

Clam Harbour Provincial Park

Park Management Plan

DRAFT



May 10, 2018

Nova Scotia Department of Natural Resources

Parks and Recreation Division

Report PKS 2018-0XX

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Department of Natural Resources

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21 **Executive Summary**

22 The Clam Harbour Provincial Park is a designated as a Core Park and has been hosting the annual Clam Harbour
23 Sandcastle Competition for over 35 years. It is a year-round destination for visitors with supervised swimming
24 during summer and cross-country ski access in winter. For Core Parks in the Province; the development of Parks
25 Management Plans has been stated as deliverables in the *Our Parks and Protected Areas - A Plan for Nova Scotia*
26 (Government of Nova Scotia 2013). The Park Management Plan (the Plan) assists in the development of future
27 work plans for the Provincial Park; based on information gathered through previous studies and data (e.g. aerial
28 imagery, Ecological Land Classification, etc.), and stakeholder engagement (e.g. public, special interest groups,
29 etc.). Feedback from the various engagement sessions have been incorporated into this document.

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Invitation to Comment

The Department of Natural Resources (DNR), Parks, Outreach and Service Delivery Division is preparing management plan for Clam Harbour Provincial Park. After careful consideration of related planning information and review of comments received thus far, this document outlines management policies for Clam Harbour Provincial Park. Note however, that this document contains *proposed* site objectives, policies and actions related to managing the park's natural, cultural, and recreational values. The approved management plan will guide the management of the provincial park over the next 20 years.

Publication of this draft management plan provides an opportunity for public engagement and will help form the final Management Plan. You can get involved and submit your comments:

- Submit a written comment via email to parkplanning@novascotia.ca
- Submit a written comment via regular mail to:

Parks, Outreach & Service Delivery Division
Nova Scotia Department of Natural Resources
15 Arlington Place, Suite 7
Truro, NS
B2N 0G9

The deadline for comment submissions is July 4th, 2018.

To make your submission effective, list the topic(s) you wish to discuss and briefly state your reasons for agreeing or disagreeing with the proposed management direction. You may also make suggestions or comments on other topics important to you.

Thank you in advance for your interest and comments on the future management of Clam Harbour Provincial Park.

61	Table of Contents	
62	Executive Summary	
63	Invitation to Comment	1
64	1.0 Introduction.....	6
65	1.1 Planning Context.....	6
66	1.2 Park Classification and Zoning	8
67	1.3 Park Objectives.....	9
68	2.0 Clam Harbour Park Management Plan.....	9
69	2.1 Existing Park.....	11
70	2.2 Landscape.....	13
71	2.3 Biodiversity	15
72	3.0 Clam Harbour Zoning.....	15
73	4.0 Issues and Concerns.....	18
74	4.1 Natural.....	18
75	4.2 Anthropogenic	18
76	5.0 Mi'kmaq Consultation and Engagement.....	19
77	6.0 Public Engagement	19
78	7.0 Policies for Clam Harbour.....	19
79	7.1 Protection Opportunities	19
80	7.1.1 Management	19
81	7.1.2 Operational	20
82	7.2 Public and Recreation Opportunities	21
83	7.2.1 Management	21
84	7.2.2 Operational	22
85	8.0 Next Steps	22
86	9.0 Conclusion	22
87	10.0 References	23
88	Appendix: Clam Harbour Maps	25
89		

1.0 Introduction

Clam Harbour Provincial Park is a 183.2-hectare Outdoor Recreation class park, located in Halifax County. It is a popular day use beach featuring important conservation and recreation values. Locals and tourists use the beach for swimming, walking, wildlife viewing, and various park events.

The Government of Nova Scotia acquired the property in 1978 for provincial park purposes, and in 1980 Clam Harbour was designated under the *Provincial Parks Act* (Government of Nova Scotia 1989a). Clam Harbour Beach has been home to the annual Clam Harbour Beach Sand Castle Competition since 1978, a very popular event which draws up to 10,000 people. The park is serviced by the DNR district office in Jeddore (central region).

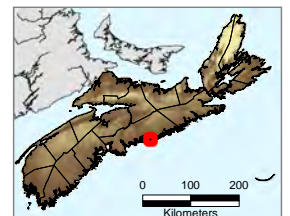
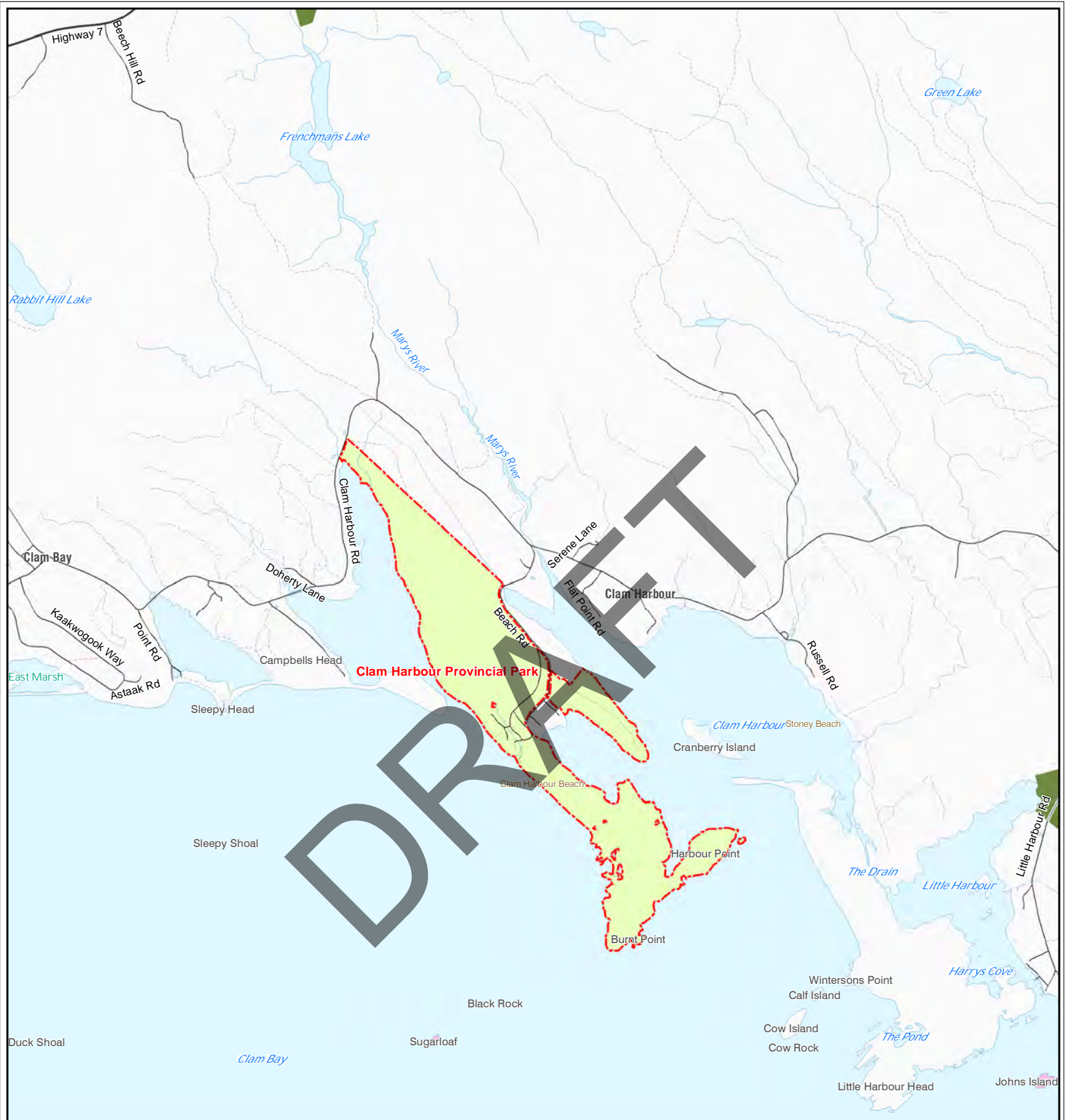
The purpose of the Clam Harbour Provincial Park (Map 1: Regional Context) is to provide opportunities for a range of low-intensity day use recreation and natural and cultural heritage appreciation, while protecting the park's outstanding landscape, biodiversity, and natural and cultural heritage. The purpose of a Park Management Plan as defined by 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 1989b). Feedback from the various engagement sessions have been incorporated into this document.

1.1 Planning Context

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

- The Nova Scotia Provincial Parks 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).

Clam Harbour Provincial Park provides coastal access and high-quality opportunities for beach activities, swimming, picnicking, and nature appreciation. It provides opportunities for both Nova Scotians and tourists to experience the breathtaking beauty of this wild Atlantic beach.



1.2 Park Classification and Zoning

Classification organizes Nova Scotia's provincial parks into broad categories, each of which has a purpose and characteristics which contribute to the overall provincial park system. Park classification defines individual park roles in providing opportunities for natural and cultural heritage protection, outdoor recreation, heritage appreciation and/or tourism. Classification is a key element in determining the general policy basis for park management which in turn determines the type and extent of activities that may take place in a park.

Park Classification is a key element in determining the general policy basis for park management which in turn determines the type and extent of activities that may take place in a park. Within the Provincial Park Systems; parks can be classified as one of seven classifications as defined under Provincial Park Regulations (Government of Nova Scotia 1989b):

- Wildland Park – natural landscapes and suited to low-intensity recreational use;
- Natural Heritage Reserve – protects natural features, sites, objects or landscapes of Provincial significance primarily for scientific and educational purposes;
- Historic Park – preserves and protects distinctive historical resources in open settings and managed for interpretive and educational research purposes;
- Natural Environment Park – incorporates representative natural landscapes in combination with outstanding recreational resources;
- Outdoor Recreation Park – 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;
- Wayside Park – 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
- Wildlife Park – 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.

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

- Environmental Protection Zone (EP) includes areas of a park that is highly sensitive or contains significant natural or historic resources that require protection. These areas provide protection of habitat of 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. Planning for

any activities or land uses within the Resource Conservation Zone must consider the full range of protection options as the priority.

- 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 natural or cultural heritage values of the park.

Based on the zone classification, DNR will evaluate lands to determine if infrastructure will be allowed, and if so, to what extent. The zones for Clam Harbour Beach Provincial Park were developed in 1977 by internal staff using information and knowledge available at the time of review and zones were delineated using landforms, vegetation, and sensitive areas.

1.3 Park Objectives

Management of Clam Harbour Provincial Park shall meet the following objective and will be consistent with the mandates of Nova Scotia Provincial Parks, as outlined in the *Provincial Parks Act* (Government of Nova Scotia 1989a).

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 landbase 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 Clam Harbour Park Management Plan

For this Park Management Plan, the planning area includes all lands within the existing park boundary and the beach area within the high-water mark to the low-water mark (Map 2: Park Boundary).



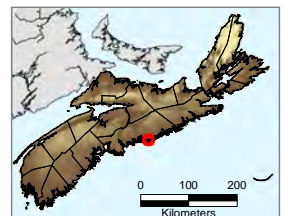
 Provincial Park

Map 2 - Park Boundary

Clam Harbour Provincial Park

0 100 200 400
Meters

6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.



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2.1 Existing Park

An Outdoor Recreation Park is a park that 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 (Government of Nova Scotia 1989a). The Park provides opportunities for day use recreation that includes: beach, coastal hiking, supervised swimming, scenic viewing and wildlife viewing, picnicking, relaxation, experiencing solitude, photography, nature appreciation, snorkeling, diving, kayaking, building sand sculptures, and kite flying.

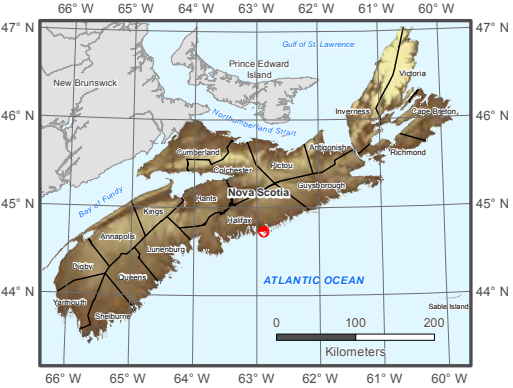
The Clam Harbour Provincial Park is located in Clam Harbour within Halifax County along the Eastern Shore. For the purposes of this Park Management Plan, the planning area includes lands within the existing park boundary at Clam Harbour Provincial Park (Map 3: Park Infrastructure). Camping and open campfires are not permitted in the Park. The closest camping opportunities are provided at Porters Lake Provincial Park and Dollar Lake Provincial Park. Lifeguards are only present at Clam Harbour Beach during weekends. In 2016, Clam Harbour Beach saw over 7,600 visitors with an average of 98 visitors per day (weekend) (NSLS 2016.). Average annual visitor numbers were thought to be low due to the inclement weather during the Sandcastle Competition.



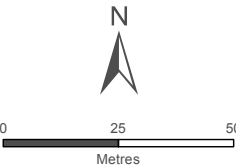
- beach access
- bench
- bridge
- change house mens
- change house womens
- charcoal pit
- garbage refundables recyclables paper
- gate
- parking
- picnic shelter
- picnic table
- power
- shower
- vault toilet unisex
- washroom mens
- washroom womens
- water tap

Map 3 - Park Infrastructure

Clam Harbour Provincial Park



- Park Boundary
- Trail
- Boardwalk
- Footpath
- Staircase
- Fence



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.

Data Sources:

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

Digital Orthophotography: Nova Scotia Department of Natural Resources (2017)



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2.2 Landscape

The Clam Harbour peninsula is an excellent example of the coastal beauty of the Eastern Shore; consisting of gently rolling drumlins, sandy beach over a kilometre long that connects to Burnt Island, a large cranberry marsh and tidal estuary with clam beds. Portions of Clam Harbour is made up of silty drumlins with multiple tills, moderate drainage and stoniness (WMDM Ecosection), while coastal lands are made up of stony till plain lands that ranged from flat to rolling terrain with surface boulders (XXCB Ecosection, IMRD Ecosection) (Government of Nova Scotia 2006) (Appendix 1: Map 4: Surficial Geology, Map 5: Ecological Land Classification). Clam Harbour Beach is located within the Eastern Shore Ecodistrict (DNR) and the Eastern Shore Beaches Natural Landscape (NSE 2002, NS DNR 2003). The site can be delimited into five physiographic areas: 1) the drumlins; 2) the island; 3) the beach; 4) the salt marsh estuary; and 5) the tidal estuary. Note that the salt marsh estuary and the tidal estuary are largely outside of the park boundary.

The Clam Harbour Provincial Park Master Plan (NS DLF 1977) provided detailed definitions of the landscape features provided below. The varying landscape at Clam Harbour characterized in the five physiographic units described previously provides a high diversity of ecosystem types and plant communities. Maps showing the features and communities within the Park can be found in Appendix 1. (Map 6: Forest Cover, Map 7: Non-Forested Cover, Map 8: Small Patch Ecosystem).

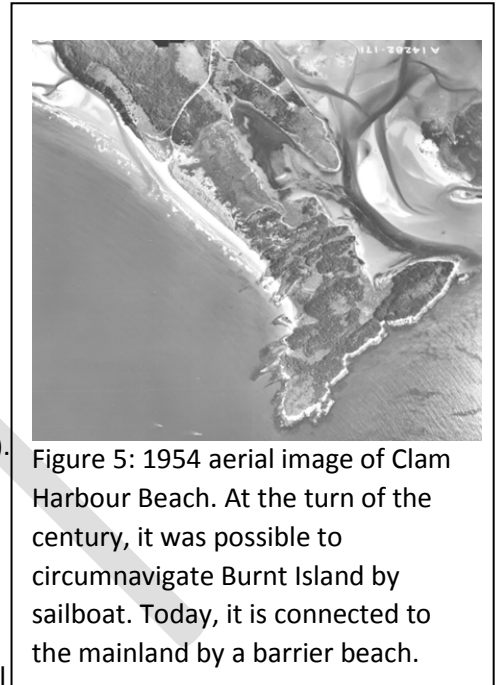


Figure 5: 1954 aerial image of Clam Harbour Beach. At the turn of the century, it was possible to circumnavigate Burnt Island by sailboat. Today, it is connected to the mainland by a barrier beach.

1) The Drumlins – These are gently rolling, elliptical hills moulded by the latest glacial advance. The drumlins range in height from 20 meters to more than 45 meters. They support a dense forest of white spruce (*Picea glauca*) and balsam fir (*Abies balsamea*) on hilltops, with black spruce (*Picea mariana*) and alder (*Alnus rugosa*) along the slopes. The rocky and stony glacial drift of the drumlins and moraines has yielded generally poor soils with imperfect drainage and nutrient characteristics. The site has been farmed in the past, and today old field growth species such as white spruce and alder dominate much of the drumlins. The material of which these drumlins are composed is a clay rich glacial till derived from Goldenville slate and greywacke bedrock which underlies the area. Impeded drainage characteristics of this material are exemplified by the presence of dense balsam fir forests, alders recolonizing abandoned farm fields, slumping slopes and the general presence of water logged soils throughout the area.

2) The Island – This area is quartzite bedrock showing a dominant northeast-southeast strike overlain with a thin veneer of glacial till. These hard rocks resist the erosive forces of time, and today are covered by a thin layer of glacial till in which a windswept forest of balsam fir and white spruce grows. The shorelines around Burnt Island are windswept, high energy environments, with smoothed bedrock surfaces and salt spray controlled plant communities which characterize the island. Sub unit features of the Burnt Island Unit include: rock ridges; crowberry headlands and ponds; freshwater marsh; salt marsh; and perched dunes and ponds. The island is dominated with white and red spruce (*Picea rubens*) trees, while sheep laurel (*Kalmia agustifolia*), Labrador tea (*Ledum groenlandicum*) and alder make up the understory.

Black spruce, larch (*Larix laricina*), and alder are found in poorly drained depressions. Exposed coastal areas have a thick carpet of crowberry (*Empetrum spp.*).

3) The Beach – A wide barrier beach of fine white sand extends into the ocean more than 50 meters. This beach, which links Burnt Island and the drumlins, has a 2-meter high dune face and acclaimed by residents to provide the warmest swimming waters of the Eastern Shore. It terminates to the north in the salt marsh estuary. The barrier beach is a more recent developing taking shape from the scouring and recycling of offshore beaches and rock formations of former times. The area is formed from a combination of factors; including sediment transported into this sheltered area of Clam Bay from Sleepy Head, onshore southwesterly winds during summer and an incrementally increasing sea level. Due to erosion and retreat of the Barrier Beach into Clam Harbour, the beach has been identified as one of the most environmentally sensitive areas within the Park. Other features of this area include: marram beach ridge; bayberry-white spruce dune; cranberry marsh; high salt march; low salt marsh; and washover bar.

4) The Salt Marsh Estuary – The western estuary, framed on the east and west by drumlins, contains a high salt marsh channeled by the tides and river. It was formed by deposition of suspended sediments as river waters entered the delta. In the past, eelgrass (*Zostera marina*) reduced water flow inducing additional sedimentation. Gradually, deltaic sediments were colonized by cordgrass (*Spartina patens*) to form a low salt marsh. With additional accumulation of river sediments, the contemporary high salt marsh emerged, populated with meadow grass (*Spartina alterniflora*).

5) The Tidal Estuary – This estuary is dominated by sand and mud flats. The continually flooded eelgrass zone is infilling and eventually will evolve into a low salt marsh. The salt marsh estuary and this tidal estuary provide an excellent example of two distinctly different stages in salt marsh evolutionary history. The influences of freshwater inflow and ponding become more significant in the upper portions of the system away from the sea. This area contains significant bird habitat. Other features of this area include: tidal flat; salt marsh; and fresh water marsh.



Figure 1: 1980s aerial image showing the Drumlins physiographic unit and park infrastructure.



Figure 2: The Islands physiographic unit, showing quartzite bedrock and crowberry.



Figure 3: The Beach physiographic unit.



Figure 4: Stairs coming down from the drumlin onto the beach, with the outlet of the salt marsh estuary shown in the background.

There are several registered archaeological sites located within the park boundary. These sites include both pre-contact First Nations sites and historic period archaeological resources, and include shell midden resources associated with hunting, gathering, and fishing activities. The entire park area is considered to have elevated potential for containing archaeological resources.

2.3 Biodiversity

The park provides habitat to six rare bird species, including the piping plover; which is listed as Endangered (COSEWIC 2013, NS DNR 2000). Confirmed nesting of piping plovers has not been verified at Clam Harbour for many years; but they have been spotted on the beach. The website eBird provides an unofficial bird list that includes 51 species (eBird 2018). A number of listed species have been documented within the area of Clam Harbour Provincial Park as the Park and the surrounding area have a diversity of habitat to support a variety of species such as dragonflies, butterflies, migratory birds and mammals (Appendix 1: Map 9: Significant Habitat, Map 10: Wetlands, Map 11: Drainage).

3.0 Clam Harbour Zoning




Zoning is a tool that spatially delineates areas within a park that have common management objectives, intentions, values and/or uses. Policies are applied in each zone to enable different management approaches that are appropriate for those areas.

The Park includes four zones, described below (Map 12: Clam Harbour Zones).

Table 1. – Zoning Descriptions, Management and Planning

Zone Name	Description	Management Intent	Planning Considerations
Environmental Protection Zone (EP) (9.5 hectares)	Dune system.	<ul style="list-style-type: none"> To protect highly sensitive or significant natural or historic resources. 	<ul style="list-style-type: none"> Interpretive, educational and/or scientific activities may be permitted, where these activities do not conflict with the underlying protection objectives of the zone.
Recreation Development Zone (RD) (21 hectares)	Eastern portion of the Drumlin and a small portion of the Beach.	<ul style="list-style-type: none"> To provide high quality day use recreation opportunities that includes accessible coastal access, scenic viewing, picnicking, walking, nature appreciation, and cultural heritage appreciation. Layout of this area is intended to allow for limited infrastructure and support beach access. 	<ul style="list-style-type: none"> Development may include accessible boardwalks, change houses, toilets, showers, parking areas, interpretive kiosks, picnic tables, and/or benches.
Resource Conservation Zone 1 (RC1) (151.5 hectares)	Drumlins and the Island.	<ul style="list-style-type: none"> To protect natural and cultural features, and provide low-impact recreation such trail hiking. 	<ul style="list-style-type: none"> Activities and infrastructure that do not conflict with the inherent natural character and aesthetic qualities of the park resource base may be permitted.
Resource Conservation Zone (RC2) (3.5 hectares)	Sandy beach area.	<ul style="list-style-type: none"> To protect natural and cultural features and low-impact recreation. 	<ul style="list-style-type: none"> Activities and infrastructure that do not conflict with the inherent natural character and aesthetic qualities of the park resource base may be permitted.



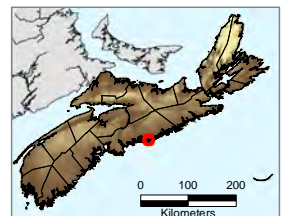
-  Environmental Protection Zone (EP)
-  Resource Conservation Zone 1 (RC1)
-  Resource Conservation Zone 2 (RC2)
-  Recreation Development Zone (RD)

Map 12 - Zoning

Clam Harbour Provincial Park



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.



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4.0 Issues and Concerns

4.1 Natural

Clam Harbour Beach is susceptible to coastal processes (i.e. storm events with high tidal surges or wind driven waves) that cause site erosion, particularly along the dune faces and the cliff interface. The rate of sea level rise in the Halifax area and thus Clam Harbour has remained constant over the last 100 years, a period over which there is good tide gauge data. There has been no decadal to multi-decadal acceleration in the rate of sea level rise in recent decades. However, the long-term rate of sea level rise may accelerate. Regardless, the present rate of sea level rise may threaten the dune system, biodiversity values, and park infrastructure. It will cause present beach systems to change as these are dynamic systems.

Based on the geological and coastal resource analysis, the DNR geologist anticipates that the beach system at Clam Harbour will remain stable within the present parameters of change for many decades, possibly centuries. It is possible that the beach may erode and then rebuild in response to major storms, on a time scale of several decades. If sea level rise accelerates, the acceleration is not anticipated to be significant until the 2050s. Since global sea level rise is very region specific, with higher rates being realized in the western Pacific, it is quite uncertain how an acceleration in the global average will affect areas in Nova Scotia (Goddard et al 2015).

The main wildlife values within the park are associated with the dune system, beach, headlands, and saltmarshes. 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 due to climate change. Therefore; identifying high risk areas early in the planning process may ensure protection of areas and placement of infrastructure in low risk areas.

Vegetation will be managed according to the Guidelines for Vegetation Management in Provincial Parks, Park Reserves, Protected Beaches, and Trails (NS DNR, 2002). Through the planning process, areas may be identified for vegetation restoration for rare species or as mitigation from past infrastructure. Any vegetation removed for infrastructure or public safety should remain on-site to provide wildlife habitat where possible. Through the planning process, planting of non-native species for aesthetic purposes is not permitted.

4.2 Anthropogenic

For most of the year Clam Harbour is not heavily used, however the Sand Castle Festival sees upwards of 10,000 people over one weekend each year. The Park is located in a coastal system with salt marsh and tidal estuaries, dunes and drumlins and a sandy beach area; this system is impacted by storms and sea level changes causing beach retreat inland and erosion (Goddard et al 2015). The beach and dune systems at Clam Harbour Beach are also under threat from pedestrian traffic and off-leash dogs, causing trampling and loss of marram grass which increase the risks of dune erosion. Current infrastructure on-site allowed for viewsapes when the area was built; but natural vegetation growth overtime has caused the viewscape to be lost and a natural forest community to form. The growth of this community has caused impacts to the existing infrastructure (i.e. boardwalks, buildings, etc).

5.0 Mi'kmaq Consultation and Engagement

DNR will continue to support Mi'kmaq initiatives and activities at Clam Harbour Provincial Park. Discussions regarding Park Management Plans will be ongoing and potential for partnerships may be formed including development of signage for Parks acknowledging historic aboriginal lands.

6.0 Public Engagement

Through public engagement sessions; valuable information was provided. Information provided at engagement sessions and through emails have been divided into opportunities: Protection; and Public and Recreational Opportunities. Under each opportunity; actions are 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 core building and facilities, parking, 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, general maintenance of existing infrastructure, etc.

7.0 Policies for Clam Harbour

This section provides site specific management policies and any associated actions required to effectively manage Clam Harbour Provincial Park in accordance with applicable legislation and policies. The policies are broken down into management themes (e.g., wildlife, recreation) and sub-headings.

7.1 Protection Opportunities

Through the Zoning portion of the Park Management Plan, environmentally sensitive areas are identified in the Park under the Environmental Protection Zone. The beach area has been identified as the most sensitive community and faces threats from visitor disturbance, and erosion. Anticipated threats include increased coastal erosion and sea level rise; due to climate change over several decades or centuries. Native flora and fauna communities present in these areas are also to be protected throughout the Park. Lands identified as Resource Conservation Zones in Clam Harbour are areas where lands may be evaluated and may allow infrastructure.

7.1.1 Management

Actions to address protection of environmentally sensitive areas may include:

- Restricting large Park Infrastructure to specific zones;
- Limiting Park developments to occur during specific activity window critical for species such as migratory birds;
- Encourage design of Park infrastructure to consider long term effects of erosion and storm events;
- Establish educational programs or interpretative signage to increase awareness of various environmental topics. Parks may explore installation of interpretive kiosk or panels to help visitors gain an understanding of the park and its resources. Potential themes may provide information on coastal processes, habitats, or cultural history. DNR 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. Planting of non-native species for aesthetic purposes is not permitted.

- Vegetation will be managed according to the Guidelines for Vegetation Management in Provincial Parks, Park Reserves, Protected Beaches, and Trails (NS DNR, 2002).
- Restoration of forest to Acadian Forest ecosystem.
- Identification of flora and fauna through interpretative signage. Encourage Park users to record flora and fauna sightings using online record sites. Notify Park staff of rare or invasive species sightings or provide information through NS Government website – Department of Natural Resources -Wildlife and Biodiversity - Significant Species and Habitats Database.
- An archaeological resource impact assessment may be completed if any new park infrastructure requires significant ground disturbance. No activities will be permitted that may threaten or harm cultural heritage resources.
- There will be no enhancements to the beach itself (e.g., removing seaweed, raking sand, or installing dune fencing), apart from removing potentially hazardous debris (e.g., lobster traps).
- DNR would support, in principle, adding 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 will be evaluated based on contribution to park objectives, willing seller/willing buyer, and available funding.
- DNR will continue to support research projects within Clam Harbour Provincial Park provide there are no adverse impacts to the park environment or visitor experience.

7.1.2 Operational

Actions to address protection of environmentally sensitive areas may include:

- Any trees, limbs, or branches that pose a risk to public safety or park operations will be removed. Removed vegetation should remain on-site to provide wildlife habitat and increase biodiversity, wherever possible. Park operations and maintenance may require the removal of trees and brush around buildings and structures. All activities will ensure Burn Safe and Wildfire protocols are followed.
- Unauthorized footpaths are considered a non-conforming use. DNR may erect interpretive signage to educate visitors and staff about the sensitivities of the various ecosystems present in the area (e.g. dunes, mosses and lichens, etc.), and the importance of staying on authorized access points;
- May hold meetings with NSE to discuss increase enforcement in the Park
 - Off-leash dogs;
 - walking on the dunes and sensitive areas within the park;
 - parking enforcement; and
 - other enforcement issues.
- Increase education and awareness of wildlife values and cultural heritage. Potential themes may range from interpretation of coastal processes, habitats to cultural history. DNR will work with interested partners in developing interpretive opportunities; and
- Increase promotion of leave no trace principles.
- Any fire that may occur in the park will be actively suppressed. 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 provides further direction on insect and disease management.

7.2 Public and Recreational Opportunities

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

7.2.1 Management

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

- There will be no enhancements to the beach itself (e.g., removing seaweed, raking sand, or installing dune fencing), apart from removing potentially hazardous debris (e.g., lobster traps).
- Opportunities should be explored to enhance the accessibility of the park facilities throughout any future redevelopment (e.g., accessible change houses, washrooms, parking, and picnic facilities).
- The core facility has reached the end of its lifespan and needs to be replaced. If a new core facility is to be built it may provide a variety of services such as change rooms, showers, toilets, a staff office and supply room (e.g. lifeguard usage). It should be accessible by wheelchair and have nearby accessible parking.
- Upgrades to the area may range from an accessible picnicking area, a large outdoor shelter, water taps, BBQ area and charcoal pits. Other infrastructure that may be considered include bicycle racks, outdoor shower towers and foot wash stations with hose attachments if deemed necessary for the area.
- Designated parking spot near the core facility may be provided for emergency and enforcement vehicles.
- Improvements related to the parking lots and traffic circulation may be considered in the Park design; such as road widening.
- A redesign of the main parking lot may be explored to increase parking capacity. Designated parking should include accessible, emergency and enforcement, and bus parking as well as a turnaround area for larger vehicles and a designated drop-off / pick-up lane will be located near the proposed core facility.
- DNR may explore opportunities for enhancement of the lifeguard station, staff and maintenance areas as required.
- Traffic control measures may be installed such as speed bumps.
- Additional parking may be considered if deemed necessary and is subject to ecological and archeological review, and other necessary approvals.
- To help support active transportation and bike touring, bicycle racks should be installed near the parking lot.
- Picnic areas incorporated in the new facility design and adjacent green spaces should be considered and incorporate accessibility options for park users.
- 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. DNR may investigate options to better provide accessible access to the beach and lookout.
- Any future boardwalks and trails should consider the impacts and risks to the Park System, erosion potential of the dunes and other environmental considerations, safety concerns and long-term viability of structures.
- Power hookups may be provided in a designated area within the parking lot to support food vendors; if permitted.
- DNR is currently developing policy to enable more food and non-food concessions within provincial parks.
- DNR may pursue opportunities for partnerships involving other agencies and groups through formal partnership agreements. Partners may work with DNR to assist with the implementation of the

approved Park Management Plan and will follow provincial park policies, standards, and regulations.

7.2.2 Operational

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

- The park operations plan may 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 (available upon request).
- DNR is currently developing policy to enable more food and non-food concessions within provincial parks.
- Increase enforcement of dogs-off leash and walking on the dunes within the park;
- Options for enhancing off-season access may be explored. Off-season access (mid-October to mid-May) may be accommodated for by keeping a small parking lot open. During this time, people are welcome to use the park understanding that the park is not staffed or maintained.
- Repairs and upgrades to current infrastructure may be evaluated replaced as needed.
- DNR will continue to support the Nova Scotia Lifeguard Service to provide supervised swimming at the Park during the summer months. The supervised swimming area is approximately 100 metres in width, and is marked by red and yellow flags (NSLS 2016).
- Upgrades to the Coastal Hiking Trail may be done to ensure the trail is kept within its current footprint (e.g. mitigation to drain wet sections, protect from erosion, route connection, etc.). Future trail connections may be considered.
- No amenities or services will be provided along the trail, although interpretive signage and benches may be permitted.
- Vegetation maintenance (e.g. trimming, selective removal, etc.) may occur at selected viewpoints to ensure scenic views are not impeded for Park users. Vegetation maintenance may only occur if no potential adverse ecological or erosion impacts occur.
- The gate at the park entrance is closed annually during the off-season from mid-October to mid- May. During this time, people are welcome to use the park understanding that the park is not staffed nor maintained. Options for enhancing off-season access may be explored.
- DNR is currently reviewing way-finding sign standards and may install new directional signs.

8.0 Next Steps

Prior to any work performed in the Park; 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 are recommended, especially if development is proposed in an Environmental Protection Zone.
- An archaeological resource impact assessment may be completed if any new park infrastructure requires significant ground disturbance.

9.0 Conclusion

The Management Plan for Clam Harbour Provincial Park 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 needed. In circumstances where the Plan is not providing 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.

10.0 References

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Appendix: Clam Harbour Maps

Map 4: Surficial Geology

Map 5: Ecological Land Classification

Map 6: Forest Cover

Map 7: Non-Forested Cover

Map 8: Small Patch Ecosystem

Map 9: Significant Habitat

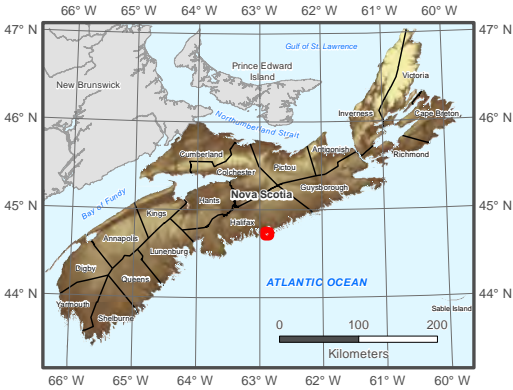
Map 10: Wetlands

Map 11: Drainage

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Map 4 - Surficial Geology

Clam Harbour
Provincial Park



- County Boundary

Trans Canada

Arterial Highway

Trunk Highway

Collector Highway

Road (Other)

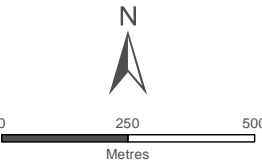
Track (2m & wider)

Trail / Footpath
- Park Boundary

Surficial Geological Units

Silty Drumlin (Drumlin Facies)

Stony Till Plain (Ground Moraine)



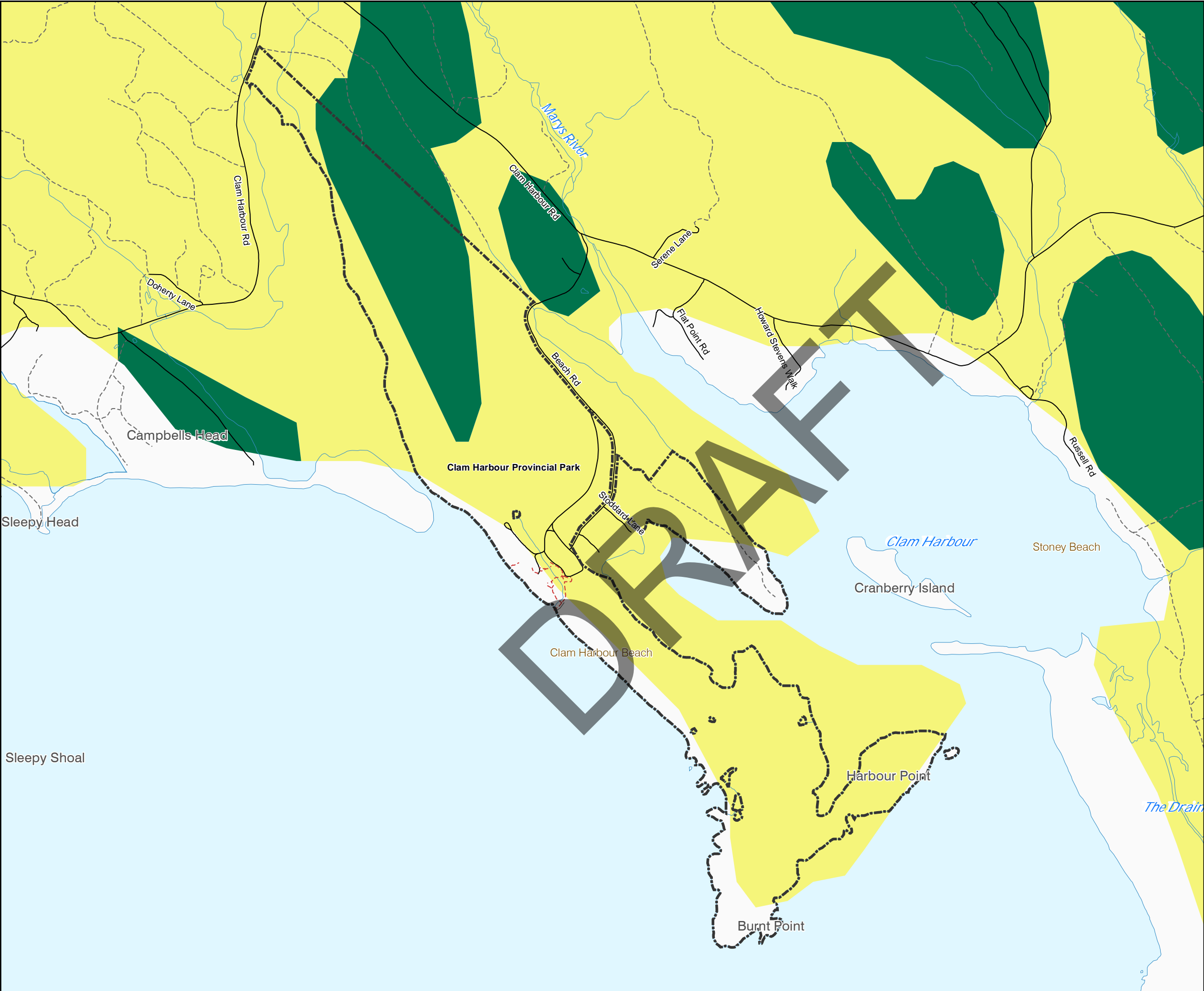
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Central Meridian 63°00' West, North American Datum (NAD) 1983.

Data Sources:

Nova Scotia Road Network, Nova Scotia Topographic Database:
Service Nova Scotia and Municipal Relations
Surficial Geology (1:500,000): Nova Scotia Department of Natural Resources

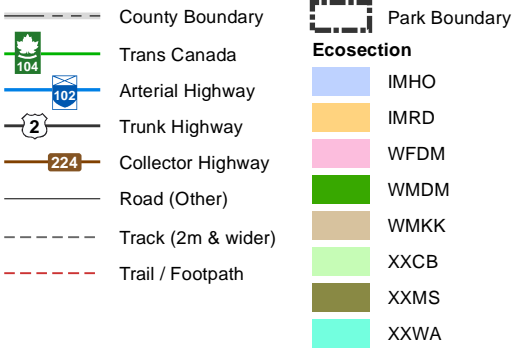
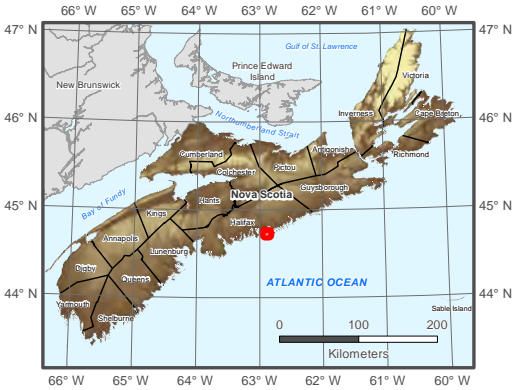


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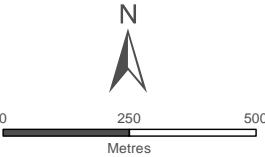
Map 5 - Ecological Land Classification - Ecosession

Clam Harbour Provincial Park



Ecosession Classification

IMHO Imperfectly drained, medium textured soils on hummocky terrain
IMRD Imperfectly drained, medium textured soils on ridged topography
WFDM Well drained, fine textured soil on drumlins or flutes
WMDM Well drained, medium textured soil on drumlins or flutes
WMKK Well drained, medium textured soil on hilly terrain
XXCB Coastal beach
XXMS Salt marsh
XXWA Inland water



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' 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

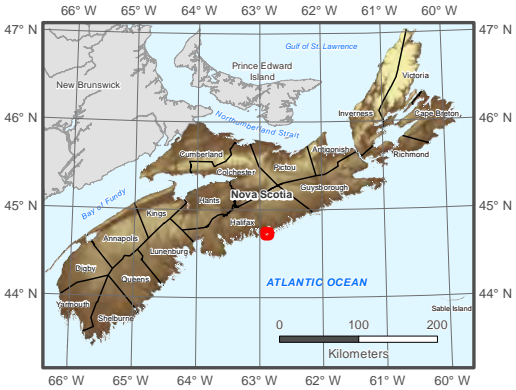


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Map 6 - Forest Cover-type

Clam Harbour
Provincial Park



- County Boundary

Trans Canada

Arterial Highway

Trunk Highway

Collector Highway

Road (Other)

Track (2m & wider)

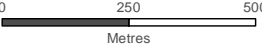
Trail / Footpath
- Park Boundary

Forest Cover-type

Softwood

Mixedwood

Hardwood



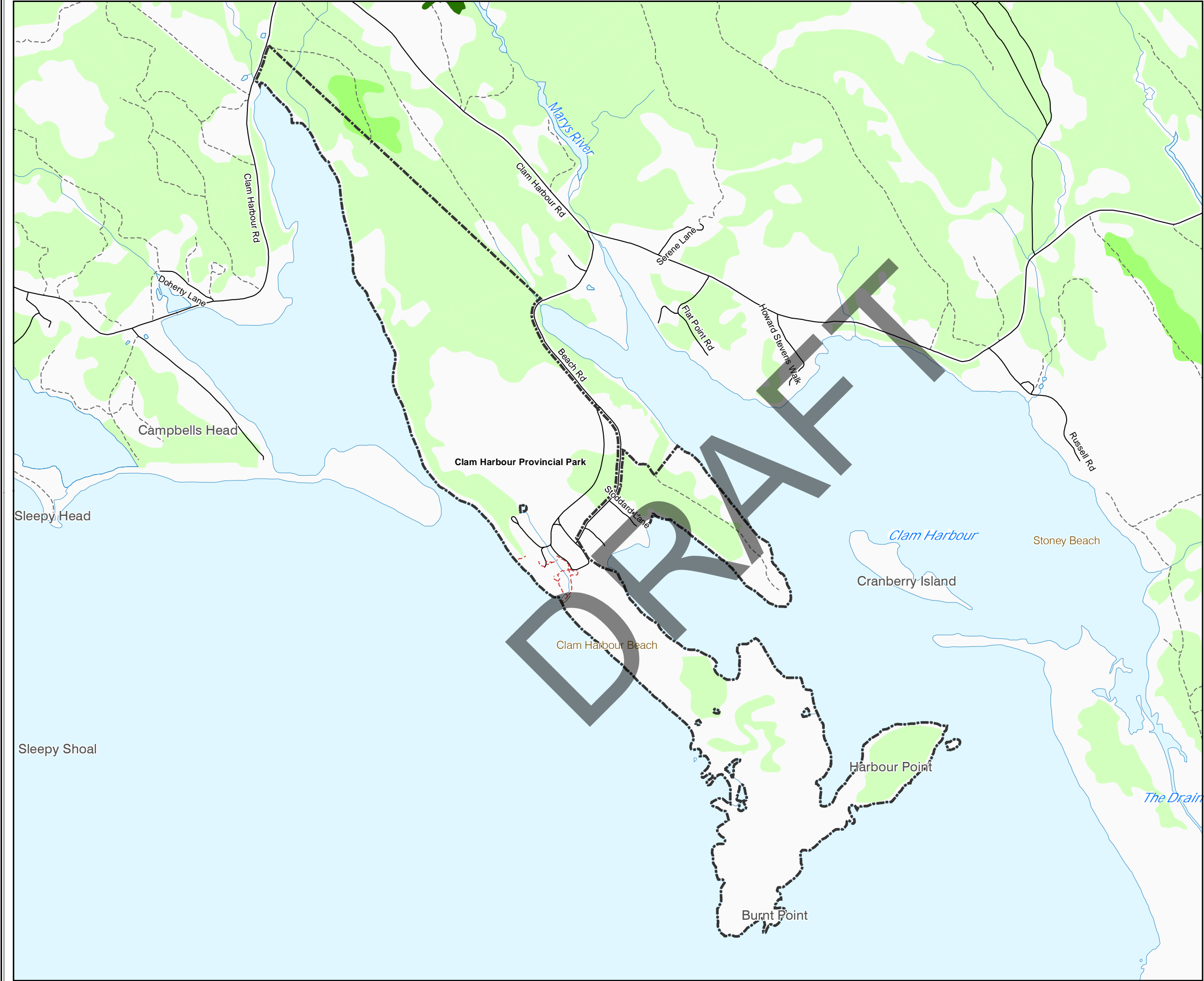
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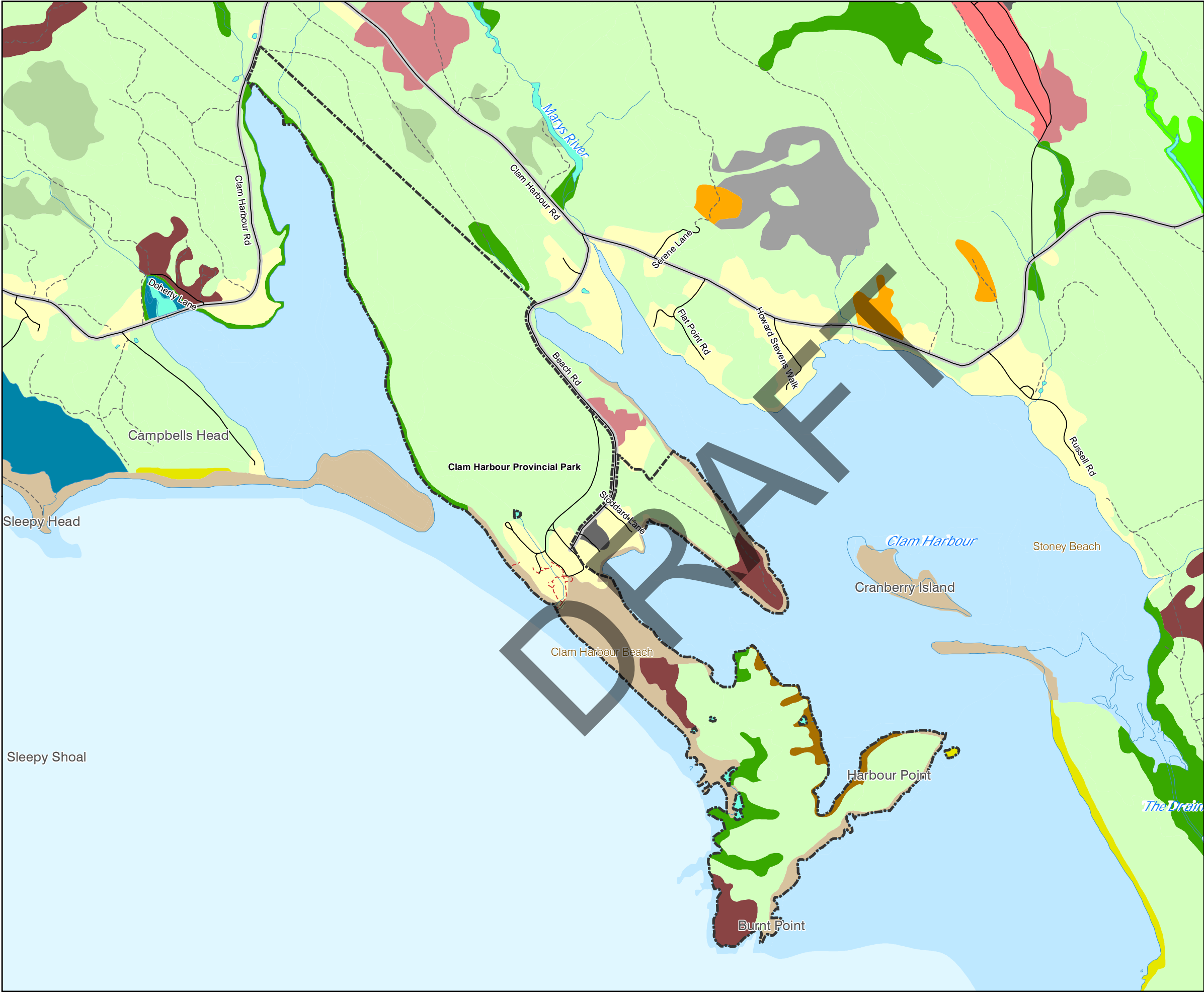
Data Sources:

Nova Scotia Road Network, Nova Scotia Topographic Database:
Service Nova Scotia and Municipal Relations
Forest Inventory 1995-present (Cycle 2 and 3 with Additional Updates): Nova Scotia Department
of Natural Resources



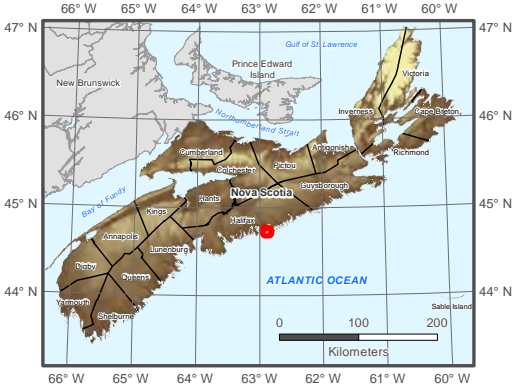
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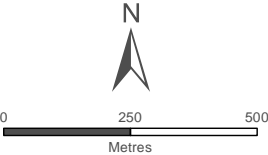


Map 7 - Non-Forested

Clam Harbour
Provincial Park



- | | |
|--------------------|------------------------------|
| County Boundary | Park Boundary |
| Trans Canada | Non-Forested |
| Arterial Highway | Natural stand |
| Trunk Highway | Christmas trees |
| Collector Highway | Dead (<25% live) |
| Road (Other) | Dead -1 (26-50% live) |
| Track (2m & wider) | Brush |
| Trail / Footpath | Clear cut |
| | Wetlands general |
| | Open bogs |
| | Treed bogs |
| | Coastal habitat areas |
| | Lake wetland |
| | Cliffs, dunes, coastal rocks |
| | Inland water |
| | Ocean |
| | Barren |
| | Agriculture |
| | Urban |
| | Beach |
| | Road corridor |



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.

Data Sources:

Nova Scotia Road Network, Nova Scotia Topographic Database:
Service Nova Scotia and Municipal Relations
Forest Inventory 1995-present (Cycle 2 and 3 with Additional Updates): Nova Scotia Department
of Natural Resources

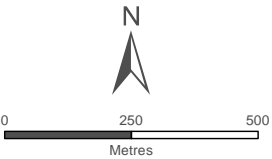


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Map 8 - Small Patch Ecosystems
Clam Harbour
Provincial Park



- | | | | |
|--|--------------------|--|--------------------|
| | County Boundary | | Park Boundary |
| | Trans Canada | | Beach/dune |
| | Arterial Highway | | Coastal barren |
| | Trunk Highway | | Coastal cliff |
| | Collector Highway | | Coastal open bog |
| | Road (Other) | | Coastal shrub bog |
| | Track (2m & wider) | | Coastal treed bog |
| | Trail / Footpath | | Erosional seabluff |
| | | | Estuarine flat |
| | | | Lagoon |
| | | | Offshore Island |
| | | | Salt Marsh |



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.

Data Sources:

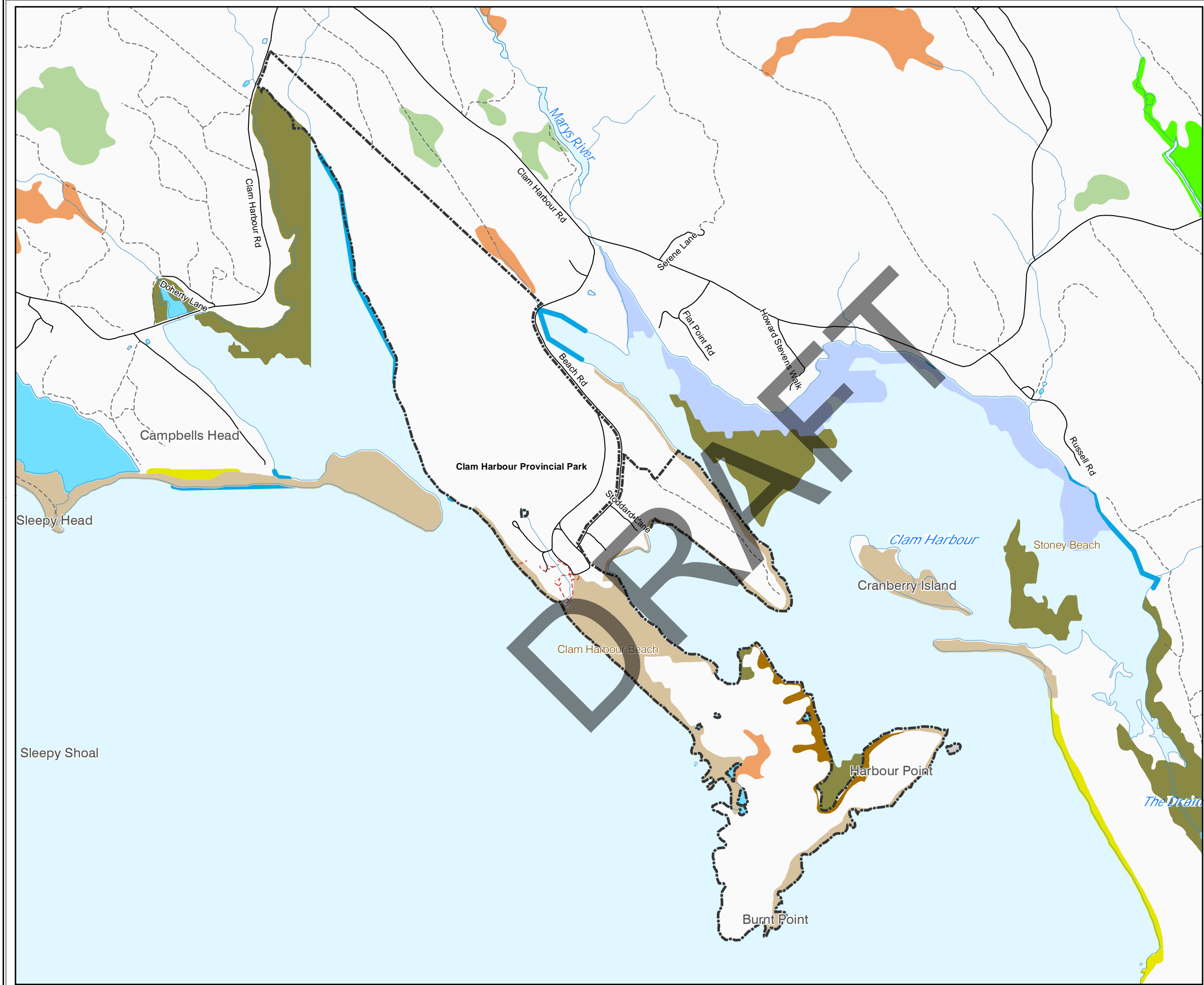
Nova Scotia Road Network, Nova Scotia Topographic Database:
Service Nova Scotia and Municipal Relations

Small Patch Ecosystems: Nova Scotia Department of Environment



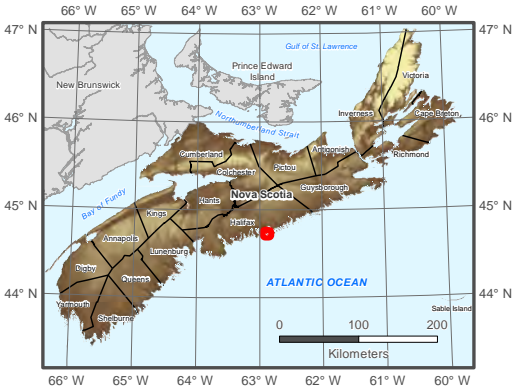
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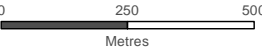


Map 9 - Significant Habitat

Clam Harbour
Provincial Park



- County Boundary
- Trans Canada
- Arterial Highway
- Trunk Highway
- Collector Highway
- Road (Other)
- Track (2m & wider)
- Trail / Footpath
- Park Boundary
- Significant Habitat**
- Species at Risk



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.

Data Sources:

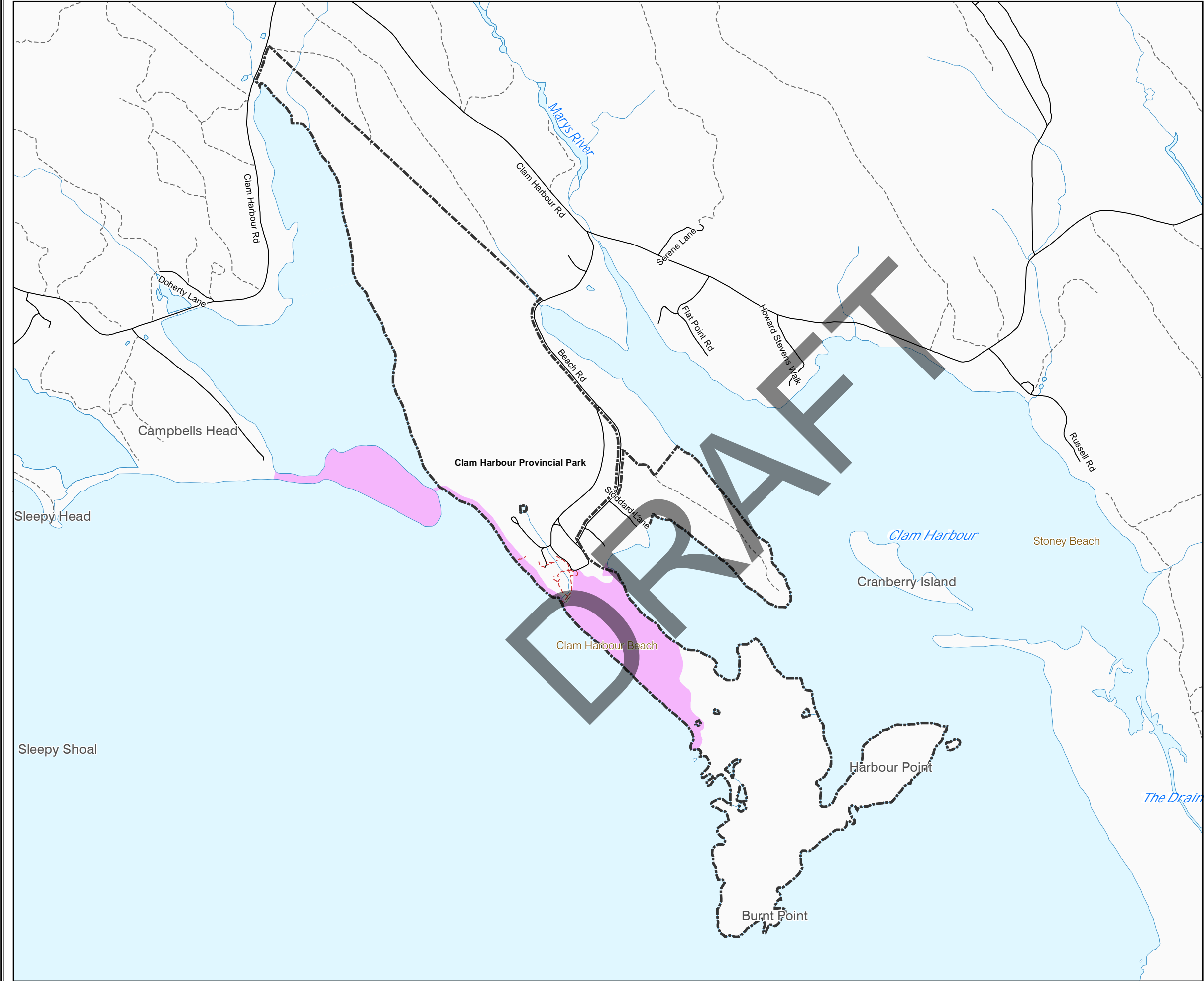
Nova Scotia Road Network, Nova Scotia Topographic Database:
Service Nova Scotia and Municipal Relations

Significant Species and Habitats Databases: Nova Scotia Department of Natural Resources



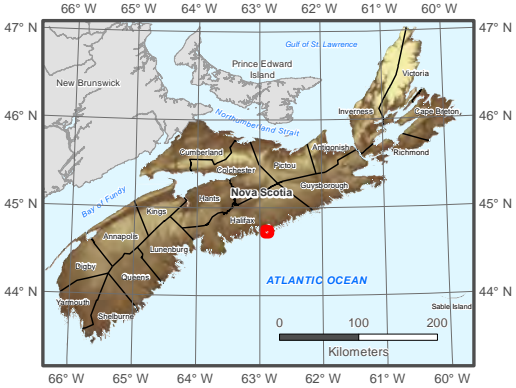
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Map 10 - Wetlands

Clam Harbour
Provincial Park



- County Boundary

Trans Canada

Arterial Highway

Trunk Highway

Collector Highway

Road (Other)

Track (2m & wider)

Trail / Footpath
- Park Boundary

Wetlands

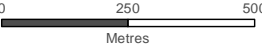
Fen

Marsh

Peatland

Salt Marsh

Swamp



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.

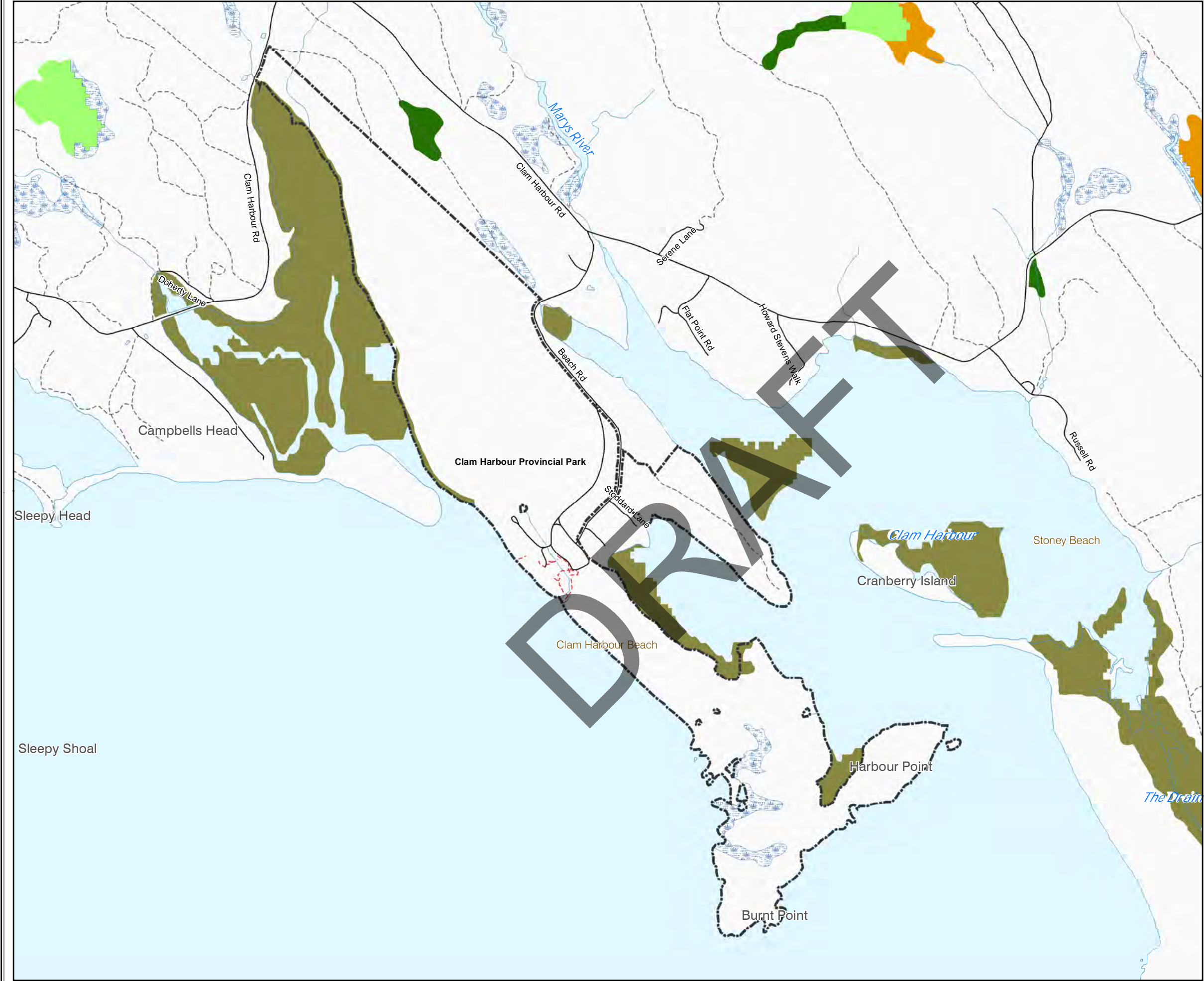
Data Sources:

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

Wetland Vegetation and Classification: Nova Scotia Department of Natural Resources

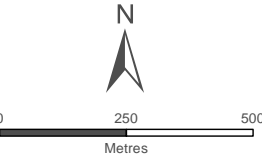
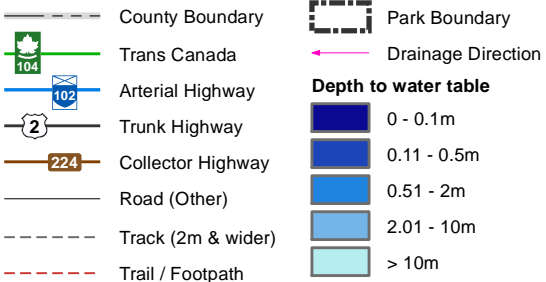
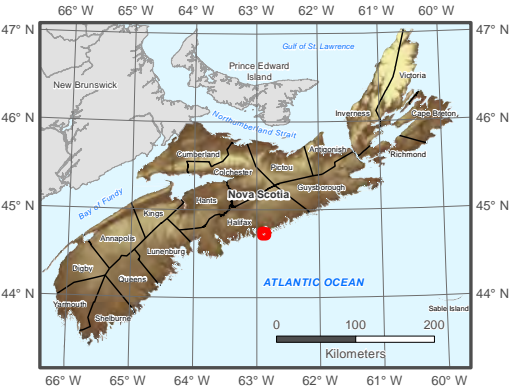


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Map 11 - Drainage

Clam Harbour
Provincial Park



6° Universal Transverse Mercator (UTM) Projection, Zone 20,
Central Meridian 63°00' West, North American Datum (NAD) 1983.

Data Sources:

Nova Scotia Road Network, Nova Scotia Topographic Database:
Service Nova Scotia and Municipal Relations
Wet Areas Mapping: Nova Scotia Department of Natural Resources



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