed near the parking lot.
- Incorporating picnic areas with adjacent green spaces may be considered with accessibility options for park users.
- Investigating options to better provide accessible access to the beach as it is recognized that getting
 onto the beach from the boardwalk in a wheelchair is challenging due to the cobblestone and sand, and
 the dynamic nature of the changing beach (Figures 10 and 15). Erosion potential of dunes, various
 environmental considerations, boardwalks, trails, public safety concerns and long-term viability of
 structures are all factors to be considered when determining infrastructure options.

- Providing power hookups may be considered in a designated area within the parking lot to support food vendors.
- The Department may designate an area within the parking lot and provide racks for displaying gear and surfboards to help support surf rental and surf lesson businesses. Options may be considered for nonpermanent viewing structures for surfing spectators.
- Pursuing opportunities for partnerships involving other agencies and groups through formal partnership agreements. Partners may work with the Department to assist with the implementation of the approved Park Management Plan and will follow Provincial Park policies, standards, and regulations.
- Developing policy to enable more food and non-food concessions within provincial parks.
- New facilities may be integrated with the existing Atlantic View Trail. The Atlantic View Trail, managed under an agreement with the Atlantic View Trails Association, runs through Lawrencetown Beach and is part of the Trans Canada Trail (Figure 14).



Figure 12: The previous core facility at Lawrencetown Beach.



Figure 13: New visitor services pavilion.



Figure 14: Atlantic View Trail leading east of the Lawrencetown parking lot.



Figure 15: Cobble stones washed up the steep beach face and onto existing boardwalk access.

14.2.2 Operational

Actions to address public and recreational opportunities from an operational planning perspective may include:

- Continue to support the Nova Scotia Lifeguard Service to provide supervised swimming at Lawrencetown Beach. Due to dangerous currents and rips, supervised swimming and supporting infrastructure (e.g., toilets or change houses) are not supported at Stoney Beach. Visitors are encouraged to swim in the supervised area at Lawrencetown Beach.
- Creating and implementing a park operational plan for Lawrence Beach. The park operational plan will
 address budget, staffing, maintenance schedules, waste management, and coordination of enforcement
 activities. Park operations and maintenance will be consistent with the Nova Scotia Provincial Parks
 Operating Standards and is the responsibility of Regional Services branch of the Department.
- Off-season access (mid-October to mid-May) may be supported by keeping a small parking area open.
 During this time, people are welcome to use the park understanding that the park is not staffed nor maintained.

15.0 Next Steps - Lawrencetown Beach

Prior to any work being performed in Lawrencetown Beach, the following studies may be required depending on location within the park and the type of development:

- Ensure appropriate studies are performed prior to park design and development (e.g., environmental reports [CBCL Limited, 2018]).
- A biological inventory and site assessment are recommended prior to any development outside the existing footprint.
- Collaborating with the Department of Communities, Culture, Tourism and Heritage regarding protection of cultural heritage resources.

16.0 Conclusion - Rainbow Haven Beach and Lawrencetown Beach

The Management Plan for Rainbow Haven Beach and Lawrencetown Beach will be reviewed after it has been in place for 10 years to determine whether it is still relevant, effective, and current, or if adjustments are required. In circumstances where the plan does not provide sufficient direction to protect the values or address existing or emerging threats, the plan can be reviewed prior to the next scheduled review.

External requests for amendments to address specific requests or needs may be considered.

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Appendix 1: Rainbow Haven Beach Maps

Map 2: Park Boundary

Map 3: Park Infrastructure

Map 4: Surficial Geology

Map 5: Ecological Land Classification

Map 6: Non-Forested

Map 7: Small Patch Ecosystem

Map 8: Significant Habitat

Map 9: Wetlands

Map 10: Drainage

Map 11: Park Zoning





Map 2 - Park Boundary

Rainbow Haven Beach

Cole Harbour-Lawrencetown Coastal Heritage Park System



6º Universal Transverse Mercator (UTM) Projection, Zone 20, Central Meridian 63º00' West, North American Datum (NAD) 1983.

Produced by: Department of Natural Resources - Parks, Outreach, and Service Delivery, 2018.

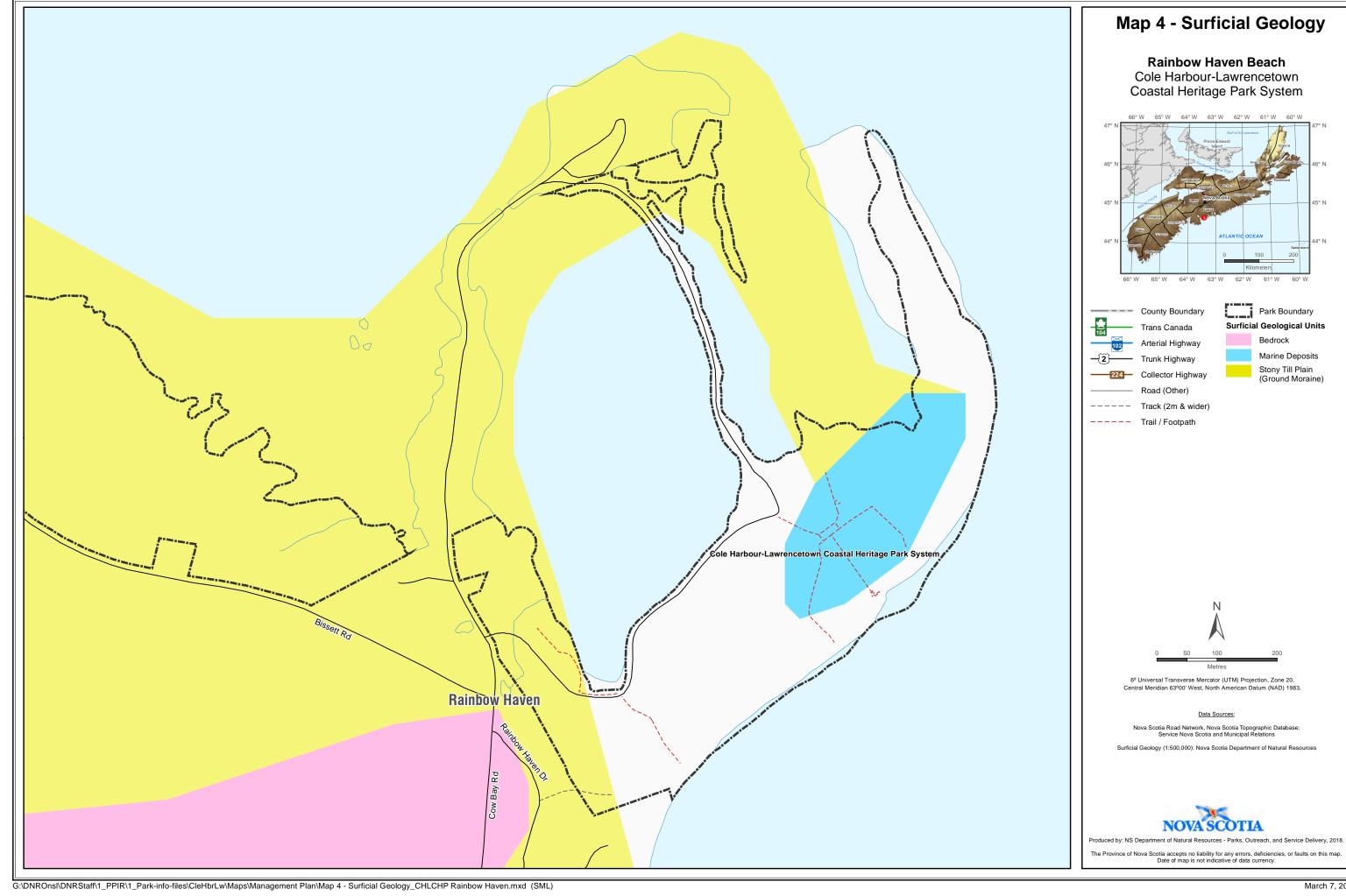
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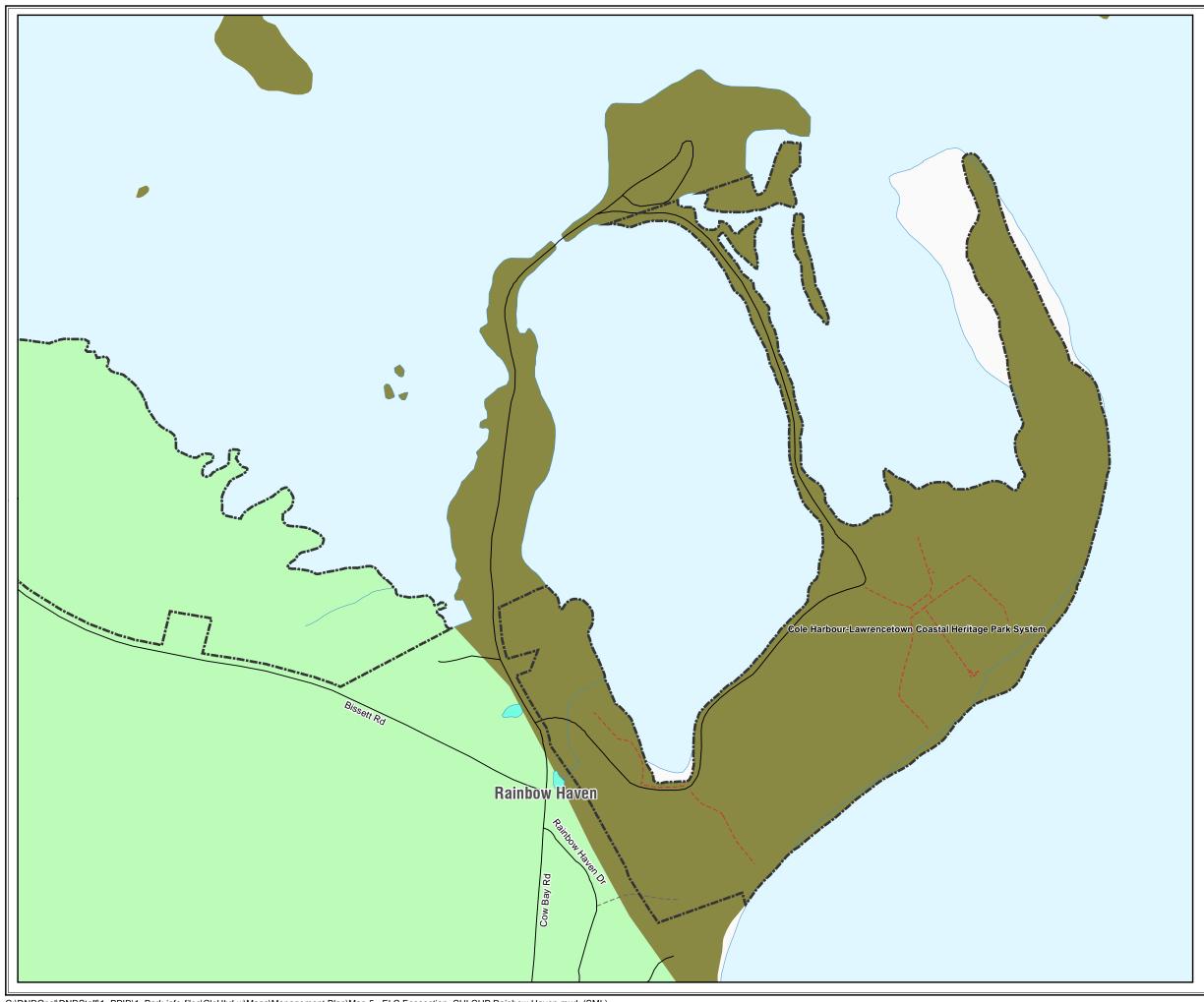










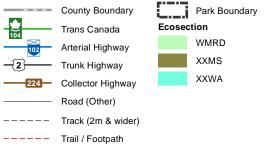


Map 5 - Ecological Land Classification

Rainbow Haven Beach

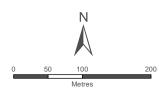
Cole Harbour-Lawrencetown
Coastal Heritage Park System





Ecosection Classification

WMRD Well drained, medium textured soil on ridged topography XXMS Salt marsh XXWA Inland water



6º Universal Transverse Mercator (UTM) Projection, Zone 20, Central Meridian 63º00' West, North American Datum (NAD) 1983.

Data Sources:

Nova Scotia Road Network, Nova Scotia Topographic Database: Service Nova Scotia and Municipal Relations

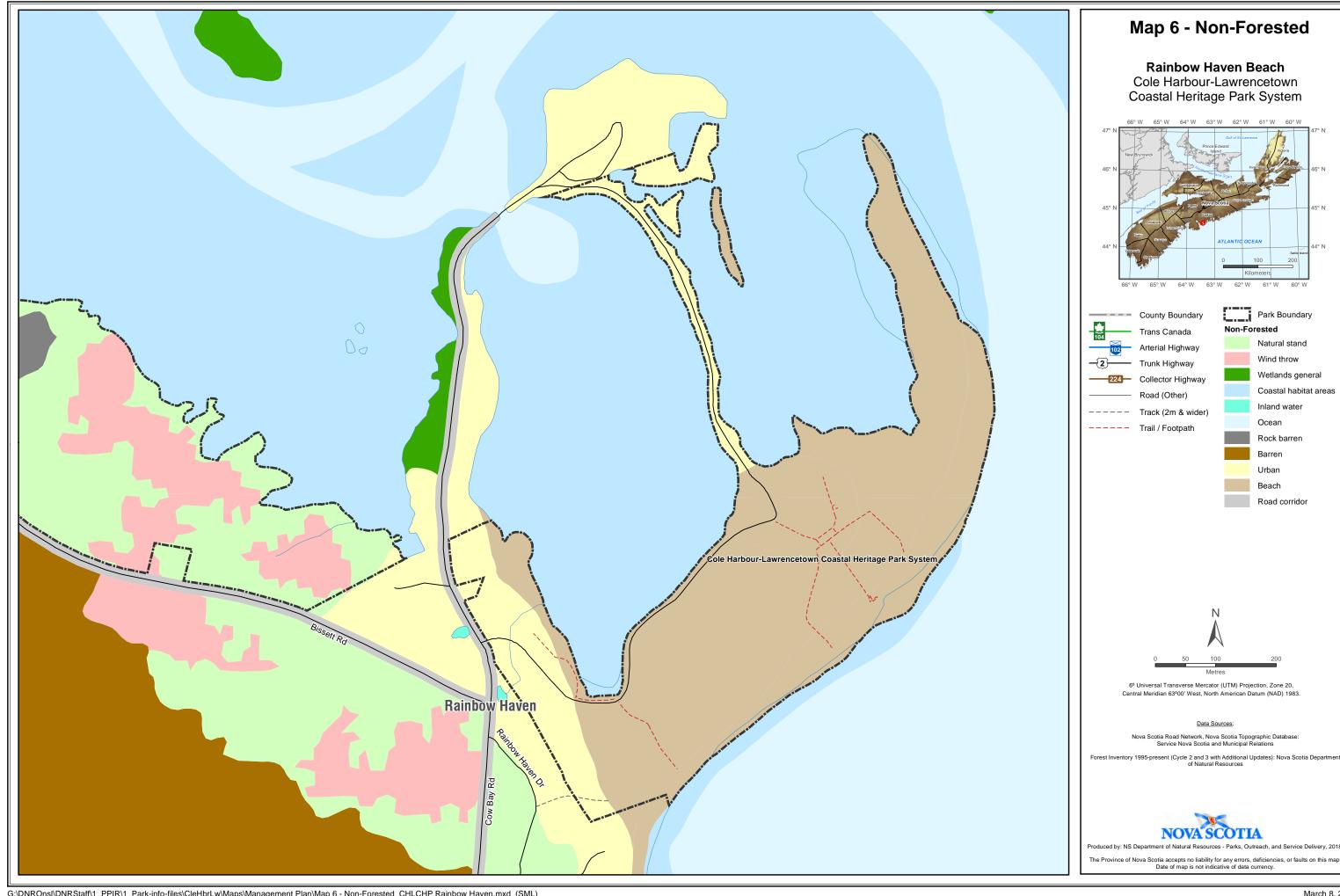
Ecological Land Classification: Nova Scotia Department of Natural Resources. Updated: August 11, 2017

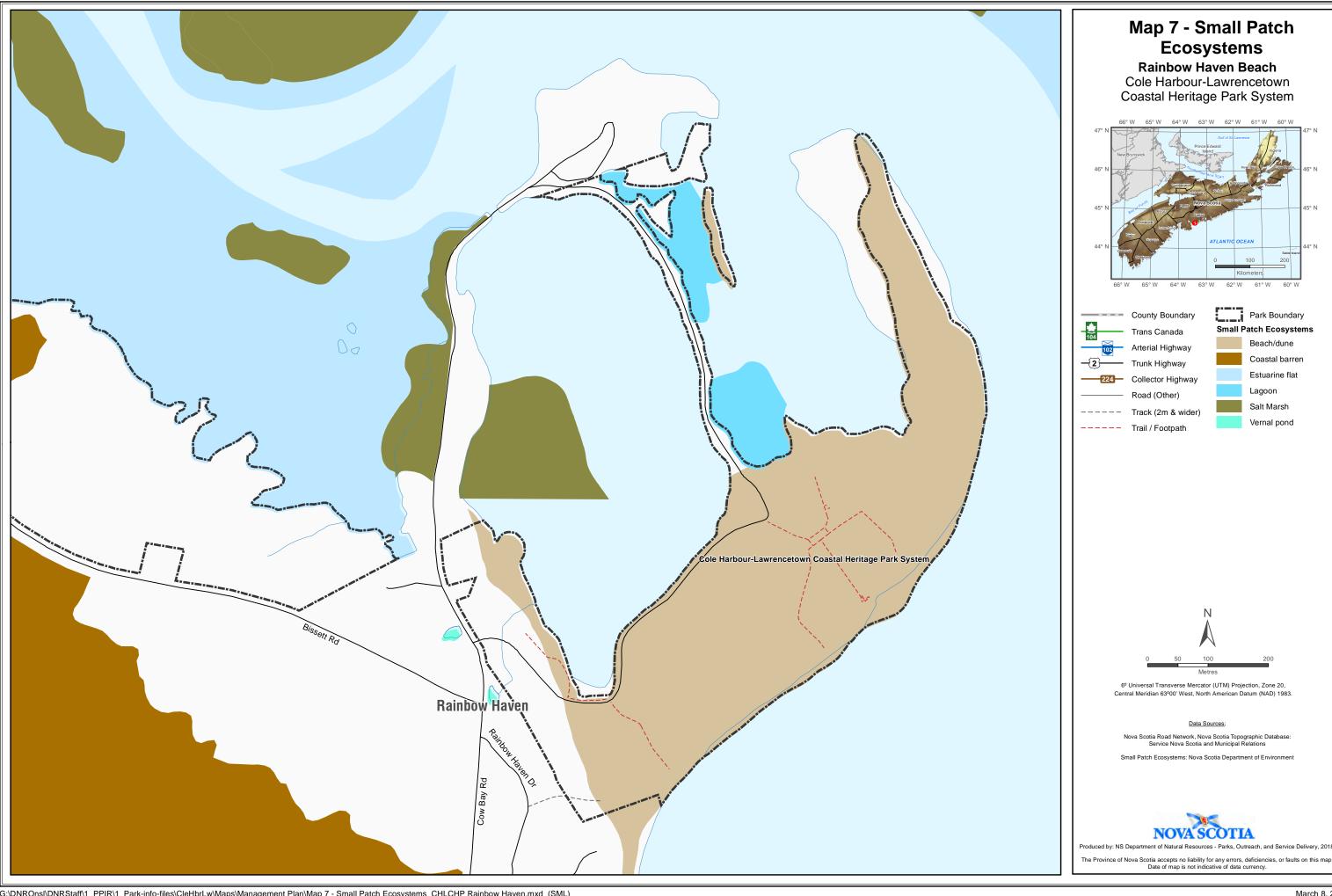


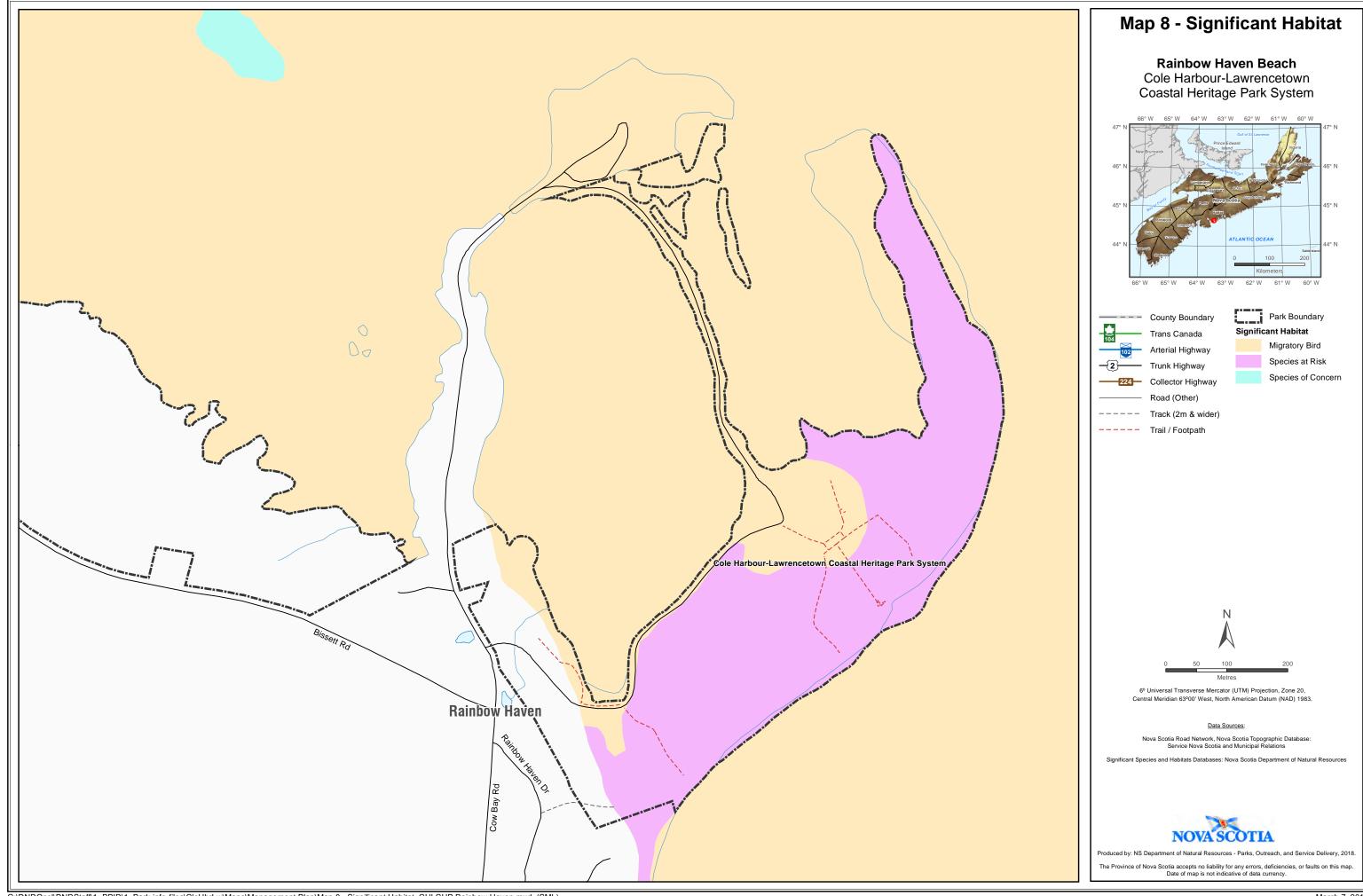
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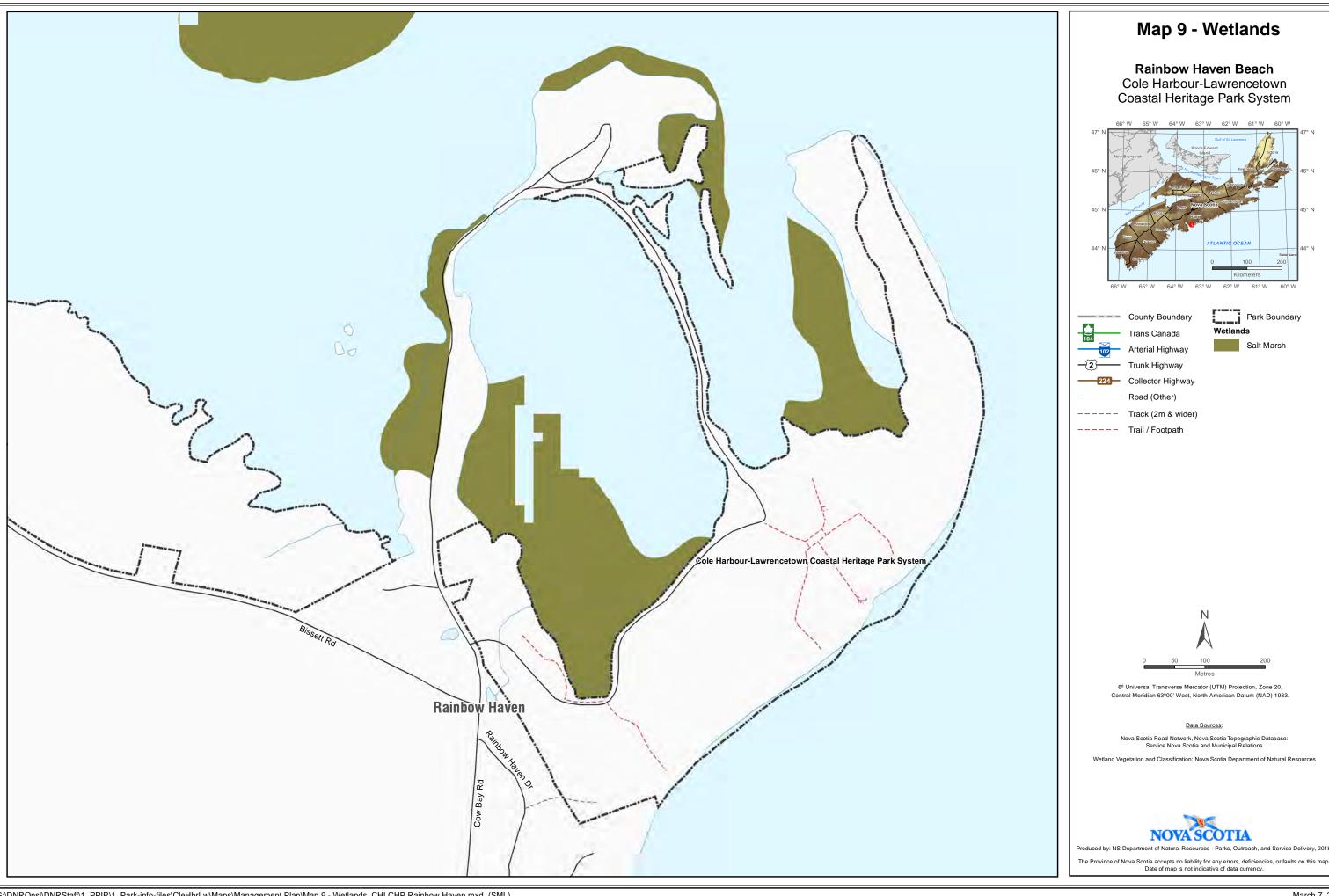
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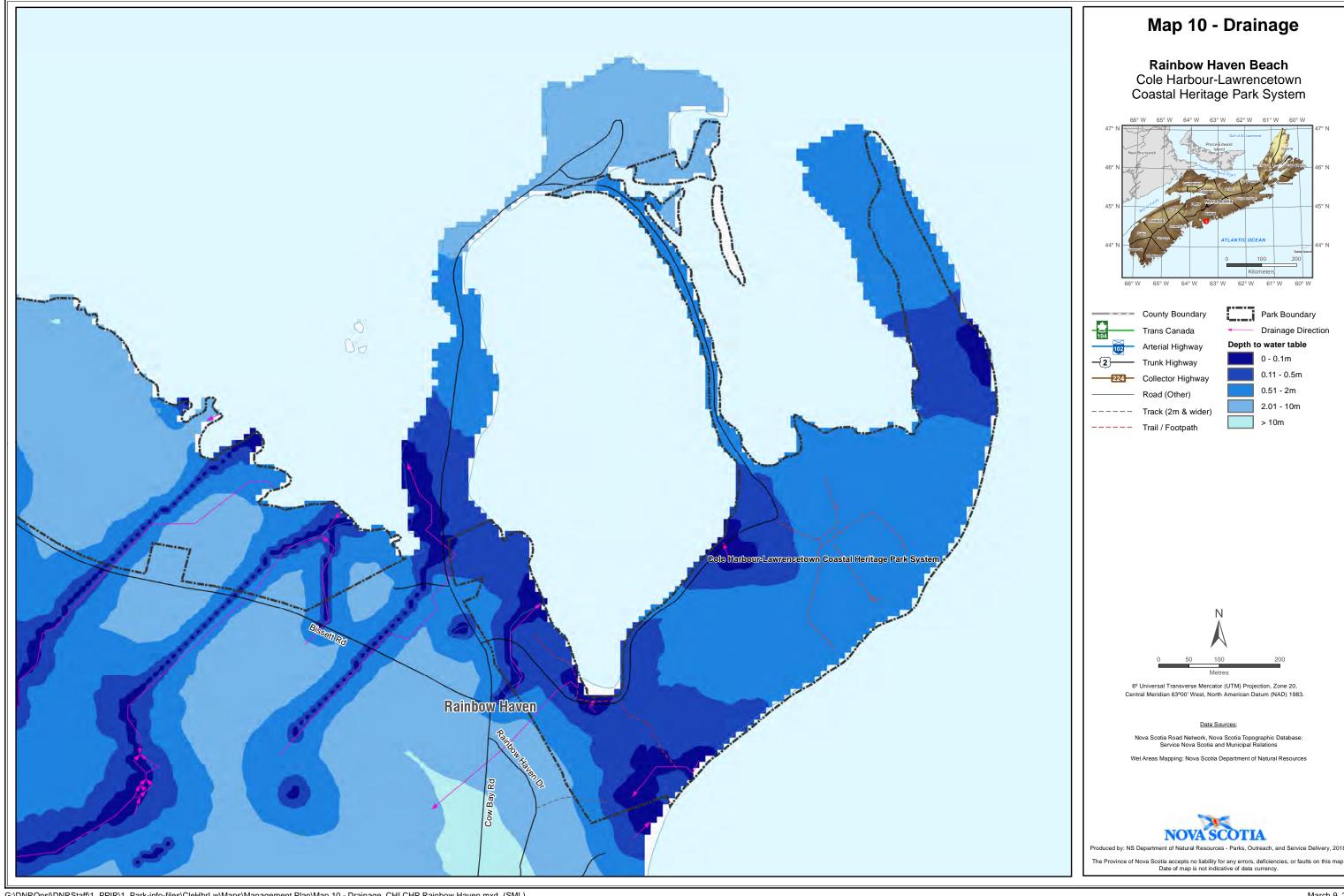






Park Boundary

Data Sources:





Resource Conservation Zone 1 (RC1)

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Resource Conservation Zone 2 (RC2)

Recreation Development Zone (RD)

Rainbow Haven Beach Cole Harbour-Lawrencetown Coastal Heritage Park System



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Appendix 2: Lawrencetown Beach Maps

Map 12: Park Boundary

Map 13: Park Infrastructure

Map 14: Surficial Geology

Map 15: Ecological Land Classification

Map 16: Forested Cover

Map 17: Non-Forested Cover

Map 18: Small Patch Ecosystem

Map 19: Significant Habitat

Map 20: Wetlands

Map 21: Drainage

Map 22: Park Zoning



Map 12 - Park Boundary

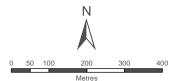
Lawrencetown Beach

Cole Harbour-Lawrencetown Coastal Heritage Park System



Provincial Park





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Nova Scotia Topographic Database (NSTDB), Nova Scotia Road Network (NSRN): Nova Scotia Geomatics Centre

Provincial Parks and Park Reserves: Nova Scotia Department of Natural Resources



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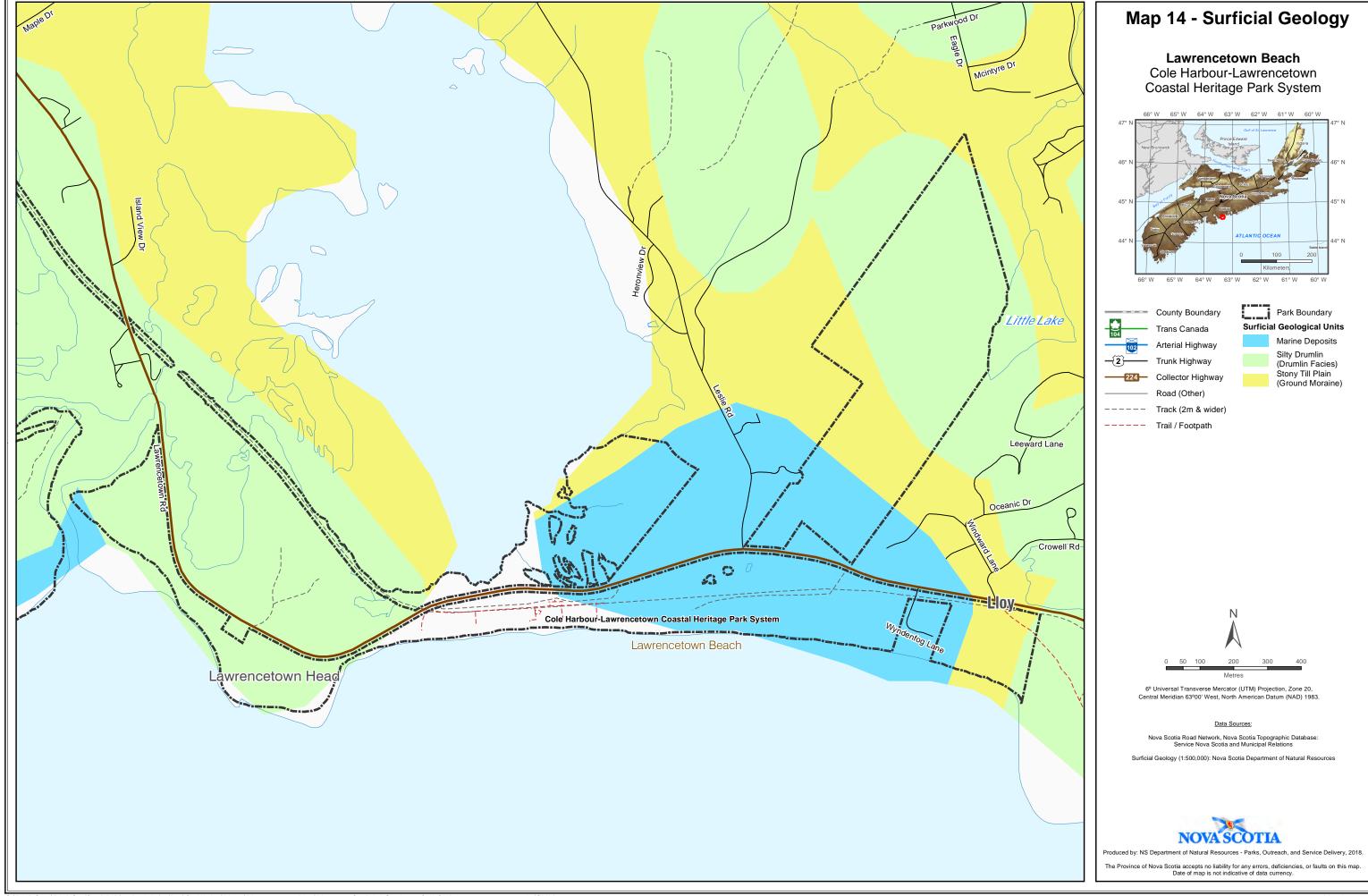
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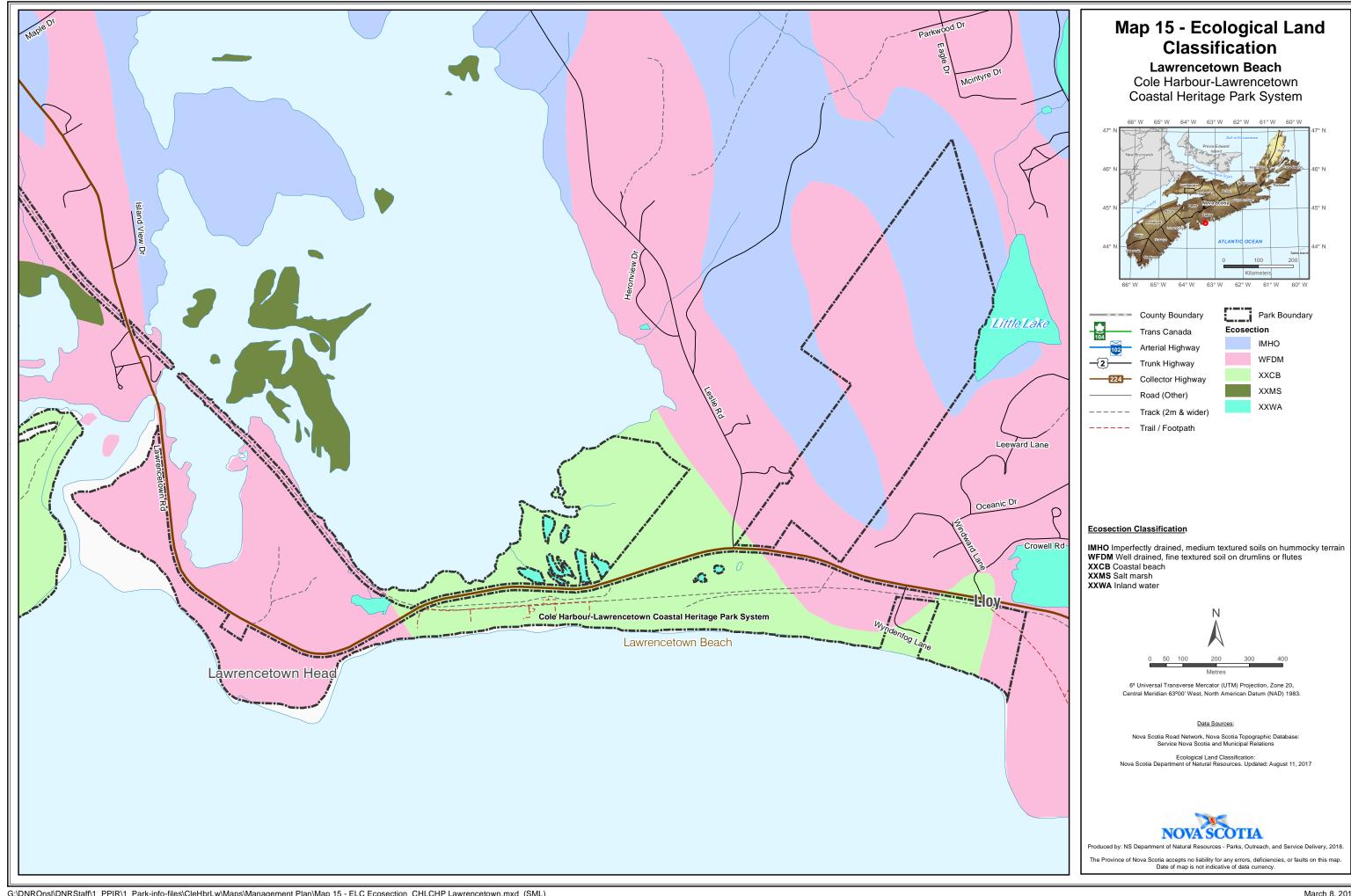
Cole Harbour-Lawrencetown Coastal Heritage Park System

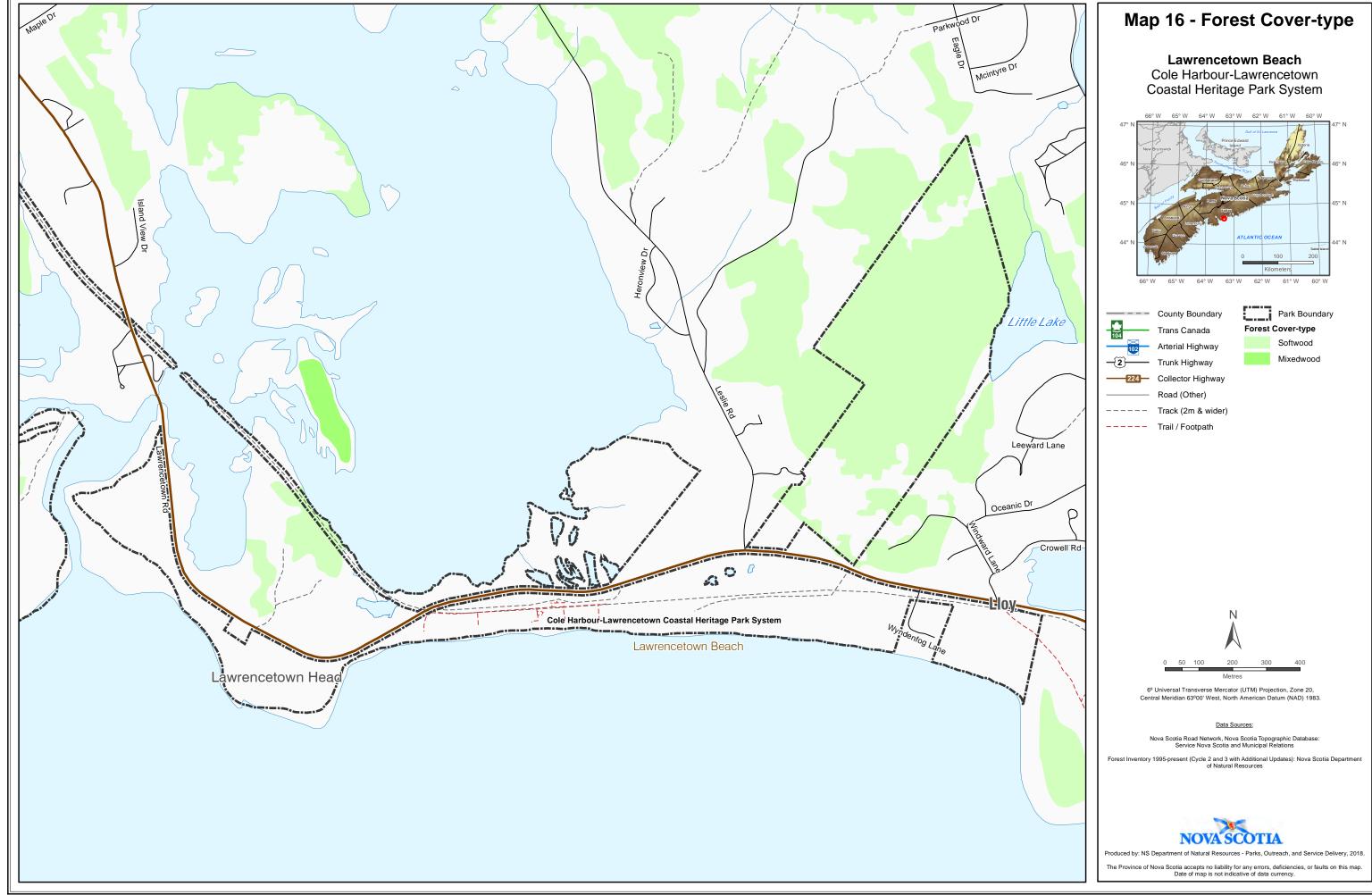
Park Boundary

Central Meridian 63º00' West, North American Datum (NAD) 1983.

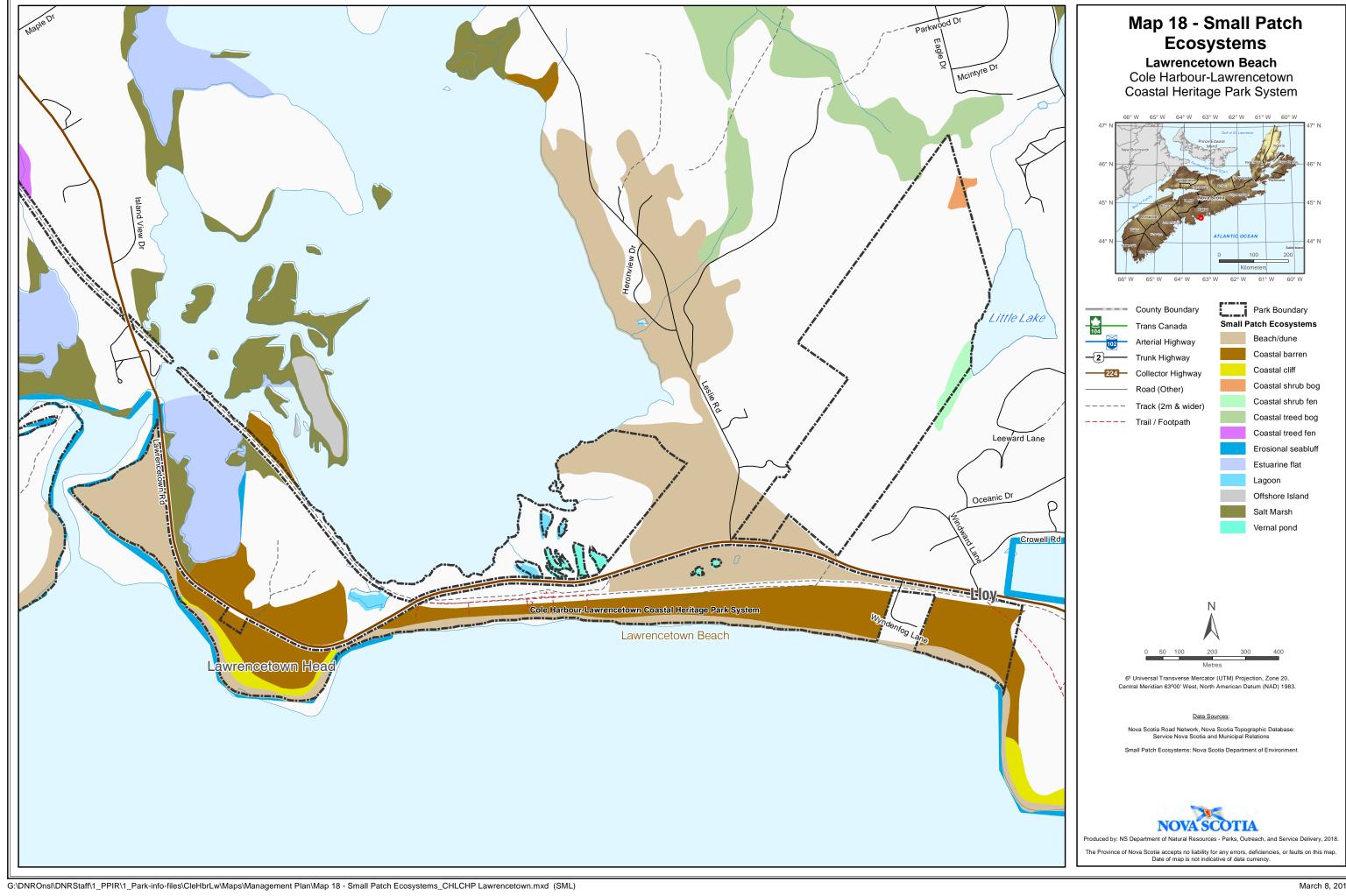
Boardwalk

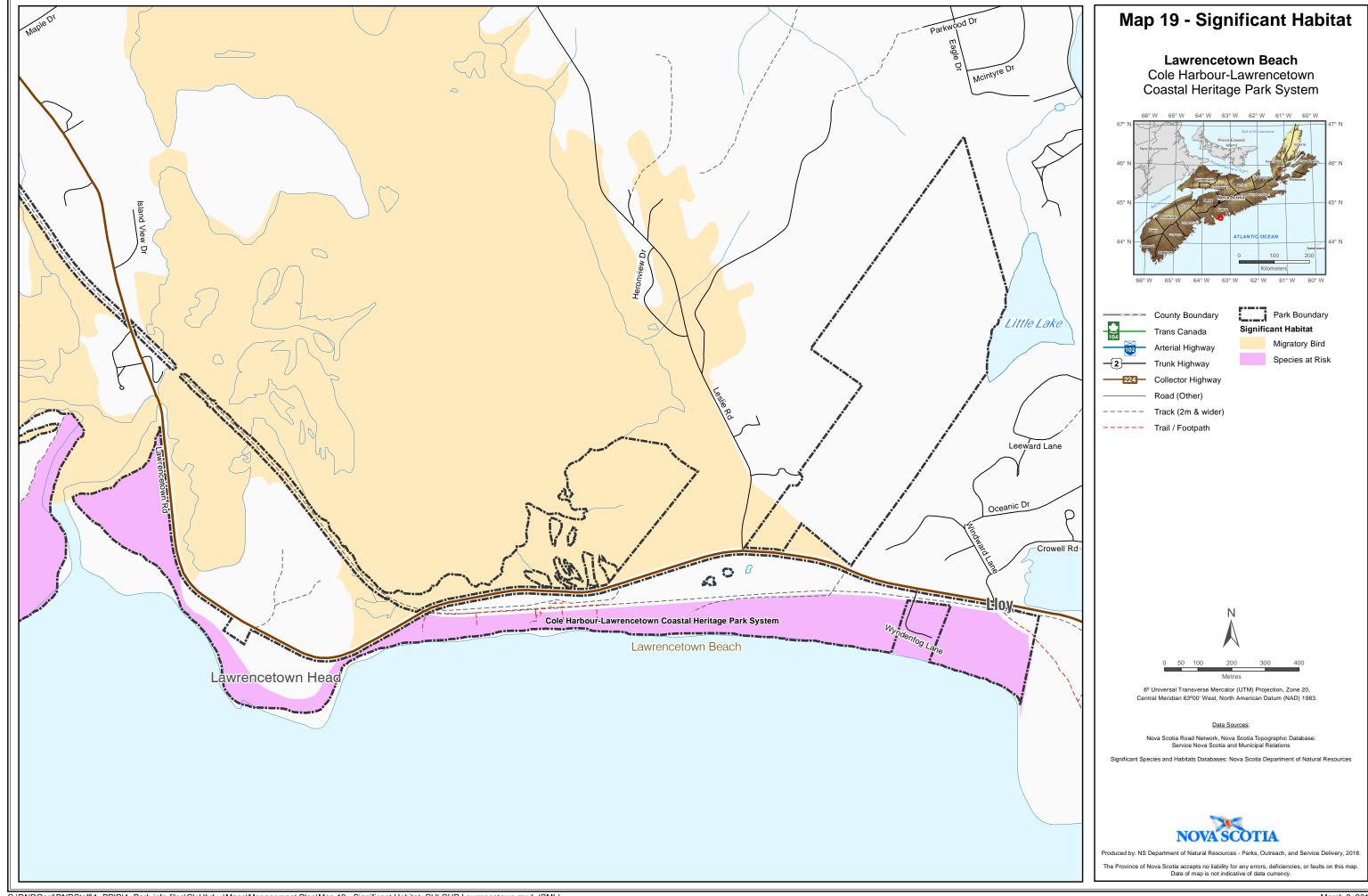


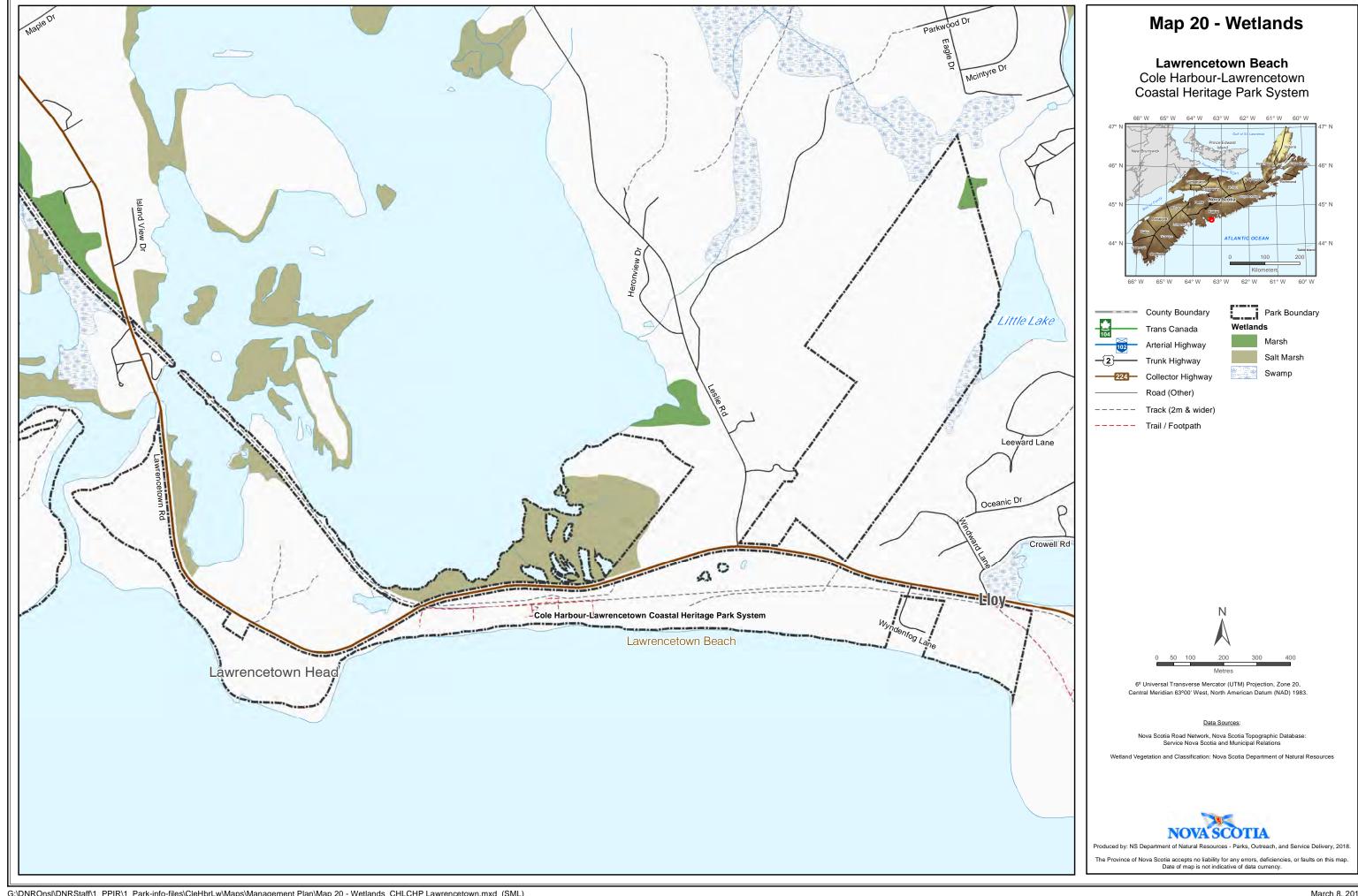


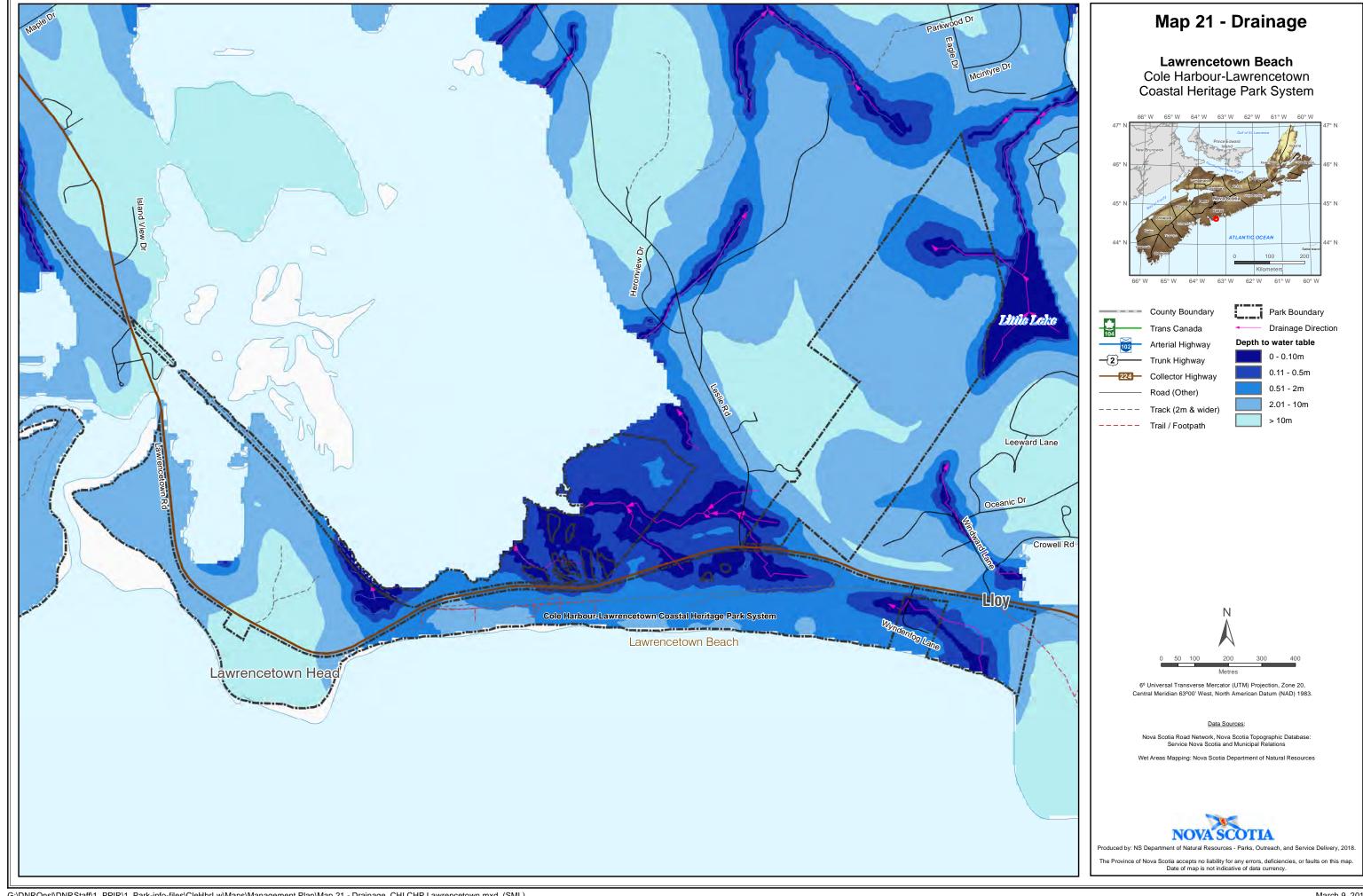


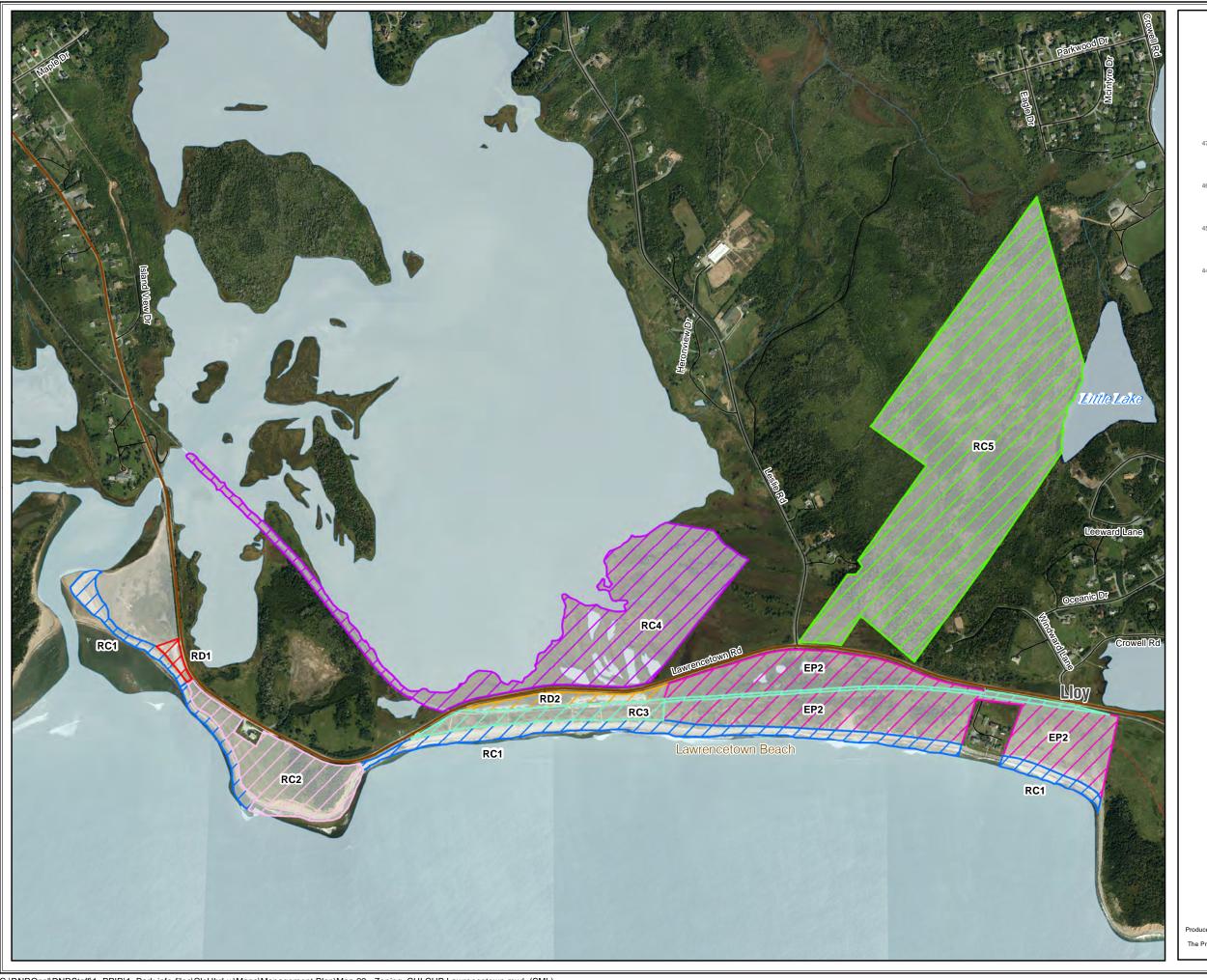










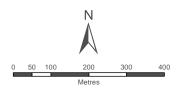


Map 22 - Zoning

Lawrencetown Beach Cole Harbour-Lawrencetown Coastal Heritage Park System







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Data Source

Nova Scotia Road Network, Nova Scotia Topographic Database: Service Nova Scotia and Municipal Relations



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