

Amended Recovery Strategy and Amended Action Plan for the

# Piping Plover *melodus* subspecies (*Charadrius* *melodus melodus*) in Canada



2026

*Species at Risk Act*  
Recovery Strategy Series

Canada

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For copies of the recovery strategy, or for additional information on species at risk, including the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status Reports, residence descriptions, action plans, and other related recovery documents, please visit the [Species at Risk \(SAR\) Public Registry](#)<sup>1</sup>.

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<sup>1</sup> [www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html](http://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html)

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Également disponible en français sous le titre  
« Programme de rétablissement modifié et Plan d'action modifié pour le Pluvier siffleur  
de la sous-espèce *melodus* (*Charadrius melodus melodus*) au Canada »

## Preface

The federal, provincial, and territorial government signatories under the [Accord for the Protection of Species at Risk \(1996\)](#)<sup>2</sup> (the Accord) agreed to establish complementary legislation and programs that provide for effective protection of species at risk throughout Canada<sup>3</sup>. Under the [Species at Risk Act \(S.C. 2002, c.29\)](#)<sup>4</sup> (SARA), the federal competent ministers are responsible for the preparation of recovery strategies for listed Extirpated, Endangered, and Threatened species and are required to report on progress within five years after the publication of the final document on the Species at Risk Public Registry.

The Minister of the Environment, Climate Change and Nature and Minister responsible for Parks Canada is the competent minister under SARA for the Piping Plover *melodus* subspecies and has prepared this recovery strategy and action plan, as per sections 37 and 47 of SARA. To the extent possible, it has been prepared in cooperation with the Provinces of Quebec, New Brunswick, Prince Edward Island, Nova Scotia and Newfoundland and Labrador. It was developed in cooperation and consultation with Indigenous peoples and communities, the Eastern Canadian Piping Plover Recovery Team, non-governmental organizations, and other conservation partners and stakeholders as per subsections 39(1) and 48(1) of SARA.

Success in the recovery of this species depends on the commitment and cooperation of many different partners that will be involved in implementing the directions and actions set out in this recovery strategy and action plan and will not be achieved by Environment and Climate Change Canada, Parks Canada, or any other jurisdiction alone. All members of the public are invited to join in supporting and implementing this strategy and action plan for the benefit of the species and society as a whole.

This recovery strategy and action plan provide information on recovery measures to be taken by Environment and Climate Change Canada and Parks Canada and other jurisdictions and/or organizations involved in the conservation of the species. Implementation of this strategy is subject to appropriations, priorities, and budgetary constraints of the participating jurisdictions and organizations.

The recovery strategy sets the strategic direction to support the recovery and/or survival of the species. It provides all persons in Canada with information to help take action on species conservation, including identification of critical habitat to the extent possible. Where available, critical habitat spatial data is found in the [Critical Habitat for Species at Risk National Dataset](#)<sup>5</sup>.

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<sup>2</sup> [www.canada.ca/en/environment-climate-change/services/species-risk-act-accord-funding.html#2](http://www.canada.ca/en/environment-climate-change/services/species-risk-act-accord-funding.html#2)

<sup>3</sup> The Government of Quebec is not signatory to the Accord for the Protection of the Species at Risk (1996). However, the Government of Quebec does cooperate with the federal government in the conservation of species at risk of common interest.

<sup>4</sup> <https://laws.justice.gc.ca/eng/acts/S-15.3/index.html>

<sup>5</sup> <https://open.canada.ca/data/en/dataset/47caa405-be2b-4e9e-8f53-c478ade2ca74>

When critical habitat is identified, either in a recovery strategy or an action plan, SARA provides a legal framework that enables the protection of that critical habitat.

In the case of critical habitat identified for terrestrial species, including migratory birds, SARA requires that critical habitat identified in a federal protected area, referred to in SARA ss. 58(2), be described in the *Canada Gazette* within 90 days after the recovery strategy or action plan that identified the critical habitat is included in the Public Registry. The prohibition against destruction of critical habitat under subsection (ss.) 58(1) will apply 90 days after the description of that critical habitat is published in the *Canada Gazette*.

For critical habitat located on federal lands that are not a federal protected area, as in SARA ss. 58(2), the competent minister must make an order applying the ss. 58(1) prohibition against destruction of critical habitat if it is not already legally protected by a provision in, or measure under, SARA or any other Act of Parliament. If the competent minister does not make the order, a statement must be included on the Species at Risk Public Registry setting out how the critical habitat, or portions of it are legally protected on those federal lands.

If there are portions of critical habitat of a migratory bird to which the following applies:

- 1) Habitat to which the Migratory Birds Convention Act, 1994 applies, AND
- 2) Not on federal land, within the exclusive economic zone, or on the continental shelf of Canada, AND
- 3) Not within a migratory bird sanctuary

SARA requires that the Minister recommend that the Governor in Council make an order to prohibit destruction of critical habitat, if the competent minister forms the opinion that there are no provisions in, or measures under, SARA or other Acts of Parliament that legally protect them. If the competent minister does not make the recommendation, a statement must be included on the Public Registry setting out how those portions of critical habitat for the migratory bird are legally protected.

For any other part or portion of critical habitat located on non-federal lands (including the portions of critical habitat of a migratory bird that are not habitat to which the Migratory Birds Convention Act, 1994 applies), if the competent minister forms the opinion that any portion of critical habitat is not protected by provisions in or measures under SARA or other Acts of Parliament, or the laws of the province or territory, SARA requires that the Minister recommend that the Governor in Council make an order to apply the ss. 61(1) prohibition against destruction of critical habitat. The discretion to protect critical habitat on non-federal lands that is not otherwise protected rests with the Governor in Council.

## Acknowledgments

This 2026 update was prepared by Julie McKnight (Environment and Climate Change Canada, Canadian Wildlife Service (ECCC-CWS) – Atlantic Region) as an update to the 2022 amended Recovery Strategy and Action Plan, with contributions and review from many colleagues across ECCC in the development of this 2026 update:

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- **CWS - National SAR Recovery Planning Unit:** Christie Whelan, Isabelle Ceillier
- **CWS - SAR Protection Unit:** Aurore Menard, Josiah Becker, Alyssa Desfossés, Lyn Garrah
- **CWS - SAR Compliance Promotion and Regulatory Development Unit:** Becky Moore, Madeleine Hayes, Katie Frenette
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- **Enforcement Branch - Policy and Program Support Division:** Noella Trimble, Mathieu Stiermann; **Wildlife Enforcement Operations - Quebec:** Simone Mantel; **Wildlife Enforcement Operations - Atlantic:** Katherine Lahaie
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- **CWS – Regional GIS Specialists** (updated critical habitat maps): Lee Godfrey (Atlantic), Matthieu Allard (Quebec)

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- New Brunswick Department of Natural Resources and Energy Development
- Nova Scotia Department of Natural Resources and Renewables
- Newfoundland and Labrador Department of Fisheries, Forestry and Agriculture
- Government of Prince Edward Island – Forests, Fish and Wildlife
- Parks Canada (National Office, Gros Morne, Kejimikujik National Park Seaside, Kouchibouguac, Prince Edward Island National Park)

Special recognition is given to Indigenous peoples and communities, and to the many individuals, and organizations who work directly on the ground to protect Piping Plovers and to provide the data, monitoring results, and expert advice that continue to inform recovery efforts. Much of the thoughtful input and advice provided by the Eastern Canadian Piping Plover Recovery Team and its associated working groups for the 2012 and 2022 recovery documents has been retained and continues to guide recovery planning and implementation.

## Executive Summary

This document updates and replaces the Recovery Strategy and Action Plan for the Piping Plover (*Charadrius melodus melodus*) in Canada (ECCC 2022), which replaced the Recovery Strategy for the Piping Plover (*Charadrius melodus melodus*) in Canada (Environment Canada 2012).

This 2026 update improves how critical habitat is described and documented, providing greater clarity and transparency. It does not involve a reassessment of the critical habitat identified in the 2022 amended Recovery Strategy and Action Plan. The approach used in the 2022 document builds on and differs from the methods used in the 2012 Recovery Strategy and reflects current guidance and best practices under subsection 41(1)(c) of SARA.

This 2026 update outlines how past decisions have shaped the identification of critical habitat over time and revises key sections of the 2022 document (notably sections 3.3, 7, Appendix C, and Appendix D) to improve the clarity, precision, and defensibility of critical habitat identification.

The approach used in the 2022 document is grounded in best available information (1991-2016 data, expert field assessments, and scientific literature) and follows Environment and Climate Change Canada's (ECCC's) *Critical Habitat Identification Toolbox* (2016). This 2026 update provides plain-language explanations of critical habitat components and updated mapping with beach-level documentation to improve transparency and allow changes to be followed over time.

Revisions to the critical habitat section strengthen the link between mapped areas and the specific coastal habitat features that are necessary for the survival and/or recovery of Piping Plover. The approach accounts for the natural dynamics of beach systems and ensures habitat identification remains precautionary, practical, and suitable for regulatory application under SARA. Supporting maps and appendices have also been updated to enhance clarity and make changes easier to track.

[Paragraph removed in May 2026]<sup>6</sup>

Piping Plover is a small, stocky shorebird that depends on its cryptic coloration to avoid predators. The species only nests in North America and occurs in two populations in Canada, each with subspecies status: the *melodus* subspecies breeds along the Atlantic coast of Canada and the *circumcinctus* subspecies breeds inland, in the prairie provinces and Great Lakes region.

This recovery document applies only to the *melodus* subspecies of Piping Plover. There are unknowns regarding the feasibility of recovery for the subspecies as presented in the recovery feasibility summary section. In keeping with the precautionary principle,

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<sup>6</sup> Updated May 2026

this 2026 update has been prepared in accordance with SARA section 41(1), consistent with recovery being determined technically and biologically feasible.

Piping Plover *melodus* subspecies, hereafter Piping Plover or plover, was listed on Schedule 1 of SARA, at proclamation, in June 2003. In Quebec, Piping Plover is listed as a threatened species under provincial legislation (*Loi sur les espèces menacées ou vulnérables*, RLRQ, c E-12.01). In New Brunswick, Newfoundland and Labrador, and Nova Scotia, it is listed as Endangered under each province's Endangered Species Act.

This document has been prepared to meet the requirements under SARA of both a recovery strategy and an action plan. As such, it provides both the strategic direction for the recovery of the subspecies as well as the more detailed recovery measures to support this strategic direction, outlining what is required to achieve the objectives.

Factors which directly threaten the survival of individuals include residential & commercial development (housing and urban areas), human intrusions and disturbance (e.g., motorized vehicles, beach users), problematic native species/diseases (predators), natural system modifications (e.g., beach nourishment, shoreline stabilization, beach cleaning or raking), pollution, climate change and severe weather (e.g., storms and flooding) and energy production and mining (e.g., sand and beach sediments).

The short-term population objectives are to achieve a minimum of 250 year-end pairs of Piping Plover and an annual productivity of 1.65 chicks fledged per pair. Long-term, the objectives are to increase to and maintain the population at 310 pairs; proportionally represented in each province to meet historical estimates.

Broad strategies to be taken to address the threats to the recovery of Piping Plover are presented in section 6.2: Recovery Planning Table and Implementation Schedule. An implementation schedule is included as part of the action plan requirements (section 49) and prioritizes each recovery measure and delineates timelines.

The critical habitat identified in this document is considered sufficient to support the population and distribution objectives for the Piping Plover. Subsection 41(1)(c) of SARA requires that recovery strategies include an identification of the species' critical habitat, to the extent possible, and provide examples of activities likely to result in its destruction. This document meets that requirement by applying updated methods, clearer descriptions, and a precautionary approach, consistent with SARA.

The direct and societal costs of implementing the recovery measures contained in this document (as part of the action plan content) are expected to be low (between \$0 and \$5 million) over the short term (five years) and will have limited socio-economic impact and constraints to human land use. Indirect costs are expected to be minimal and resulting benefits relate to the value of biodiversity to Canadians, ecosystem services, and conservation of other species.

## Recovery Feasibility Summary

Based on the following four criteria that Environment and Climate Change Canada uses to establish recovery feasibility, there are unknowns regarding the feasibility of recovery for Piping Plover *melodus* subspecies. In keeping with the precautionary principle, this recovery document has been prepared as per subsection 41(1) of SARA, as would be done when recovery is determined to be technically and biologically feasible. This recovery strategy and action plan addresses the unknowns surrounding the feasibility of recovery.

1. Individuals of the wildlife species that are capable of reproduction are available now or in the foreseeable future to sustain the population or improve its abundance.
  - Yes. In 2016, 174 pairs of Piping Plover *melodus* subspecies were observed in Quebec, New Brunswick, Prince Edward Island, Nova Scotia and the island of Newfoundland.
  
2. Sufficient suitable habitat is available to support the species or could be made available through habitat management or restoration.
 

Yes. Long-term monitoring shows that suitable habitat is available at a scale that exceeds population use in any given year. Even at the population peak in 2002, plovers occupied only about half of the suitable beaches surveyed that year (CWS unpublished data). This consistent pattern of the existence of substantial unused but suitable habitat indicates that habitat availability has not limited population size. Overall, the available habitat base is sufficient to support the species and to meet the population and distribution objectives.
  
3. The primary threats to the species or its habitat (including threats outside Canada) can be avoided or mitigated.
  - Unknown. The Science & Technology Branch of Environment and Climate Change Canada reviewed the species' recovery program in 2013 (Gratto-Trevor et al. 2013) and determined that the most significant factors affecting Piping Plover *melodus* subspecies appear to relate to conditions encountered in nonbreeding areas, particularly on wintering grounds. It is unclear if threats during the nonbreeding period (e.g., extreme weather events) can be mitigated.
  
4. Recovery techniques exist to achieve the population and distribution objectives or can be expected to be developed within a reasonable timeframe.
  - Yes. Agencies in Quebec, New Brunswick, Prince Edward Island, Nova Scotia and Newfoundland and Labrador implement approaches similar to those in other jurisdictions (e.g., habitat enhancement, control of unleashed pets, motorized vehicle control) and these have resulted in tremendous population increases elsewhere. Between 1991 and 2006, the U.S. Atlantic coast population of plovers increased by 95%. The success of similar programs elsewhere suggests that meeting population objectives is

feasible. Although conservation efforts elsewhere have achieved positive results, Piping Plover *melodus* subspecies is considered to be management-dependent on the Atlantic coast (USFWS 1996). Formal and informal partnerships with industry, scientists, municipal governments, federal/provincial governments, conservation organizations, property owners and the public will help achieve the long-term conservation and recovery of Piping Plover *melodus* subspecies.

## Table of Contents

Preface.....	i
Acknowledgments .....	iii
Executive Summary .....	iv
Recovery Feasibility Summary .....	vi
1. COSEWIC Species Assessment Information .....	1
2. Species Status Information .....	1
3. Species Information .....	2
3.1 Species Description .....	2
3.2 Species Population and Distribution.....	3
3.3 Needs of the Species .....	5
4. Threats.....	7
4.1 Threat Assessment .....	7
4.2 Description of Threats .....	9
5. Population and Distribution Objectives.....	12
6. Broad Strategies and General Approaches to Meet Objectives .....	13
6.1 Actions Already Completed or Currently Underway .....	13
6.2 Recovery Planning Table and Implementation Schedule.....	15
Monitoring .....	19
7. Critical Habitat.....	19
7.1 Identification of the Species' Critical Habitat .....	20
7.2 Information and methods used to identify critical habitat.....	21
7.3 Schedule of Studies to Identify Critical Habitat.....	27
7.4 Activities Likely to Result in the Destruction of Critical Habitat.....	27
7.5 Scope of the Action Plan.....	38
7.6 Proposed Measures to Protect Critical Habitat.....	38
8. Evaluation of Socio-economic Costs and Benefits .....	39
8.1 Policy Baseline.....	40
8.2 Socio-economic Profile and Baseline.....	40
8.3 Socio-economic Costs of Implementing this Action Plan .....	41
8.4 Benefits of Implementing this Action Plan .....	42
8.5 Distributional Impacts.....	43
9. Measuring Progress .....	44
10. References.....	45
Appendix A: Effects on the environment and other species .....	51
Appendix B: Summary of the Assessment of Research Needs.....	52
Appendix C: Geographic Location of Areas Containing Critical Habitat .....	54
Appendix D: Critical Habitat Beach Areas – 2026 Final Update .....	123
Appendix E: Beach Areas Inventoried but Not Identified as Critical Habitat - 2026 Final Update.....	143

## 1. COSEWIC\* Species Assessment Information

**Date of Assessment:** November 2013

**Common Name (population):** Piping Plover - *melodus* subspecies

**Scientific Name:** *Charadrius melodus melodus*

**COSEWIC Status:** Endangered

**Reason for Designation:** Numbers of the eastern subspecies of this small shorebird remain extremely low and the population continues to decline, despite concerted conservation efforts. Threats from predation, human disturbance, and declines in habitat extent and quality also continue.

**Canadian Occurrence:** Quebec, New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador

**COSEWIC Status History:** The species was considered a single unit and designated Threatened in April 1978. Status re-examined and designated Endangered in April 1985. In May 2001, the species was re-examined and split into two groups according to subspecies. The *melodus* subspecies was designated Endangered in May 2001 and November 2013.

\* COSEWIC (Committee on the Status of Endangered Wildlife in Canada)

## 2. Species Status Information

Piping Plover *melodus* subspecies, hereafter Piping Plover or plover, is listed as Endangered in Canada under Schedule 1 of the *Species at Risk Act* (SARA). The subspecies also occurs along the Atlantic coast of the United States, where it is listed as Threatened under the United States' Endangered Species Act. In Quebec, Piping Plover is listed as a threatened species under provincial legislation (*Loi sur les espèces menacées ou vulnérables*, RLRQ, c E-12.01). In New Brunswick, Newfoundland and Labrador, and Nova Scotia, it is listed as Endangered under each province's Endangered Species Act. In 2011, the Canadian breeding range accounts for approximately 25% of the global breeding range (Elliott et al. 2015).

**Table 1. Conservation ranks for Piping Plover (NatureServe 2017)**

	<b>G- Rank<sup>a</sup></b>	<b>N-Rank<sup>b</sup></b>	<b>S-Rank<sup>c</sup></b>	<b>COSEWIC Status</b>
<b>Piping Plover</b> ( <i>Charadrius melodus melodus</i> )	G3T3	N3B	Breeding occurrences: Quebec: S1B New Brunswick: S1B Prince Edward Island: S1B Nova Scotia: S1B Insular Newfoundland: S1B	Endangered

<sup>a</sup> G-Rank — Global Conservation Status Rank: G3 = species is vulnerable, T = status rank of subspecies (T3 = vulnerable).

<sup>b</sup> N-Rank — National Conservation Status Rank: N3B = breeding population within the nation is Vulnerable.

<sup>c</sup> S-Rank — sub-national (provincial or territorial) ranks (B = breeding): S1 = Critically Imperiled; S2 = Imperiled.

Despite active conservation programs throughout Atlantic Canada and Quebec, the number of Piping Plover pairs declined more than 30% between 2006 and 2016 (Canadian Wildlife Service (CWS), unpublished data).

### 3. Species Information

More detailed information about the species and its habitats is available in the status report (COSEWIC 2013).

#### 3.1 Species Description

Piping Plovers nest only in North America and occur in two populations in Canada, each with subspecies status: the *melodus* subspecies breeds along the Atlantic coast and the *circumcinctus* subspecies breeds inland, in the prairie provinces and Great Lakes region. This recovery document applies only to the *melodus* subspecies.

Piping Plover is a small, stocky shorebird that depends on its cryptic coloration (adults, chicks and eggs) to avoid predators. Their backs resemble the colour of dry sand with plumage varying between light grey and pale brown. Their underparts are white and, in breeding plumage, a black band runs completely or partially across the breast. They have a second (also partial or complete) band across their forehead, between the eyes. Their short bill is orange with a black tip. Adults weigh 43-63 g and are 17-18 cm long. Piping Plovers are capable of breeding at one year of age.

Plovers normally arrive on the breeding grounds from the end of March to early May. Nest initiation may occur any time after the birds arrive (but usually late May onwards) until mid-July. Nests are only occasionally initiated after this time. Young may hatch starting in late May or early June onwards, depending on when nesting was initiated. Migration back to the wintering grounds begins in early to mid-July. The bulk of the population has left Canada by early September.

Adults normally produce a clutch of four eggs; however, fewer eggs may be produced, often with re-nesting attempts. Young hatch after 26 to 28 days of incubation and are able to fly after 25 to 28 days. Chicks are precocial<sup>7</sup> and usually leave the nest within hours of hatching. Young plovers forage independently shortly after leaving the nest. One brood is normally produced per year; however, re-nesting is possible if a clutch is lost. The normal lifespan of birds once they reach adulthood is 8-11 years (Haig 1992).

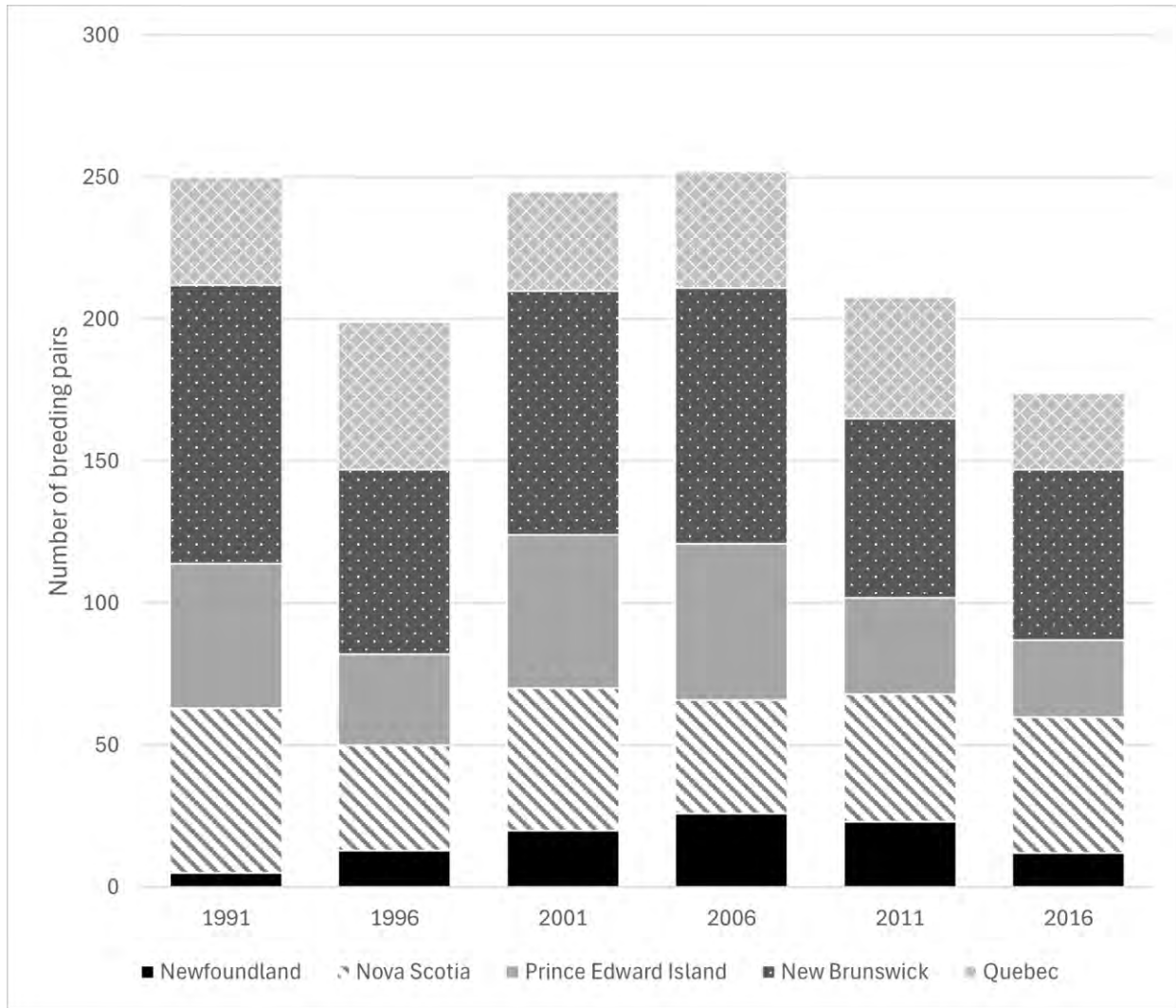
### 3.2 Species Population and Distribution

Population numbers of Piping Plovers have fluctuated since the early 1900s when uncontrolled hunting had greatly decreased numbers (Bent 1929). Populations began to recover by about 1925 (Haig and Oring 1985) due to increased protection (e.g., *Migratory Birds Convention Acts* in the United States and Canada). Numbers rose in the 1930s, but decreased again by 1945, due to increased recreational use of beaches and other factors. Breeding populations continued to decline in Atlantic Canada, Quebec and the Atlantic Coast of the United States (Cairns and McLaren 1980) until management efforts were initiated in the 1980s. Since then, numbers have increased significantly along the Atlantic Coast of the United States, but not in Atlantic Canada and Quebec.

The first complete survey for breeding Piping Plovers was conducted as part of the International Piping Plover Census in 1991. Since 1991, and most consistently since 2000, annual surveys of breeding habitat are conducted. Beaches are surveyed at the beginning of the breeding season (during a standard window count in June), and those with plovers are visited regularly throughout the breeding season. Year-end counts are the total number of pairs observed at the end of the breeding season. Between 2000 and 2016, numbers of pairs have varied between a high of 272 pairs in 2002 and a low of 174 pairs in 2016 (Figure 1). The population has remained relatively stable, albeit at a low level, since 2012.

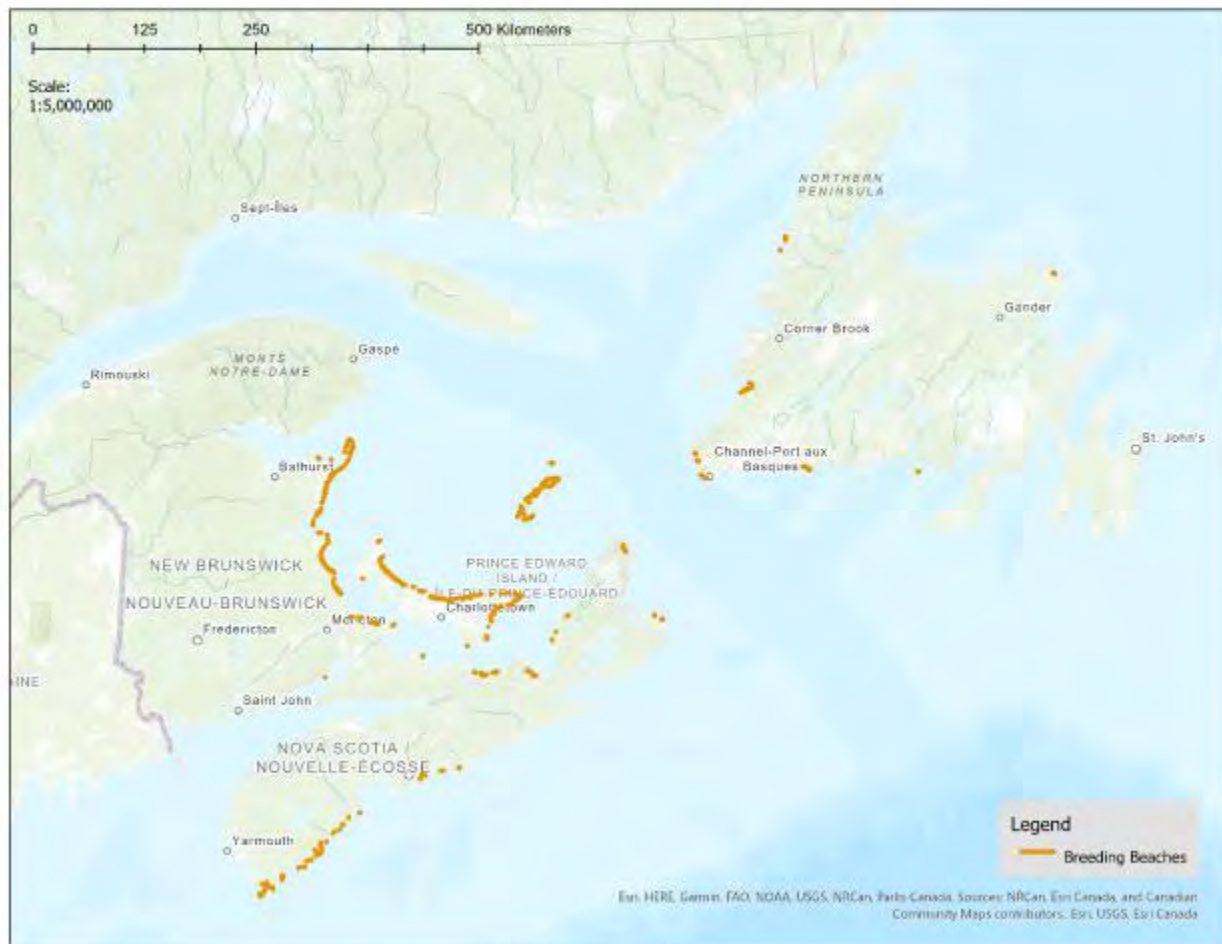
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<sup>7</sup> A young bird hatched in an advanced state and able to feed itself almost immediately



**Figure 1. Piping Plovers (year-end pairs) by province observed during International Piping Plover Census years.**

Plovers nest in coastal areas of Québec (Magdalen Islands), New Brunswick (the Gulf of St. Lawrence and Northumberland Strait coast), Prince Edward Island, Nova Scotia (southern Atlantic coast, beaches along the Northumberland Strait and Cape Breton Island) and insular Newfoundland (Figure 2).



**Figure 2. Canadian breeding distribution of Piping Plovers (1991-2016)**

Piping Plovers winter primarily on the Atlantic coast of the United States from North Carolina to Florida, along the Gulf coast of Florida and on islands of the West Indies (Gratto-Trevor et al. 2012).

### 3.3 Needs of the Species

The information in this section is based on expert knowledge of Piping Plovers in Canada and on key scientific sources, including the most recent COSEWIC Status Report (2013), a regional habitat study: Boyne et al. (2014), and the Piping Plover species account in *Birds of the World*, by Elliott-Smith and Haig (2020), which provides a complete summary of the species' biology and ecology throughout its range.

Piping Plovers depend on a mix of dynamic coastal areas to nest, raise chicks, rest, and feed. These areas vary but tend to share certain habitat features that support the subspecies' survival and recovery.

Plovers typically nest on sand, gravel, or cobble<sup>8</sup> beaches that are relatively wide, gently sloping, and sparsely vegetated (with only scattered or patchy plants). They prefer locations with natural shelter such as driftwood, shells, dried seaweed (wrack), or small clumps of beach vegetation. These habitat features help to camouflage nests and provide protection from predators and weather.

To raise chicks, plovers rely on open areas with nearby shelter so that chicks can move safely between nesting and feeding zones. Because chicks cannot fly for several weeks, they must remain close to their parents in habitat that offers both protection and access to food.

For resting, plovers use dry, open locations above the intertidal zone<sup>9</sup>. Shelter is particularly important for chicks, which depend on vegetation cover, wrack, or other natural debris to shield them from wind, sun, and predators.

To feed, adults and chicks search for small invertebrates such as insects, marine worms, and tiny crustaceans. Feeding areas include intertidal zones. Plovers also feed in upper beach and dune areas, especially where wrack or other natural debris attracts prey.

The first dune<sup>10</sup>, including vegetated areas dominated by marram grass, is important for maintaining healthy beach habitat for plovers. These dunes act as natural barriers that can protect some nesting locations from flooding and storm surges, trap and hold sand to maintain beach width, and provide windbreaks and cover for chicks. They also help sustain the beach–dune system that supports the full range of habitats plovers need.

These open coastal habitats are naturally shaped by tides, winds, and shifting sand. These disturbances maintain the sparsely vegetated, constantly changing (dynamic) conditions that Piping Plovers require. Allowing these natural processes to continue is essential for sustaining the habitat features the subspecies needs for survival and recovery.

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<sup>8</sup> Small to medium-sized rounded rocks

<sup>9</sup> Intertidal zone = Foreshore = The stretch of shoreline underwater at high tide and exposed at low tide, including wet features like mudflats, sandflats, and shallow pools.

<sup>10</sup> First dune = Foredune = The sand dune closest to the ocean, above the beach and the high tide line. It can be bare or vegetated.

## **4. Threats**

### **4.1 Threat Assessment**

The threats considered in the original recovery strategy for the species (Environment Canada 2012) are still valid and are reproduced below. Terminology has been revised to follow the threat lexicon developed by the International Union for Conservation of Nature-Conservation Measures Partnership (2006) (IUCN-CMP). Threats are ranked by level of concern, and the table below provides some insight as to which threats should be targeted for the recovery of Piping Plover.

**Table 2.** Threat assessment table

Threat <sup>a</sup>	Level of Concern <sup>b</sup>	Extent	Occurrence	Frequency	Severity <sup>c</sup>	Causal Certainty <sup>d</sup>
<b>1. Residential &amp; Commercial Development</b>						
1.1 Housing & Urban Areas	High	Widespread	Continuous	Continuous	High	High
<b>3. Energy Production &amp; Mining</b>						
3.2 Mining & Quarrying (e.g., mining sand and beach sediments)	Low	Localized	Historic	Continuous	High (local) Low (range-wide)	Low
<b>6. Human Intrusions &amp; Disturbance</b>						
6.1 Recreational Activities (e.g., motorized vehicles and other beach users)	High	Widespread	Historic, Current, Anticipated	Seasonal	High	High
<b>7. Natural System Modifications</b>						
7.3 Other Ecosystem Modifications (e.g., beach nourishment, shoreline stabilization, beach cleaning or raking)	High	Localized	Historic, Current, Anticipated	Continuous	Moderate	Medium
<b>8. Invasive &amp; Other Problematic Species, Genes &amp; Diseases</b>						
8.2 Problematic Native Species/Diseases (e.g., American Crow, Red Fox, Common Raven, gulls, Merlin, Raccoon, Coyote, Striped Skunk, Short-tailed Weasel, American Mink, dogs, cats)	High	Widespread	Historic, Current, Anticipated	Seasonal	High	High
<b>9. Pollution</b>						
9.2 Industrial & Military Effluents	Medium	Widespread	Anticipated	One-time	High (local) Low (range-wide)	High
<b>11. Climate Change &amp; Severe Weather</b>						
11.4 Storms & Flooding	Medium	Widespread	Historic, Current, Anticipated	Seasonal	Moderate	High

<sup>a</sup> Classification of Threats adopted from IUCN-CMP (Salafsky et al. 2008)

<sup>b</sup> *Level of Concern*: signifies that managing the threat is of (high, medium or low) concern for the recovery of the species, consistent with the population and distribution objectives. This criterion considers the assessment of all the information in the table).

<sup>c</sup> *Severity*: reflects the population-level effect (High: very large population-level effect, Moderate, Low, Unknown).

<sup>d</sup> *Causal certainty*: reflects the degree of evidence that is known for the threat (High: available evidence strongly links the threat to stresses on population viability; Medium: there is a correlation between the threat and population viability e.g. expert opinion; Low: the threat is assumed or plausible).

## 4.2 Description of Threats

Current and anticipated issues and activities that directly threaten the survival of Piping Plover are detailed below. Only medium to high threats are considered in this section. The threats may not be distributed equally across the range and the threat level may vary within provinces and jurisdictions.

### 1.1 Housing & Urban Areas

Coastal developments (e.g. residential or commercial developments, construction of wharves and jetties) may physically destroy or alter the function of a site and render it unsuitable for plovers.

### 6.1 Recreational Activities (e.g., motorized vehicles and other beach users)

Many human activities result in disturbance to Piping Plovers. Disturbance generally causes changes in normal breeding, foraging, resting and/or chick-raising behaviour. Human disturbance includes pedestrian traffic, unleashed pets, camping and campfires, sunbathing, collection (of driftwood, shells or wrack), horseback riding, fishing, kite flying, kite bugging, fireworks and motorized vehicle traffic (e.g., cars, trucks, off-road and all-terrain vehicles).

The degree of severity, frequency of disturbance and proximity to breeding habitat and foraging areas within any specific component of the habitat will dictate how plovers are affected. Severe disturbance (e.g., vehicular traffic, unleashed pets, horseback riding, fireworks, camping and campfires, kite bugging) affects site use, increases the likelihood of breeding failure and potentially results in adult and young mortality. Moderate and minor disturbance factors (e.g., walking, swimming, sunbathing, collecting driftwood or other natural beach components, surf fishing, flying kites) increase the likelihood of lower productivity due to increased energy expenditures to avoid the activity or a decrease in efficiency in conducting normal activities. Even though some activities such as walking on the beach may be considered low disturbance, nests are highly camouflaged, and pedestrians may inadvertently trample them. There have also been several confirmed instances of children removing chicks from breeding beaches.

Operation of off-road vehicles, all-terrain vehicles, kite buggies, or other vehicles on beaches used by plovers may result in chick mortality, destruction of the eggs or nest and, in some cases, nest abandonment (Ryan 1996, Flemming et al. 1988, Loegering and Fraser 1995, Melvin et al. 1994). Compaction of substrate caused by vehicle traffic may reduce invertebrate abundance and therefore local prey availability (Wolcott and Wolcott 1984).

A number of predators benefit from association with humans (Prugh et al. 2009, Gratto-Trevor and Abbott 2011), which can result in higher populations in areas frequented by people, and many are attracted to garbage left behind at beaches. Domestic and feral pets also prey on plover chicks and adults and destroy nests.

### **7.3 Other Ecosystem Modifications (e.g., beach nourishment, shoreline stabilization, beach cleaning or raking)**

Beach nourishment<sup>11</sup> projects may be beneficial and/or detrimental to plovers, depending on a number of factors. The reuse of clean, appropriately-sized and otherwise compatible, sediments (e.g., from a nearby dredging project) to increase the width or length of a beach or dune may be minimally disruptive to natural sediment transport processes and to plovers if project proposals are well designed (e.g., timing allows prey resources time to recover, slope of beach is maintained, sediments are not compacted, associated disturbance is minimized) (Haney et al. 2007). Poorly designed beach nourishment projects may negatively affect Piping Plover habitat and their prey (e.g., if provisioned sediment grain size is not compatible with beach sediments, disturbance is high, compaction of sediments occurs, slope is too steep and prevents natural beach processes over time, timing is incompatible for prey resources to recover) (Wooldridge et al. 2016).

Invasive vegetation, wrack removal and shoreline stabilization activities (e.g., planting dune vegetation, placing Christmas trees or snow fencing, armoring with riprap and construction of seawalls, groins, jetties) all contribute to cumulative beach habitat loss. Shoreline stabilization<sup>12</sup> blocks the natural processes by which coastal habitats respond to storms, while accelerating sea level rise further reduces beach suitability for Piping Plovers (USFWS 2012). Continuing loss and degradation of habitat is one of the key threats to Piping Plovers in their non-breeding range (USFWS 2012).

Beach wrack provides important resting, shelter, camouflage and food for plover adults and chicks. They may be negatively impacted by the removal of wrack by raking activities (Dugan et al., 2003). Beach raking may also lead to the destabilization of the beach and loss of sand (erosion). However, with proper planning and timing and without disturbing plovers, the removal of human-created debris by hand removes human food items that could be attractive to predators and also removes debris which plovers could become entangled in (e.g., monofilament line).

### **8.2 Problematic Native Species/Diseases (e.g., American Crow, Red Fox, Common Raven, gulls, Merlin, Raccoon, Coyote, Striped Skunk, Short-tailed Weasel, American Mink, dogs, cats)**

Predation has been identified as one of the most important factors limiting populations across the North American breeding range (Goossen et al. 2002). Current predation rates appear to be higher than they were in the past probably as a result of changes in human activity and land-use practices. Current estimates from Atlantic Canada and Quebec suggest that hatch success is approximately 57% and predators are confirmed or suspected in at least one-third of all nests lost (CWS, unpublished data). There are

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<sup>11</sup> Beach nourishment (also referred to as beach replenishment or “soft” armoring or “soft” stabilization), is the addition of large quantities of sand to the shore to increase the beach width or quality, and/ or to secure the shore against erosion.

<sup>12</sup> Shoreline stabilization (also known as armoring or “hard” stabilization) refers to any method of altering the natural beach system to stabilize it.

many known or suspected predators of adults, chicks and eggs, including American Crow (*Corvus brachyrhynchos*), Red Fox (*Vulpes vulpes*), Common Raven (*Corvus corax*), gulls (*Larus* spp.), Merlin (*Falco columbarius*), Raccoon (*Procyon lotor*), Coyote (*Canis latrans*), Striped Skunk (*Mephitis mephitis*), Short-tailed Weasel (*Mustela erminea*), American Mink (*Neovison vison*), dogs and cats. Human activities and land use practices have resulted in artificially high predator populations (Raithel 1984 in Melvin et al. 1991). These predators may hunt or opportunistically take adult Piping Plovers, chicks, or eggs. Increasing predation pressure can have a negative impact on populations of Piping Plover (Burger 1987, USFWS 1996).

## **9.2 Industrial & Military Effluents**

Pollutants such as oil pose a risk to foraging adults and chicks. Oil affects birds through physical contact, physiological changes and acute toxic poisoning. Oiled birds may be affected by the disruption in the natural water-repellency of feathers, affecting their thermo-regulatory capacity (Leighton 1994), or there may be reduced hatching success if oil is transferred to the eggs during incubation (McGill and Richmond 1979, Lewis and Malecki 1984). Ingestion of toxic compounds while preening also commonly occurs. Ingested toxins can lead to severe internal damage and organ failure (Peakall et al. 1983). Three cases of oiled adult Piping Plovers have been recorded in Canada (Amirault-Langlais et al. 2007).

Oil spills not only have the potential to impact the birds and their habitat but also their invertebrate prey. The greatest impact may be experienced by flightless chicks which are unable to access alternative foraging grounds.

Several oil spills have affected Piping Plovers in the United States. There is a similar risk along the coastline in Canada.

## **11.4 Storms & Flooding**

Extreme weather events (e.g., hurricanes, flooding, storms) may cause localized erosion and loss of habitat. Conversely, when unimpeded by coastal development or activities required for maintenance of infrastructures, severe weather events may create new habitat through accretion/deposition of sand and other sediments. Severe weather may also maintain the early successional stage habitat required for breeding.

Extreme high tides may flood nests above the ordinary high-water mark. This can result in considerable nest loss if high tides coincide with the peak breeding season. Long periods of intense rain following hatching can decrease chick survival rates. Hurricanes, periods of cold weather and storms may contribute to adult mortality.

## 5. Population and Distribution Objectives

### Short-term population objective 1

Achieve and maintain a minimum of 250 year-end pairs of Piping Plover. This reflects maintenance of the population at levels observed in 1991 (the first year of complete survey coverage – see Figure 1).

### Short-term population objective 2

Achieve and maintain an annual productivity greater than 1.65 chicks fledged per territorial pair. This is the minimum productivity rate calculated to maintain the population at its current level (Calvert 2004).

### Long-term population and distribution objectives

Increase the population, and maintain it for the long-term<sup>13</sup>, to a minimum of 310 year-end pairs; proportionally represented in each province (as per Table 3) to meet historical maximum estimates.

**Table 3. Long-term population and distribution objectives for Piping Plover.**

Province	Population objective (pairs)
Québec	55
New Brunswick	105
Prince Edward Island	60
Nova Scotia	60
Newfoundland and Labrador	30
<b>Total</b>	<b>310</b>

Short-term and long-term objectives are specified because there is a high uncertainty about whether the long-term objective can be achieved. Increases observed since listing in the United States (i.e., nearly tripling of population size from 1986 to 2008 (USFWS 2009)) suggest that reaching long-term objectives in Atlantic Canada and Quebec should be feasible. Long-term population objectives for each province (identified in Table 3) are based on the maximum number of pairs documented in each province between 1991 and 2016 and, where known, closely approximate historical estimates (e.g., Cairns and McLaren 1980).

<sup>13</sup> Over at least three consecutive international censuses, which occur every five years.

## 6. Broad Strategies and General Approaches to Meet Objectives

### 6.1 Actions Already Completed or Currently Underway

Recovery programs for Piping Plover were initiated in 1985, with many conservation techniques having been developed and implemented since this time to address human-induced and natural threats. A National Recovery Plan for Piping Plover (Goossen et. al. 2002) outlining the approach recommended to recover the population was published in 2002. That recovery plan expired in 2004. Approaches to conservation that have been implemented to help achieve the recovery objectives include targeted outreach (beach visitors), public education, volunteer and landowner involvement in protecting breeding plovers, protection of key breeding habitats through acquisition and minimizing human disturbance (e.g., symbolic fencing<sup>14</sup>, signage, beach closures in National Parks of Canada), reduction of predation (e.g., beach clean-up programs, litter management and localized predator management), increased enforcement in coastal areas, research on factors affecting the species and its habitat (including in non-breeding areas), the discouragement of beach developments and population monitoring.

Recent federal and provincial cooperation for endangered species conservation via legislation and other measures has enhanced efforts to protect the subspecies and its habitat. In Quebec, Piping Plover is listed as a threatened species under provincial legislation (*Loi sur les espèces menacées ou vulnérables*, RLRQ, c E-12.01). In New Brunswick, Newfoundland and Labrador, and Nova Scotia, it is listed as Endangered under each province's Endangered Species Act.

Substantive involvement on the part of many agencies occurs every year to protect the species. The Eastern Canadian Piping Plover Recovery Team and Working Group meet annually to discuss progress made during the previous year and to plan future efforts. The team includes representatives from CWS (Atlantic and Québec regions) of Environment and Climate Change Canada (ECCC), Parks Canada (PC), the five provincial wildlife agencies and non-governmental organizations. Numerous non-governmental organizations have had much success in protecting sensitive coastal features and Piping Plover: Attention Fragîles of the Îles-de-la-Madeleine, Nature NB, Island Nature Trust, Bird Studies Canada, Eskasoni Fish and Wildlife Commission Inc., Qalipu Mi'kmaq First Nation Band, Miawpukek First Nation (MFN), Halifax Field Naturalists, the Nova Scotia Bird Society, the Canadian Parks and Wilderness Society, Intervale Associates, Codroy Valley Area Development Association, Nova Scotia Nature Trust and Nature Conservancy Canada.

Environmental assessment reviews of projects that may pose a risk to plovers are conducted frequently. Identification of measures to mitigate potential negative impacts

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<sup>14</sup> This measure refers to signage, with or without string or rope, used only to inform people that access is forbidden and to deter behaviour.

of projects has been an important activity to ensure the maintenance of habitat. Measures are recommended that ensure the risk to breeding plovers is eliminated or reduced, while also addressing public safety issues.

## 6.2 Recovery Planning Table and Implementation Schedule

The recovery measures outlined below describe activities that should be undertaken to support the species' recovery. They are intended to serve as guidance to jurisdictions, organizations and other partners responsible for the conservation of the Piping Plover, *melodus* subspecies. The recovery measures are organized under seven broad strategies.

**Table 4. Implementation Schedule**

Approach	#	Recovery Measure	Priority <sup>a</sup>	Threats or concerns addressed	Timeline
<b>Broad Strategy: Reduce human disturbance</b>					
Outreach and Stewardship	1	Ensure the continuation of Piping Plover conservation projects throughout the breeding and nonbreeding range of Piping Plover (e.g., Guardian programs).	High	1.1 Housing & Urban Areas 6.1 Recreational Activities (e.g., motorized vehicles and other beach users)	Ongoing
	2	Encourage volunteer and community engagement in Piping Plover conservation projects (e.g., training, volunteer toolkit) throughout the breeding and nonbreeding range of Piping Plover.	High		Ongoing
	3	Educate and engage beach visitors, landowners, local business owners, tourism industry experts, youth, coastal industries and all-terrain vehicle groups in conservation activities that benefit Piping Plovers.	High		Ongoing
	4	Regularly evaluate outreach and stewardship programs to assess their effectiveness.	Medium		Ongoing
Compliance promotion	5	Implement appropriate techniques for reducing human disturbance to breeding Piping Plovers (e.g., signage and symbolic fencing).	High	1.1 Housing & Urban Areas 6.1 Recreational Activities (e.g., motorized vehicles and other beach users)	Ongoing
	6	Encourage compliance with existing laws and regulations.	High		Ongoing
	7	Work with enforcement agencies to address threats and priorities.	High		Ongoing
<b>Broad Strategy: Ensure enough suitable habitat to meet long-term population objectives</b>					
Address plovers in comprehensive coastal planning and management strategies	8	Develop and implement Piping Plover "best management practices" and wherever possible, integrate them into coastal planning and management strategies throughout the breeding and nonbreeding range of Piping Plover.	High	1.1 Housing & Urban Areas 7.3 Other Ecosystem Modifications (e.g., beach nourishment, shoreline stabilization, beach cleaning or raking)	Ongoing
	9	Engage in existing coastal planning and management initiatives at provincial, municipal and site scales, identify regions where no such initiatives exist and encourage their development.	Medium		Ongoing

Approach	#	Recovery Measure	Priority <sup>a</sup>	Threats or concerns addressed	Timeline
Protect habitat	10	Determine appropriate protection measures for habitat throughout Piping Plover's breeding and nonbreeding range and work towards implementation.	High		Ongoing
Outreach and Stewardship	11	Inform coastal landowners, land managers and developers about the role and value of natural coastal processes and the negative impacts of dwellings, boardwalks and other structures very near or in dunes, as well as erosion control structures.	High		Ongoing
	12	Mitigate negative impacts of development by providing project alternatives.	High		Ongoing
	13	Discourage beach cleaning or raking efforts that remove natural elements such as macroalgae, eel grass, driftwood, cobble and other natural debris from plover habitat.	High		Ongoing
Consider plovers in environmental assessments	14	Provide input to project proposals through federal and provincial governments, as well as local planning authorities to consider project implications/impacts on the species and its habitat.	High	1.1 Housing & Urban Areas 7.3 Other Ecosystem Modifications (e.g., beach nourishment, shoreline stabilization, beach cleaning or raking) 9.2 Industrial & Military Effluents	Ongoing
Enhance habitat	15	Explore options for habitat management, where warranted, to optimize breeding potential in areas where suitable protected habitat is limited.	Low	1.1 Housing & Urban Areas 7.3 Other Ecosystem Modifications (e.g., beach nourishment, shoreline stabilization, beach cleaning or raking) 11.4 Storms & Flooding	As necessary
<b>Broad Strategy: Reduce predation</b>					
Appropriate use of recovery techniques	16	Evaluate population-level impacts of management techniques.	High	8.2 Problematic Native Species/Diseases (predators)	Ongoing
Waste management	17	Work in cooperation with federal, provincial and municipal park and land managers to ensure effective waste management programs at plover beaches.	Medium		Ongoing
Predator management	18	Summarize the impact of predation on Piping Plover and review predator management techniques.	Medium	8.2 Problematic Native Species/Diseases (predators)	As necessary

Approach	#	Recovery Measure	Priority <sup>a</sup>	Threats or concerns addressed	Timeline
<b>Broad Strategy: Address key knowledge gaps to recovery</b>					
Research	19	Facilitate partnerships and opportunities to undertake research on key knowledge gaps that will lead to recovery. See Appendix B for details.	High	Knowledge gaps	Ongoing
	20	Implement a research program to determine movements and areas used by nonbreeding birds, and to better understand factors affecting survival throughout their range.	High		Ongoing thru to 2024
Form and maintain partnerships	21	Partner with governments, non-government organizations and academics to understand and address nonbreeding range issues.	High		Ongoing
Evaluate environmental assessments	22	Work with environmental assessment review practitioners to complete follow-up evaluations regarding the effectiveness of proposed mitigation.	High		Ongoing
<b>Broad Strategy: Monitor the population</b>					
Count adults	23	Conduct annual counts of breeding birds.	High	Knowledge gaps	Annually
	24	Census the population throughout the breeding and nonbreeding range every five years as part of the International Piping Plover Census.	High		Every 5 years
	25	Provide training and mentoring (where necessary) to standardize monitoring efforts and survey known Piping Plover beaches.	High		When necessary
Measure productivity	26	Monitor and calculate productivity for every pair in southern Nova Scotia and a minimum of 70 pairs (ideally 100 pairs) in the Gulf of St. Lawrence region distributed representatively throughout the area.	High		Annually
Evaluate habitat	27	Monitor availability and suitability of habitat every five years as part of the International Piping Plover Census.	High		Every 5 years
	28	Identify and document threats to Piping Plovers and their habitat on the breeding and nonbreeding grounds.	High		Ongoing
<b>Broad Strategy: Minimize impacts of adverse weather conditions</b>					
Maintain habitat	29	Ensure sufficient high-quality habitat is maintained to minimize the overall impact of negative weather events.	Medium	11.4 Storms & Flooding	Ongoing
Mitigate nest flooding	30	On a case-by-case basis and when feasible, reduce impacts of flooding by using appropriate management tools (e.g., sandbagging and nest translocation).	Low	11.4 Storms & Flooding	When necessary

Approach	#	Recovery Measure	Priority <sup>a</sup>	Threats or concerns addressed	Timeline
<b>Broad Strategy: Minimize impacts of poorly understood mortality factors</b>					
Oil spill contingency planning	31	Liaise with the Regional Environmental Emergencies Team (e.g., provide data, input and report oiled birds).	Low	9.2 Industrial & Military Effluents	Ongoing
Remain vigilant for population-level threats	32	Consider threats related to toxic chemicals and react where warranted by collecting and analyzing specimens (eggs, deceased or incapacitated adults and/or chicks)	Low	9.2 Industrial & Military Effluents	Ongoing

<sup>a</sup> "Priority" reflects the degree to which the broad strategy contributes directly to the recovery of the species or is an essential precursor to an approach that contributes to the recovery of the species.

## Monitoring

Monitoring measures for Piping Plover were reviewed by the Science & Technology Branch of Environment Canada in 2013 (Gratto-Trevor et al. 2013). Recommendations for monitoring the recovery of the species and its long-term viability were provided. All monitoring protocols are currently followed by Piping Plover stewardship organizations, ECCC, PC and provincial counterparts. Specifically, the review recommended that:

- a survey of all potential breeding habitat continues to be conducted as part of the international Piping Plover Census every five years;
- productivity be monitored annually for:
  - 70 - 100+ pairs in the Gulf region (distributed in a representative way across Quebec, New Brunswick, Prince Edward Island, northern Nova Scotia and Newfoundland and Labrador); and
  - All pairs (30+) in the southern Nova Scotia region; and
- a mark-recapture study be implemented to determine movements and areas used by nonbreeding birds, and to better understand factors affecting adult and juvenile survival in both breeding and nonbreeding areas.

## 7. Critical Habitat

Under SARA, critical habitat is defined (subsection 2(1)) as “the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species’ critical habitat in the recovery strategy or in an action plan for the species”. SARA paragraph 41(1)(c) requires that recovery strategies identify the species’ critical habitat, to the extent possible, and provide examples of activities that are likely to result in its destruction. In identifying critical habitat, key considerations include the amount and location of habitat required to meet a species’ population and distribution objectives.

A description of critical habitat requires both:

- A specific area that can be located on a map (“where” the critical habitat is), and
- The habitat features (biophysical attributes) within that area that are necessary to support the species’ survival or recovery (“what” qualifies the area as critical for the species).

In this document, these features are referred to as “necessary habitat features<sup>15</sup>” (rather than “biophysical attributes”) to improve clarity and consistency in how critical habitat is described (see Table 5).

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<sup>15</sup> Necessary habitat features include the specific conditions a species needs to survive and reproduce, such as safe places for breeding, shelter, and food sources.

Section 7.1 identifies the critical habitat, and section 7.2.2 describes the methodology and criteria ECCC used to make that determination. Examples of activities likely to destroy critical habitat are listed in section 7.4.

## 7.1 Identification of the Species' Critical Habitat

### ***Critical habitat identification***

Based on the methodology and criteria described below in section 7.2.2, the following areas are identified as critical habitat for the Piping Plover (*melodus* subspecies):

- Within each 1 x 1 km grid square shown in Appendix C, the intertidal zones<sup>16</sup>, beaches<sup>17</sup>, and first dunes<sup>18</sup> associated with the beach areas listed in Appendix D are critical habitat.

This critical habitat spans two regions - Atlantic Canada and the Magdalen Islands - covering five provinces: New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, and Quebec. The identified critical habitat is considered sufficient to meet the population and distribution objectives; accordingly, a schedule of studies is not required.

### **Determining whether an area is critical habitat**

A member of the public, landowner, developer, or land manager can determine whether a given location is critical habitat by applying the following test:

- If an area is an intertidal zone, beach, or first dune associated with a beach area listed in Appendix D and falls within a 1 x 1 km grid square shown in Appendix C, it is critical habitat.

To apply this test, a person needs only to determine (i) whether the area is a beach, intertidal zone, or first dune as defined in this document; and (ii) whether it falls within a grid square shown in Appendix C associated with a beach area listed in Appendix D. No assessment of the necessary habitat features in Table 5 is required.

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<sup>16</sup> Intertidal Zone = Foreshore = The area of the shore between high- and low-water marks. In the case of barriers, this applies to both the landward and seaward shores.

<sup>17</sup> Beach = Backshore = The portion of the shore between the ordinary high-water mark and the base of the first dune (or the line of permanent vegetation where dunes are absent). This includes unvegetated overwash fans, dune blowouts, and other sparsely vegetated sandy surfaces occurring within these bounds. This portion of the shore is dry under normal conditions and affected by waves primarily during extreme storms. In the case of barrier systems, this applies to both the landward and seaward shores.

<sup>18</sup> First dune = Fore-dune = The sand dune closest to the ocean, above the beach and the high tide line. It can be bare or vegetated.

## Status of identified critical habitat

Continued use by plovers is not required for an area to remain critical habitat. Any change to the areas identified as critical habitat will be done formally by ECCC and published on the Species at Risk Public Registry.

The coastal areas that make up this critical habitat – intertidal zones, beaches, and first dunes – are described below in section 7.2.1.

## 7.2 Information and methods used to identify critical habitat

### 7.2.1 Coastal areas and necessary habitat features

Piping Plovers rely on a mix of connected coastal areas for nesting, raising chicks, resting, and feeding, which naturally change over time due to storms, tides, and shifting sands. For this strategy, they are grouped into three general areas:

1. **Intertidal zone**<sup>19</sup>

Wet zone between the high and low tide lines, used primarily for feeding.

2. **Beach**<sup>20</sup>

Dry, elevated shoreline above the ordinary high-water mark, typically used for nesting, raising chicks, and resting.

3. **First dune**<sup>21</sup>

Low dune or sandy ridge located behind the beach, sometimes used for shelter and nesting. The entire first dune, including vegetated areas dominated by marram grass, supports essential life processes of Piping Plovers. These dunes act as natural barriers that protect nesting beaches from flooding and storm surges, trap and hold sand to maintain beach width, and provide windbreaks and cover essential for chick movement and survival. These areas also help sustain the broader beach–dune system that supports the full range of habitats plovers need.

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<sup>19</sup> Intertidal Zone = Foreshore = The area of the shore between high- and low-water marks. In the case of barriers, this applies to both the landward and seaward shores.

<sup>20</sup> Beach = Backshore = The portion of the shore between the ordinary high-water mark and the base of the first dune (or the line of permanent vegetation where dunes are absent). This includes unvegetated overwash fans, dune blowouts, and other sparsely vegetated sandy surfaces occurring within these bounds. This portion of the shore is dry under normal conditions and affected by waves primarily during extreme storms. In the case of barrier systems, this applies to both the landward and seaward shores.

<sup>21</sup> First dune = Foredune = The sand dune closest to the ocean, above the beach and the high tide line. It can be bare or vegetated.

**Table 5<sup>22</sup>. The areas and necessary habitat features that together support Piping Plover survival and recovery.**

Life stage	Life process/function	Area <sup>a</sup>	Necessary habitat features <sup>b</sup>
Adults, eggs, young	<ul style="list-style-type: none"> <li>• <b>Nesting:</b> finding a mate, nesting, laying eggs, incubation, hatching</li> <li>• <b>Raising chicks:</b> guiding, protecting, and helping chicks survive until they can fly</li> <li>• <b>Resting:</b> sleeping or sheltering</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Beach<sup>c</sup></b> (dry upper beach above ordinary high-water mark)</li> </ul>	<ul style="list-style-type: none"> <li>• Dry, elevated ground above the tide, suitable for nests and chick movement</li> <li>• Gently sloping with good sightlines to spot predators</li> <li>• Open sand, gravel, or cobble with sparse vegetation</li> <li>• Natural materials for shelter and cover (e.g., wrack, driftwood, shells)</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>First dune<sup>d</sup></b> (low dune or sandy ridge landward of the beach, including blowouts or washovers<sup>e</sup>)</li> </ul>	<ul style="list-style-type: none"> <li>• Sand, gravel, or cobble</li> <li>• Vegetation: dominated by coastal dune species (e.g., marram grass); coastal vegetation may range from sparse to dense. Provides shelter, cover, and protection from flooding and predators and supports the integrity and function of adjacent beach</li> </ul>
Adults, young	<ul style="list-style-type: none"> <li>• <b>Feeding</b> searching for food and eating</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Intertidal zone<sup>f</sup></b> (between high and low tide lines: mudflats, sandflats, shallow pools)</li> <li>• <b>Beach</b></li> <li>• <b>First dune</b></li> </ul>	<ul style="list-style-type: none"> <li>• Moist, sandy, or muddy areas supporting invertebrate prey (worms, crustaceans, insects), and/or</li> <li>• Presence of wrack, shallow pools, and natural debris that attract prey. Located close to nesting locations so that adults and chicks can easily reach them.</li> </ul>

<sup>a</sup> A specific area that can be located on a map (“where” critical habitat is)

<sup>b</sup> The physical or biological features within that area that the species needs to survive or recover (“what” makes the area critical for the species) [Referred to in ECCC guidance as “biophysical attributes”]

<sup>c</sup> Beach = Backshore = The portion of the shore between the ordinary high-water mark and the base of the first dune (or the line of permanent vegetation where dunes are absent). This includes unvegetated overwash fans, dune blowouts, and other sparsely vegetated sandy surfaces occurring within these bounds. This portion of the shore is dry under normal conditions and affected by waves primarily during extreme storms. In the case of barrier systems, this applies to both the landward and seaward shores.

<sup>22</sup> The necessary habitat features in this table form part of the description of critical habitat for Piping Plover (*melodus* subspecies) under SARA. Members of the public do not need to assess these features to determine whether an area is critical habitat – that determination has been made by ECCC and is expressed through the beach areas listed in Appendix D and shown in Appendix C. However, these features must be understood by anyone undertaking activities within critical habitat, as activities that damage or destroy them may constitute destruction of critical habitat under SARA.

<sup>d</sup> First dune = Foredune = The sand dune closest to the ocean, above the beach and the high tide line. It can be bare or vegetated.

<sup>e</sup> A blowout is a low, sandy depression in a dune formed by wind erosion. A washover is an area where waves and storm surges push sand and water over the dune, creating a flat, open section of sand. Both features provide sparsely vegetated openings that Piping Plovers may use for nesting or rearing chicks.

<sup>f</sup> Intertidal zone = Foreshore = The area of the shore between high- and low-water marks. In the case of barriers, this applies to both the landward and seaward shores.

## 7.2.2 How ECCC determined which areas qualify as critical habitat

Critical habitat for the Piping Plover was identified in this 2026 update based on expert observations and surveys from 1991 to 2016<sup>23</sup>.

To qualify as critical habitat, an area had to meet two criteria, both assessed by ECCC experts during the identification process:

1. The area was used by one or more pairs of nesting or territorial Piping Plovers during at least one year in the 1991–2016 period; and
2. The area contained the necessary habitat features required to support one or more essential life processes - nesting, raising chicks, resting, and/or feeding - as described in Table 5.

Only areas that met both conditions are identified as critical habitat.

### Necessary habitat features of critical habitat

Piping Plover rely on the specific areas with necessary habitat features that support nesting, raising chicks, resting and/or feeding. These necessary habitat features, set out in Table 5, are essential for the subspecies' survival and recovery and form the basis for identifying and protecting critical habitat under SARA. Clearly identifying these features helps determine when an activity may destroy critical habitat, supports enforcement of prohibitions under SARA section 58 where they apply, and informs permitting decisions under section 73 in federally protected areas, in areas where a critical habitat protection order is in place, or where a protection statement documents the protection in place. This information may also support reporting under SARA section 63.

Field studies confirm these needs are consistent across the subspecies' range. Boyne et al. (2014), for example, found that plovers consistently selected wide, flat beach sections with sparse vegetation, mixed substrates, wrack, and nearby intertidal feeding areas – all of which align with the necessary habitat features in Table 5.

While members of the public are not required to assess necessary habitat features to determine whether an area is critical habitat, anyone undertaking activities within critical habitat is responsible for ensuring those activities do not damage or destroy the

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<sup>23</sup> 1991 is the first year with consistent, spatially precise, region-wide survey effort for Piping Plovers. Earlier records exist but are incomplete or not comparable. The 1991-2016 dataset therefore provides the most reliable basis for identifying critical habitat consistent with SARA.

necessary habitat features on which the identification is based. Table 6 provides examples of activities likely to result in the destruction of critical habitat.

### **Grid squares as a mapping tool**

To display the general location of critical habitat, a standardized Universal Transverse Mercator (UTM<sup>24</sup>) grid system dividing the coast into 1 x 1 km squares was used. This approach was selected because the squares are large enough to account for natural coastal dynamics - storms, tides, and shifting sands - over several years, even as habitats shift over time. It provides a consistent and clear representation of critical habitat that remains relevant without requiring frequent remapping.

The grid squares are a mapping tool indicating the general location of critical habitat. They are not themselves critical habitat. Fixed, delineated area boundaries were considered but not adopted, as they would not adequately reflect the natural and ongoing movement of coastal habitats needed by plovers. If significant changes occur, this recovery strategy may be amended at any time.

Not all parts of a grid square are critical habitat. Areas such as open ocean, dense forest, parking lots, and other developed features do not support the subspecies' needs. Within each 1 x 1 km grid square, the critical habitat is the intertidal zone, beach, and first dune associated with beach areas listed in Appendix D – all of which ECCC has confirmed were used by Piping Plovers and contain the necessary habitat features described in Table 5 – excluding clearly unsuitable areas within the grid square such as open water, dense forest, or built structures.

This method follows the "contains critical habitat" approach outlined in ECCC's Critical Habitat Toolbox (ECCC 2016), where critical habitat is defined within a broader mapped unit that has both confirmed use by the subspecies and the necessary habitat features.

### **Regional application of the identification criteria**

While the same principles guided critical habitat identification in both regions, the methods used to apply them differ based on the data available.

#### **Magdalen Islands (Quebec)**

In the Magdalen Islands, precise nest location data were available for the 1991–2016 period. Experts identified coastal areas used by at least one nesting pair during any year in that period and confirmed to contain sufficient necessary habitat features to support one or more essential life processes. To display the general location of critical habitat, 1 x 1 km grid squares were applied as a mapping tool over all nest records, with a 500 m buffer applied along the shoreline - extending 500 m on either side of each nest - to capture adjacent beach habitat typically needed during the breeding season. This buffer was used internally by ECCC experts to determine which beach areas to include, and the public is not required to know nest locations.

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<sup>24</sup> Universal Transverse Mercator (UTM) is a global mapping system that uses a grid of squares to pinpoint locations on Earth.

The full width of the beach area was included within the buffer, from the low tide line, through the intertidal zone and beach, to the landward edge of the first dune or a natural or human-made barrier (e.g., dense vegetation, wetland, forest, road, or other developed area).

This buffer distance is supported by scientific studies and field observations:

- in Quebec, Piping Plovers have been observed using between 67 and 762 m of shoreline for feeding and raising chicks (Shaffer & Laporte 1989 & 1992), and
- A comparable buffer is used in Ontario for the *circumcinctus* sub-population (Environment Canada 2013).

### **Atlantic Canada**

In Atlantic Canada, precise nest location data were not consistently available from 1991-2016. Instead, critical habitat was identified using expert knowledge from biologists and conservation partners (Eastern Canadian Piping Plover Recovery Team and associated working groups) who conduct regular monitoring during the breeding season. This expert knowledge was applied in a precautionary manner. Experts identified coastal areas that had been used by at least one nesting or territorial pair during any year in the 1991-2016 period and that contained sufficient necessary habitat features to support one or more essential life processes, depending on the habitat present.

To display the general location of critical habitat, 1 x 1 km grid squares were applied as a mapping tool over the areas identified by experts. Within these grid squares, the areas with sufficient necessary habitat features, as determined by experts, are identified as critical habitat (see Table 5 and Appendices C & D). The grid squares cover the entire width of each beach system - from low tide line, through the intertidal zone and beach, to the landward edge of the first dune or natural or human-made barrier (e.g., dense inland vegetation, wetland, forest, road, or other developed area). Depending on the coastal setting:

- Narrow islands or barrier beaches: within the grid squares, critical habitat consists of all areas of coastal habitats used by plovers, extending from the low tide line, through the intertidal zone, beach and first dune (when present). Because these islands and barrier beaches are often made up entirely of beach and dune, their entire width and length may support one or more essential life processes such as nesting, raising chicks, resting, or feeding.
- Mainland beaches and larger islands that include other habitat types (e.g., forest, wetland, developed areas): within the grid squares, critical habitat consists only of the areas of coastal habitats used by plovers, extending from the low tide line, through the intertidal zone and beach, to the landward edge of the first dune (where present), or a natural or human-made barrier.

Recent habitat selection studies (Zeigler 2019, Stantial and Cohen 2020, Robinson et al. 2021, Stantial et al. 2021, U.S. Geological Survey. 2021, Zeigler et al. 2021) show that Piping Plovers use beaches selectively, favoring specific microhabitats such as

sparsely vegetated locations with mixed sand and shell, gentle slopes, and access to moist feeding zones. Despite this selective use, a precautionary method has been adopted for identifying critical habitat in Atlantic Canada. Where experts confirmed plover use of beach areas containing necessary habitat features in Table 5, the full extent of the coastal areas – beach, and associated first dune and intertidal zones - are contained in the mapped 1 x 1 km grid squares shown in Appendix C. This provides flexibility for natural shifts in coastal areas over time and accounts for the current lack of precise nest location in Atlantic Canada.

The areas documented in Appendix E are not critical habitat. Their presence within a grid square is a function of the grid-based mapping approach and should not be interpreted as an indication that they are critical habitat. These areas are spatially distinct from the specific beach areas identified as critical habitat within the same grid square.

ECCC experts, using the best available information, have already assessed all coastal areas within each grid square and determined that these particular areas did not meet both critical habitat identification criteria. Within certain 1 x 1 km grid squares, there may therefore be intertidal zones, beaches, or first dunes – or portions of these – that do not constitute critical habitat (See Appendix E).

### **7.2.3 Nests in non-critical habitat**

Although Piping Plovers usually nest on natural beaches, they have occasionally been observed nesting in human-altered or disturbed habitats such as parking lots, roadsides, or areas with deposited dredge material. These areas are not identified as critical habitat in this 2026 update because, although occasionally used, they generally lack the necessary habitat features needed for successful nesting, chick survival, resting, and/or feeding - such as access to nearby feeding areas or protection from flooding and disturbance.

However, even though these areas are not identified as critical habitat, general prohibitions under SARA (subsections 32(1) and 32(2)) still apply to the birds and their eggs. It is illegal to harm, disturb, or destroy Piping Plovers or their eggs, regardless of the nesting location. Piping Plovers are also protected as migratory birds under the *Migratory Birds Convention Act, 1994* (MBCA) and the *Migratory Birds Regulations, 2022*.

### **7.2.4 Changes to critical habitat since 2012**

This 2026 update was developed to address identified needs for greater clarity and transparency in the description and mapping of critical habitat. It does not change the boundaries of critical habitat identified in the 2022 amended Recovery Strategy and Action Plan. Instead, it refines the way critical habitat is described, uses clearer language to improve public understanding and clarity, and to support tracking of changes over time.

In 2022, the amended Recovery Strategy and Action Plan updated the list of beach areas based on Piping Plover Survey Data (1991-2016) and expert habitat assessments. In that version, the numbers of added and removed beaches were misstated. This 2026 update corrects the record as follows:

- 25 beach areas were added where necessary habitat features were confirmed, and nesting or territorial pairs were documented (the 2022 version stated 24).
- Eight beach areas were removed, either because they had not been used by a nesting or territorial pair (1991-2016), or because they were no longer suitable due to significant habitat changes (the 2022 version stated four).

Of the eight removed, three beach areas were no longer suitable for breeding Piping Plovers, and five had no records of nesting or territorial pairs during the data window (see Appendix E).

Several beaches were merged due to natural coastal processes - for example, in Nova Scotia, James Beach merged with Bowen Island and is now referred to as James Beach & Bowen Island. In Total, 44 beaches listed in Appendix C of the 2012 Recovery Strategy were merged into 17 beach areas in the 2022 amended Recovery Strategy and Action Plan and documented in this 2026 update. A further 169 beach areas remain unchanged from the 2012 Recovery Strategy (see Appendix D).

These changes remain in effect and are not altered by this update. No beach areas were added or removed in this 2026 update.

During the preparation of updated maps for this document, which now include beach names for easier reference, a small number of 1 x 1 km grid squares were found to be missing from the 2022 set of critical habitat maps. These grids squares cover areas where critical habitat had already been identified through expert review but were inadvertently omitted from the maps. To correct this, 23 grid squares have been added to the updated maps. These additional grids improve the completeness of the spatial representation but do not introduce new or separate beach areas. In all cases, the added grids squares extend the mapped coverage around intertidal zone, beach, and first dune areas already identified as critical habitat. This is a mapping correction only.

### **7.3 Schedule of Studies to Identify Critical Habitat**

The information currently available is sufficient to fully identify critical habitat under SARA; therefore, a schedule of studies is not required.

### **7.4 Activities Likely to Result in the Destruction of Critical Habitat**

SARA section 58 requires that the competent minister take action to prohibit the destruction of any part of the critical habitat of a listed endangered or threatened migratory bird that occurs on federal lands and has been identified in a recovery strategy or action plan, or state how that critical habitat is already protected. Critical

habitat includes both the specific geographic area, and the habitat features necessary for survival or recovery. For areas not on federal lands, the identification of critical habitat in the recovery strategy does not trigger federal prohibitions. Instead, it informs and supports conservation, stewardship, and provincial regulatory actions, consistent with the Accord's principle that provinces take the lead in protecting habitat on non-federal lands.

Activities are considered likely to result in destruction of critical habitat if they damage or degrade any of the necessary habitat features that are required for a species' survival or recovery within the area identified as critical habitat. This may include activities outside of the areas identified as critical habitat that have persistent or cumulative effects on these features (e.g., disruption of sediment supply from upstream or up-drift areas that maintain beach and dune dynamics). Destruction may result from a single activity, multiple activities at once, or the cumulative effects of activities over time. It may be permanent or temporary, and may occur at any time of the year, depending on the activity and the subspecies needs. Temporary alterations that are naturally and fully reversible before plovers require the habitat (e.g., incidental compaction restored by wind or tides) are not considered destruction, provided they are fully reversible before the habitat is required.

To prevent the destruction of critical habitat, the effects on habitat features described in Table 6 must be avoided. Table 6 provides examples of activities that may cause these destructive effects; however, any activity that results in the effects listed in Table 6 and negatively impacts necessary habitat features in Table 5 may be considered likely to result in destruction and will be assessed under SARA.

Ultimately, whether an activity results in destruction will depend on its location, timing, intensity, and duration, and on how these factors affect the necessary habitat features, as described in Table 6.

Even small changes to plover's critical habitat can have a big impact, particularly when they alter the habitat features described in Table 6. Once these features are damaged or lost, plovers may not return to nest. These impacts are not limited to large projects – everyday users may also affect Piping Plover critical habitat. As a result, anyone who visits, manages, or works on or near Piping Plover critical habitat may have legal responsibilities under SARA, MBCA, and/or provincial legislation. For activities on federal lands, if there is uncertainty as to whether an activity may contravene SARA, please contact Environment and Climate Change Canada before proceeding. For activities on provincial or private lands, contact the relevant provincial authority.

**Table 6: Examples of activities likely to result in the destruction of critical habitat**

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
<b>Area(s): Beach &amp; Dune</b>			
Altering the natural shape and/or slope of a beach and/or dune	<ul style="list-style-type: none"> <li>- Coastal development (e.g., construction of homes, cottages, roads, boardwalks, trails)</li> <li>- Sand mining (e.g., removal of sand, gravel, cobble)</li> <li>- Use of motorized vehicles (e.g., ATVs, off-road vehicles, dirt bikes) and non-motorized vehicles (e.g., kite buggies)</li> <li>- Beach nourishment or “soft” stabilization (e.g., placing or grading materials)</li> <li>- Shoreline stabilization/hardening (e.g., seawalls, armouring)</li> <li>- Beach cleaning or raking (e.g., mechanical raking, sifting, screening)</li> </ul>	<p><b>Threshold:</b> Destruction occurs within critical habitat when activities such as grading, excavation, filling, or vehicle traffic alters the beach/dune profile in a way that prevents its natural function for nesting or shelter and persists beyond natural recovery cycles (tidal or storm events).</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Heavy equipment (bulldozers, excavators), light trucks/tractors: Even one pass resulting in grading, levelling, or cut/fill can meet the destructive threshold by reshaping the dune/beach profile.</li> <li>• Repeated ATV or off-road vehicle use on beaches: Cumulative passes in the same area can create ruts or compaction that persist beyond natural recovery cycles, altering the beach profile.</li> <li>• ATVs, off-road vehicles, dirt bikes: Any use on dunes may be destructive due to extreme fragility of dune slope and vegetation.</li> <li>• Permanent alteration through construction (e.g. houses, boardwalks, seawalls, channel stabilization, parking lots).</li> </ul> <p><b>Examples – Not Destructive:</b></p> <ul style="list-style-type: none"> <li>• Shallow footprints, small holes, or minor ruts from pedestrian use that are naturally erased by tide or wind, provided they do not persist, deepen into trails, or expand into deep holes (see: Removing natural substrate row re: holes).</li> </ul>	Eliminates or degrades nesting, resting, and foraging habitat by altering dynamic substrates. Increases flooding risk, reduces habitat quality, and may isolate or fragment nesting and foraging habitats.  <i>Note: Beach nourishment is a recognized restoration technique used in the U.S. and Canada to increase or maintain suitable habitat for Piping Plovers by restoring necessary habitat features. However, these techniques must integrate necessary habitat features into their design and avoid destroying critical habitat. Proper timing is essential to allow the natural return of beach habitat characteristics, as well as the abundance and diversity of the prey base. All activities must comply with SARA authorization requirements on federal lands and may also require permits or approvals from provincial authorities when conducted on non-federal lands. If</i>

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
		<ul style="list-style-type: none"> <li>• Temporary, low-impact monitoring or outreach structures (signposts, nest markers), provided they do not alter dune/beach slope or long-term stability.</li> </ul> <p><b>Timing:</b> Year-round; highest risk May-Aug.</p> <p><b>Permanence:</b> Temporary to permanent, depending on activity.</p> <p><b>IUCN-CMP Threats:</b> 1.1 Housing and urban areas [High]; 3.2 Mining and quarrying [Low]; 6.1 Recreational activities [High]; 7.3 Ecosystem modifications [High].</p>	<p><i>unsure, please contact Environment and Climate Change Canada, and the appropriate provincial authority, before proceeding.</i></p>
<p>Replacing natural ground with artificial surfaces (e.g., pavement, decking)</p>	<p>- Coastal development (e.g., construction of homes, cottages, roads, boardwalks, trails)                      - Shoreline stabilization/hardening (e.g., seawalls, armouring)</p>	<p><b>Threshold:</b> Destruction occurs within critical habitat when natural substrate is permanently replaced with artificial material, preventing nesting, raising chicks, resting by plovers, or restoration of necessary habitat features by natural processes.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Paving, concreting, applying incompatible dredge spoils, or installing boardwalks, decks that cover substrate.</li> </ul> <p><b>Examples – Not Destructive:</b></p> <ul style="list-style-type: none"> <li>• Temporary mats, platforms, or walkways, removed promptly and not altering slope or substrate.</li> </ul> <p><b>Timing:</b> Year-round.</p> <p><b>Permanence:</b> Permanent.</p>	<p>Prevents nesting and resting, reduces access for chicks, removes natural foraging areas.</p>

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
		<p><b>IUCN-CMP Threats:</b> 1.1 Housing and urban areas [High]; 7.3 Ecosystem modifications [High].</p>	
<p>Compacting natural substrate (e.g., sand, gravel, cobble)</p>	<ul style="list-style-type: none"> <li>- Coastal development (e.g., construction of homes, cottages, roads, boardwalks, trails)</li> <li>- Sand mining (e.g., removal of sand, gravel, cobble)</li> <li>- Use of motorized vehicles (e.g., ATVs, off-road vehicles, dirt bikes) and non-motorized vehicles (e.g., kite buggies)</li> <li>- Beach nourishment or “soft” stabilization (e.g., placing or grading materials)</li> <li>- Shoreline stabilization/hardening (e.g., seawalls, armouring)</li> <li>- Beach cleaning or raking (e.g., mechanical raking, sifting, screening)</li> </ul>	<p><b>Threshold:</b> Destruction occurs within critical habitat when compaction or rutting reduces loose substrate structure required for nesting or creates hazards (e.g., &gt;5 cm ruts that could trap flightless chicks or block adult movement) that persist beyond natural wind/one tidal cycle.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Heavy construction vehicles / trucks: even one pass causing deep rutting or hardened tracks, and crushing invertebrate prey.</li> <li>• ATVs, dirt bikes, light trucks: repeated passes compacting sand, crushing invertebrate prey, and creating ruts.</li> <li>• Kite buggies / repeated non-motorized traffic: cumulative traffic degrading surface structure.</li> </ul> <p><b>Examples – Not Destructive</b></p> <ul style="list-style-type: none"> <li>• Shallow footprints, scattered light trampling, or low-density pedestrian use, naturally erased by wind/ tide.</li> </ul> <p><b>Timing:</b> Year-round, highest risk May-Aug.</p> <p><b>Permanence:</b> Temporary to permanent, depending on activity.</p> <p><b>IUCN-CMP Threats:</b> 1.1 Housing and urban areas [High]; 3.2 Mining and quarrying [Low]; 6.1 Recreational activities [High]; 7.3 Ecosystem modifications [High].</p>	<p>Reduces suitability of habitat for nesting and feeding, decreases shelter and cover, may lower chick survival and adult condition.</p>

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
<p>Removing natural substrate (e.g., sand, gravel, cobble)</p>	<p>- Coastal development (e.g., construction of homes, cottages, roads, boardwalks, trails)                      - Sand mining (e.g., removal of sand, gravel, cobble)                      - Shoreline stabilization/hardening (e.g., seawalls, armouring)</p>	<p><b>Threshold:</b> Destruction occurs within critical habitat when removal of substrate (sand, gravel, cobble) reduces or eliminates nesting/resting substrate, alters beach/dune form, or creates persistent hazards (e.g., &gt;5 cm holes/trenches that could trap flightless chicks or block adult movement).</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Sand/cobble mining or removal by machinery, truckloads or wheelbarrow loads.</li> <li>• Digging large pits or trenches not restored before plovers return to nest or by one tidal cycle when plovers are present.</li> </ul> <p><b>Examples – Not Destructive:</b></p> <ul style="list-style-type: none"> <li>• Shallow digging/play areas refilled or erased by wind/tides.</li> </ul> <p><b>Timing:</b> Year-round; highest risk May-Aug.</p> <p><b>Permanence:</b> Permanent.</p> <p><b>IUCN-CMP Threats:</b> 1.1 Housing and urban areas [High]; 3.2 Mining and quarrying [Low]; 7.3 Ecosystem modifications [High].</p>	<p>Loss of safe nesting and resting areas, reduced foraging opportunities, higher risk of chick entrapment, greater vulnerability to predators, and may permanently alter dune/beach dynamics.</p>
<p>Altering or degrading natural sparse vegetation</p>	<p>- Coastal development (e.g., construction of homes, cottages, roads, boardwalks, trails)                      - Sand mining (e.g., removal of sand, gravel, cobble)</p>	<p><b>Threshold:</b> Destruction occurs within critical habitat when sparse dune/beach vegetation is eliminated, altered, or replaced in ways that compromise dune/beach integrity, or reduce nesting/resting habitat, prey abundance, or cover/shelter.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Repeated trampling or vehicle traffic that kills/damages vegetation.</li> </ul>	<p>Loss of native vegetation: reduces dune stability, increases erosion, removes cover/shelter from predators/weather.</p> <p>Introduction of invasive vegetation: stabilizes dunes excessively, reduces open</p>

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
	<ul style="list-style-type: none"> <li>- Use of motorized vehicles (e.g., ATVs, off-road vehicles, dirt bikes) and non-motorized vehicles (e.g., kite buggies)</li> <li>- Beach nourishment or “soft” stabilization (e.g., placing or grading materials)</li> <li>- Beach cleaning or raking (e.g., mechanical raking, sifting, screening)</li> </ul>	<ul style="list-style-type: none"> <li>• Clearing or landscaping vegetation for trails or development.</li> <li>• Installing sod, turf, or non-native ground cover, or adding inappropriate fill containing weed seeds.</li> <li>• Planting, seeding, or encouraging non-native vegetation that excessively stabilizes dunes.</li> </ul> <p><b>Examples – Not Destructive:</b></p> <ul style="list-style-type: none"> <li>• Occasional trampling or light foot traffic without lasting vegetation loss.</li> </ul> <p><b>Timing:</b> Year-round, most impactful May-Aug.</p> <p><b>Permanence:</b> Temporary to permanent. Loss of native vegetation can sometimes recover; invasive vegetation, once established, is very difficult to reverse.</p> <p><b>IUCN-CMP Threats:</b> 1.1 Housing and urban areas [High]; 3.2 Mining and quarrying [Low]. 6.1 Recreational activities [High]; 7.3 Other ecosystem modifications [High].</p>	<p>nesting habitat, decreases sightlines for predator detection, and may alter prey availability.</p>
<p>Damaging or removing natural materials for shelter and cover (e.g., wrack, driftwood, shells)</p>	<ul style="list-style-type: none"> <li>- Sand mining (e.g., removal of sand, gravel, cobble)</li> <li>- Use of motorized vehicles (e.g., ATVs, off-road vehicles, dirt bikes) and non-motorized vehicles (e.g., kite buggies)</li> <li>- Beach nourishment or “soft” stabilization</li> </ul>	<p><b>Threshold:</b> Destruction occurs within critical habitat when bulk removal (i.e., &gt; one wheelbarrow load) of wrack, shells, driftwood significantly reduces cover, prey, or chick survival resources, persisting beyond one tidal cycle.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Mechanical wrack clearing, raking, or sifting across large beach areas.</li> <li>• Repeated removal of driftwood or shells.</li> </ul> <p><b>Examples – Not Destructive:</b></p>	<p>Reduces cover for chicks, decreases prey availability, increases predation risk, and reduces microhabitats that provide cover and shelter.</p> <p><i>Note: The careful, low-disturbance removal of human-made debris (such as plastic, garbage, or other litter) by hand is generally not</i></p>

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
	(e.g., placing or grading materials) - Shoreline stabilization/hardening (e.g., seawalls, armouring) - Beach cleaning or raking (e.g., mechanical raking, sifting, screening)	<ul style="list-style-type: none"> <li>• Temporary movement of small amounts of wrack, shells, or driftwood by hand, where material is not removed.</li> <li>• Limited rearrangement of natural materials by hand, provided material remains on site and natural cover is not substantially reduced.</li> </ul> <p><b>Timing:</b> Highest risk May-Aug.</p> <p><b>Permanence:</b> Temporary.</p> <p><b>IUCN-CMP Threats:</b> 3.2 Mining and quarrying [Low]; 6.1 Recreational activities [High]; 7.3 Other ecosystem modifications [High].</p>	<p><i>considered destructive to Piping Plover habitat. This type of clean-up avoids removing natural materials (like seaweed or shells) that plovers rely on for shelter and feeding and helps reduce hazards without disturbing sensitive beach features.</i></p>
<b>Area(s): Intertidal Zone</b>			
Compacting moist, sandy, or muddy areas	- Sand mining (e.g., removal of sand, gravel, cobble) - Use of motorized vehicles (e.g., ATVs, off-road vehicles, dirt bikes) and non-motorized vehicles (e.g., kite buggies) - Shoreline stabilization/hardening (e.g., seawalls, armouring)	<p><b>Threshold:</b> Destruction occurs within critical habitat when compaction of moist intertidal substrate prevents foot-trembling feeding behavior, reduces invertebrate prey abundance, or creates ruts or crusting (which hinders chick/adult access to prey) that persist beyond one tide cycle.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Heavy vehicles: one or few passes causing deep rutting and reducing prey density.</li> <li>• ATVs/dirt bikes/light trucks: repeated use reducing prey density.</li> <li>• Kite buggies: destructive with high-frequency use in small areas.</li> </ul> <p><b>Examples – Not Destructive</b></p> <ul style="list-style-type: none"> <li>• Footprints, scattered light trampling, or low-density pedestrian use naturally erased by the tide.</li> </ul>	Reduces foraging habitat quality, decreases prey availability, and impairs feeding behaviour - leading to poorer adult condition and reduced chick survival.

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
		<p><b>Timing:</b> Highest risk May-Aug., depending on activity.</p> <p><b>Permanence:</b> Usually temporary but can be long-lasting if repeated or if natural recovery is slow.</p> <p><b>IUCN Threats:</b> 3.2 Mining and quarrying [Low]; 6.1 Recreational activities [High]; 7.3 Other ecosystem modifications [High].</p>	
<p>Removing moist, sandy, or muddy areas</p>	<p>- Sand mining (e.g., removal of sand, gravel, cobble)                      - Shoreline stabilization/hardening (e.g., seawalls, armouring)</p>	<p><b>Threshold:</b> Destruction occurs within critical habitat when excavation, removal, or displacement of moist substrates reduces feeding habitat, prey abundance, or alters tidal hydrology, and recovery cannot occur before plovers return to nest.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Sand mining or dredging in intertidal flats.</li> <li>• Excavating channels or pits that persist and disrupt feeding.</li> </ul> <p><b>Examples – Not Destructive</b></p> <ul style="list-style-type: none"> <li>• Minor hand collecting or play digging that is restored by one tidal cycle.</li> <li>• Off season removal where recovery occurs before plovers return to nest.</li> </ul> <p><b>Timing:</b> Year-round; highest risk May-Aug.</p> <p><b>Permanence:</b> Permanent or long-term; may be temporary if sediment redeposits naturally.</p> <p><b>IUCN Threats:</b> 3.2 Mining and quarrying [Low]; 7.3 Other ecosystem modifications [High].</p>	<p>Eliminates foraging habitat, reduces prey abundance.</p>

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
Altering shallow tidal pools and/ or removing wrack or other natural debris	<ul style="list-style-type: none"> <li>- Sand mining (e.g., removal of sand, gravel, cobble)</li> <li>- Use of motorized vehicles (e.g., ATVs, off-road vehicles, dirt bikes) and non-motorized vehicles (e.g., kite buggies)</li> <li>- Beach nourishment or “soft” stabilization (e.g., placing or grading materials)</li> <li>- Shoreline stabilization/ hardening (e.g., seawalls, armouring)</li> <li>- Beach cleaning or raking (e.g., mechanical raking, sifting, screening)</li> </ul>	<p><b>Threshold:</b> Destruction occurs within critical habitat when removal/filling reduces shallow pools or debris (wrack, driftwood, shells) needed for feeding or cover/shelter, persisting beyond one tidal cycle.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Wrack removal across wide stretches.</li> <li>• Filling/draining tidal pools.</li> </ul> <p><b>Examples – Not Destructive:</b></p> <ul style="list-style-type: none"> <li>• Limited hand removal of debris.</li> <li>• Small disturbances erased in one tidal cycle.</li> </ul> <p><b>Timing:</b> Highest risk May-Aug.</p> <p><b>Permanence:</b> Temporary.</p> <p><b>IUCN Threats:</b> 3.2 Mining and quarrying [Low]; 6.1 Recreational activities [High]; 7.3 Other ecosystem modifications [High].</p>	Eliminates feeding areas, reduces prey availability, increases predation risk, and increases energy expenditure for adults and chicks.
<b>Area(s): Beach, First Dune, and Intertidal Zone</b>			
Disrupting natural sand movement	<ul style="list-style-type: none"> <li>- Coastal development (e.g., construction of homes, cottages, roads, boardwalks, trails)</li> <li>- Sand mining (e.g., removal of sand, gravel, cobble)</li> <li>- Shoreline stabilization/</li> </ul>	<p><b>Threshold:</b> Destruction occurs within and up-drift of critical habitat when activities block or redirect natural sand transport needed to maintain dune/beach form, including sediment supply from up-drift sources.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Construction of jetties, groynes, seawalls, or channels disrupting longshore transport.</li> <li>• Sand mining or dredging that removes sediment supply.</li> </ul>	Alters natural coastal processes, leading to erosion or habitat loss; may create steep banks that restrict chick movement and nesting opportunities.

Effect on Habitat Feature(s)	Activity (examples)	Details of Effect on Habitat Feature(s) <sup>a</sup>	Resulting impact on Piping Plover
	hardening (e.g., seawalls, armouring)	<p><b>Examples – Not Destructive:</b></p> <ul style="list-style-type: none"> <li>• Temporary fencing removed before altering long-term sand transport.</li> </ul> <p><b>Timing:</b> Year-round; effects outside breeding season can carry over.</p> <p><b>Permanence:</b> Long-term to permanent.</p> <p><b>IUCN-CMP Threats:</b> 1.1 Housing and urban areas [High]; 3.2 Mining and quarrying [Low]; 7.3 Other ecosystem modifications [High].</p>	
Contaminating habitat features	- Deliberate or accidental discharge of oil or toxic substances (e.g., spills or contamination)	<p><b>Threshold:</b> Destruction occurs within critical habitat when contaminants (e.g., oil, fuel, chemicals, waste) degrade substrate, vegetation, or prey availability, rendering nesting, resting, feeding habitats unsuitable.</p> <p><b>Examples – Destructive:</b></p> <ul style="list-style-type: none"> <li>• Oil/chemical spills, sewage discharges, fuel leaks.</li> <li>• Waste dumping.</li> </ul> <p><b>Examples – Not Destructive:</b></p> <ul style="list-style-type: none"> <li>• Incidental, litter easily removed.</li> </ul> <p><b>Timing:</b> Year-round.</p> <p><b>Permanence:</b> Temporary to permanent.</p> <p><b>IUCN Threats:</b> 9.2 Pollution [Medium].</p>	Renders habitat unsuitable, reduces prey, may cause toxic exposure to eggs, chicks, or adults.

<sup>a</sup> **Note:** The bracketed terms (e.g., [High], [Medium], [Low]) indicate the Level of Concern, which reflects the degree of attention or priority needed to manage the threat, based on its overall impact on the species (see Table 2).

## 7.5 Scope of the Action Plan

The original recovery strategy for the Piping Plover in Canada was posted on the Species at Risk Registry in 2012 (Environment Canada 2012) and was replaced by an amended Recovery Strategy and Action Plan in 2022 (ECCC 2022). This 2026 update replaces the 2022 amended Recovery Strategy and Action Plan, providing enhanced clarity and justification for the identification of critical habitat, and a clear record of changes since the previous version.

This document also includes the Action Plan component and should be considered alongside the following Parks Canada multi-species action plans:

- Multi-species Action Plan for Kejimikujik National Park and National Historic Site of Canada (Parks Canada Agency 2017)
- Multi-species Action Plan for Kouchibouguac National Park of Canada and associated National Historic Sites of Canada (Parks Canada Agency 2016b),
- Multi-species Action Plan for Prince Edward Island National Park of Canada and National Historic Sites Administered by Parks Canada on PEI (Parks Canada 2025)
- Multi-species Action Plan for Gros Morne National Park (Parks Canada Agency 2016).

## 7.6 Proposed Measures to Protect Critical Habitat

This section outlines measures currently in place and other potential measures available under SARA to protect critical habitat for Piping Plover as part of this action plan.

### Measures Proposed to Protect Critical Habitat on Federal Lands

Descriptions of critical habitat located within federally protected areas are published in the *Canada Gazette*, which triggers the prohibition under SARA subsection 58(1).

As of July 2025, the following descriptions are published:

- Two descriptions (January 2013 and December 2017) linked to the 2012 Recovery Strategy (Environment Canada 2012), covering critical habitat within various federally protected areas.
- One description from June 2016, associated with the Gros Morne National Park multi-species Action Plan, for Western Brook Beach (Parks Canada Agency 2016).
- Two descriptions published in 2022 following the amended Recovery Strategy and Action Plan:
  - November 2022: Covering Big Glace Bay Lake National Wildlife Area, Pointe de l'Est National Wildlife Area, and Port Joli Bird Sanctuary.
  - December 2022: Covering Gros Morne National Park, Kejimikujik National Park (Seaside), Kouchibouguac National Park, and Prince Edward Island National Park.

These descriptions fulfill the requirement under subsection 58(3) of SARA and contribute to the legal protection of critical habitat on federal lands.

### **Additional Federal Lands Outside Protected Areas**

For critical habitat on federal lands that are not federally protected areas, the competent minister must determine whether legal protection is already in place. If not, a protection order must be issued under SARA subsection 58(5)(a) after consulting with any other competent minister. If no protection order is issued, the minister must publish a protection statement under SARA subsection 58(5)(b) on the Species at Risk Public Registry indicating how existing legal instruments provide protection. ECCC is continuing to collaborate with relevant federal departments to assess and confirm protection for any such land.

### **Measures Proposed to Protect Critical Habitat on Non-federal Lands**

For critical habitat located on non-federal lands, ECCC will consult with the relevant provincial governments to identify existing measures that contribute to its protection. If the minister determines there are portions of critical habitat that are not protected, the minister will recommend that the Governor in Council specify an order to protect such habitat under SARA. Steps taken to protect portions of critical habitat that have not been protected will be reported through the Species at Risk Public Registry as required in accordance with SARA section 63.

## **8. Evaluation of Socio-economic Costs and Benefits**

SARA requires that an action plan include an evaluation of the socio-economic costs of the action plan and the benefits to be derived from its implementation (SARA 49(1)(e), 2002). This evaluation addresses only the incremental socio-economic costs of implementing this action plan from a national perspective as well as the social and environmental benefits that would occur if the action plan were implemented in its entirety, recognizing that not all aspects of its implementation are under the jurisdiction of the federal government. It does not address cumulative costs of species recovery in general nor does it attempt a cost-benefit analysis. Its intent is to inform the public and to guide decision making on implementation of the action plan by partners.

The protection and recovery of species at risk can result in both benefits and costs. The Act recognizes that “*wildlife, in all its forms, has value in and of itself and is valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historical, economic, medical, ecological and scientific reasons*” (SARA 2002). Self-sustaining and healthy ecosystems with their various elements in place, including species at risk, contribute positively to the livelihoods and the quality of life of all Canadians. A review of the literature confirms that Canadians value the preservation and conservation of species in and of themselves. Actions taken to preserve a species, such as habitat protection and restoration, are also valued. In addition, the more an action contributes to the recovery of a species, the higher the value the public places on such actions

(Loomis and White 1996, Fisheries and Oceans Canada 2008). Furthermore, the conservation of species at risk is an important component of the Government of Canada's commitment to conserving biological diversity under the *International Convention on Biological Diversity*. The Government of Canada has also made a commitment to protect and recover species at risk through the [Accord for the Protection of Species at Risk](#). The specific costs and benefits associated with this action plan are described below.

## 8.1 Policy Baseline

The policy baseline consists of the protection under SARA for Piping Plover, along with other legislation that may provide direct or indirect habitat protection for the species. The provinces of Quebec, New Brunswick, Prince Edward Island, Nova Scotia and Newfoundland and Labrador have access to many legislative, regulatory and management tools for the conservation and stewardship of Piping Plover.

For example,

- in Quebec: Threatened or Vulnerable Species Act, Conservation and Development of Wildlife Act, Environment Quality Act, Provincial Parks Regulations, Off-Highway Vehicles Act and regulations;
- in New Brunswick: Endangered Species Act, Off-Road Vehicle Act, Clean Environment Act, Crown Lands and Forests Act, Parks Act regulations;
- in Prince Edward Island: Environmental Protection Act, Off-Highway Vehicle Act Regulations;
- in Nova Scotia: Endangered Species Act, Beaches Regulations, Off-Highway Vehicles Act, Environment Act, Wildlife Act, Provincial Parks Regulations; and
- in Newfoundland and Labrador: Endangered Species Act, Environmental Protection Act, Wild Life Regulations, Motorized Snow Vehicles and All-Terrain Vehicles Regulations, Provincial Parks Regulations.

The baseline also includes any recovery measures already undertaken, such as those carried out by recovery practitioners funded by federal or provincial species at risk programs, in-kind contributions by recovery biologists and/or universities.

The critical habitat located on federally protected areas listed under subsection 58(2) (i.e., National Parks, National Wildlife Areas and a Migratory Bird Sanctuary) is (or will be) protected under subsection 58(3) of SARA.

## 8.2 Socio-economic Profile and Baseline

Key stakeholders that may be impacted by the implementation of this action plan include federal and provincial landowners/ land managers, municipal planners and planning authorities, private landowners and beach managers, private land conservation organizations, those in the fishing and tourism industries, all-terrain vehicle associations and users, academics focused on shorebirds, environmental emergencies teams and beach visitors and users.

Indigenous peoples have contributed to Piping Plover conservation initiatives in Prince Edward Island, Nova Scotia, and Newfoundland and Labrador. As rights-holders and partners in species at risk conservation, they bring distinct knowledge, responsibilities, and authority to these efforts.

Many recovery measures will be implemented with the assistance of federal or provincial species at risk funding programs, in-kind contributions by recovery biologists, or research by universities.

### **8.3 Socio-economic Costs of Implementing this Action Plan**

Implementation of the recovery measures identified in Table 4 may generate direct costs as well as societal costs. These costs are reported in this section only if they result in incremental expenditures or constraints in land uses (including foregoing or modifying current and future activities) compared to measures already in place (see ongoing measures in Table 4).

The direct and societal costs of implementing the recovery measures contained in this action plan are expected to be low (between \$0 and \$5 million) over the short term (five years). These anticipated costs include salary, volunteer time, travel, materials, equipment and other related costs. Indirect costs are those resulting from implementing the action plan, which may have an impact on various stakeholders.

There are a number of activities currently taking place at sites where Piping Plovers breed including beach recreation (e.g., pedestrian traffic, sunbathing, camping and campfires, kite buggies and surfing and unleashed pets) and off-road vehicle (ORV) use. In Newfoundland and Labrador, ORV use on beaches is a legal activity unless otherwise designated by a ministerial directive. Ministerial directives are now in place for most critical habitat sites, but not all sites. On the Magdalen Islands in Quebec, ORV use on beaches during the Piping Plover breeding season is illegal, except where an off-road trail is located. It is assumed that ORV use will be restricted on lands identified as critical habitat during the Piping Plover breeding season (May-August), resulting in an impact to ORV users. Restrictions on other recreational activities may be required to protect breeding plovers and their habitat.

Coastal development activities such as operation and maintenance of wharves, dredging of small craft harbours, jetties, creation of erosion control structures and activities associated with cottages/homes may occur in areas on, or near, Piping Plover critical habitat. Coastal development activities may need to be regulated through federal, provincial and municipal processes if they are likely to destroy critical habitat. For example, dredging occurs regularly in harbour entrances and channels to allow local fishers access to the open seas. In a small number of cases this occurs on or near Piping Plover critical habitat. Dredging activities usually occur in early spring, coinciding with the arrival of Piping Plovers and the species' breeding season. As a result, modifications to dredging operations may be required at some small craft harbours.

Other coastal development activities, such as shoreline stabilization, may be impacted as a result of the protection of critical habitat. However, there may be ways to mitigate activities to prevent the destruction of critical habitat. At this time, specific development activities and any modifications that may be required are unknown, and therefore it is difficult to estimate the impact.

## 8.4 Benefits of Implementing this Action Plan

### Value of Biodiversity to Canadians

Biodiversity is essential for healthy ecosystems, human health, prosperity, security and well-being. For these reasons, globally, society invests between US\$ 8B and US\$ 10B annually in biodiversity conservation (TEEB 2008).

Canadians derive many benefits from biodiversity including recreational, aesthetic, educational and cultural benefits, as well as ecological goods and services essential to human survival. Care for the environment is consistently ranked as one of Canadian's top priorities in public opinion polls<sup>25</sup>. A 2011 opinion poll found that three-quarters of Canadian respondents feel that preserving natural areas and the diversity of native plant and animal life in Canada is important to them<sup>26</sup>.

The total value of species at risk includes non-consumptive-use values (such as recreation, spiritual/cultural, research and education), indirect-use values (value of the ecological role of a species in an ecosystem) and non-use values (i.e., preserving the benefits of nature for future generations)<sup>27</sup>. Implementing the recovery measures of this action plan will have a positive impact on society. The direct value of recovering these species, for the preservation or the enhancement of biodiversity, is not easily estimated.

### Eco-tourism and Cultural Values

Eco-tourism is the fastest-growing area of the tourism industry (Mastny 2001). In 2004, this market grew three times faster than the industry as a whole and the World Tourism Organization estimates that global spending on eco-tourism is increasing by 20% a year, about six times the industry-wide rate of growth (TEEB 2008). In 1996, the Importance of Nature to Canadians Survey estimated that 6.2% of Canadians (1.5 million) watched, photographed, studied, or fed wildlife and spent close to \$488M on these activities. There may be an increase in eco-tourism activity, as a result of achieving the population and distribution objectives for Piping Plover, which would then lead to spin-offs to local business and enhanced cultural value of local communities.

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<sup>25</sup> Canada's Fourth National Report to the United Nations Convention on Biological Diversity, 2010. Available online <http://www.cbd.int/doc/world/ca/ca-nr-04-en.pdf> Accessed December 3, 2010.

<sup>26</sup> Ipsos Reid Opinion Poll "Nine in Ten (87%) Canadians Say That When Connected to Nature They Feel Happier." Released January 7, 2011, [www.ipsos.ca](http://www.ipsos.ca)

<sup>27</sup> Non-use values include bequest value (satisfaction of knowing that future generations will have access to nature's benefits), altruist value (satisfaction of knowing that other people have access to nature's benefits) and existence value (satisfaction of knowing that a species or ecosystem exists).

### **Protection of Other Species**

Efforts to protect plover critical habitat will benefit other species of flora and fauna including these Species at Risk: Red Knot (*Calidris canutus rufa*), Gulf of St. Lawrence Aster (*Symphotrichum laurentianum*), “Ipswich” Sparrow (*Passerculus sandwichensis princeps*) and Beach Pinweed (*Lechea maritima*). Activities within this action plan may lead to positive impacts for *rufa* Red Knot, Gulf of St. Lawrence Aster, “Ipswich” sparrow and the Beach Pinweed and may decrease the direct cost of future conservation and protection actions for these species.

### **Ecosystem Services**

Sand dune systems act as a natural coastal defence against erosion, waves and flooding and buffer against extreme weather events (Spurgen 1998). They also provide other important ecosystem services including water filtration and purification, nutrient cycling and water storage in dune aquifers (Defeo et al. 2009).

## **8.5 Distributional Impacts**

Piping Plovers occur on federal, provincial and private lands and it is expected that responsibility for the species’ recovery will be shared amongst those landowners as well as all beach users. Implementation of this action plan will require contributions from, and collaboration among, various levels of government, non-governmental organizations, universities, individuals and others. Non-governmental organizations are active in Piping Plover conservation where the species occurs, and an approach of this action plan is to foster cooperative relationships with landowners and others to maintain critical habitat.

## 9. Measuring Progress

The performance indicators presented below provide a way to define and measure progress toward achieving the population and distribution objectives.

New information may be integrated to reflect new knowledge, challenges and opportunities. An evaluation of the recovery strategy will be based upon the performance measures listed below.

Annually, success of the recovery strategy implementation will be measured against the following performance indicators:

- The population is increased to 250 pairs;
- Productivity target of 1.65 chicks fledged per territorial pair is achieved

Over three consecutive international censuses, which occur every five years, success of the recovery strategy implementation will be measured against the following performance indicators:

- The population is increased to 310 pairs
- The population distribution is unchanged from the 1991 International Census

The competent minister must report on the implementation of the recovery strategy (section 46 of SARA) and action plan (section 55 of SARA) and the progress towards meeting its objectives within five years. Reporting on *implementation* of the action plan, under section 55 of SARA, will be done by assessing progress towards implementing broad strategies. Reporting on the ecological and socio-economic impacts of the action plan, under section 55 of SARA, will be done by assessing the results of monitoring the recovery of the species and its long-term viability and by assessing the implementation of the action plan.

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## Appendix A: Effects on the environment and other species

A strategic environmental assessment (SEA) is conducted on all SARA recovery planning documents, in accordance with [The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals](#)<sup>28</sup>. The purpose of a SEA is to incorporate environmental considerations into the development of public policies, plans, and program proposals to support environmentally sound decision-making and to evaluate whether the outcomes of a recovery planning document could affect any component of the environment or any of the [Federal Sustainable Development Strategy's](#)<sup>29</sup> (FSDS) goals and targets.

Recovery planning is intended to benefit species at risk and biodiversity in general. However, it is recognized that implementation of action plans may inadvertently lead to environmental effects beyond the intended benefits. The planning process based on national guidelines directly incorporates consideration of all environmental effects, with a particular focus on possible impacts upon non-target species or habitats. The results of the SEA are incorporated directly into the action plan itself, but are also summarized below in this statement.

The SEA concluded that this plan will clearly benefit the environment and will not entail any significant adverse effects. Piping Plovers require relatively undisturbed, undeveloped coastal beach habitats and the maintenance of natural coastal processes, all of which will benefit co-occurring species.

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<sup>28</sup> <https://publications.gc.ca/site/eng/378945/publication.html>

<sup>29</sup> [www.canada.ca/en/environment-climate-change/services/climate-change/federal-sustainable-development-strategy.html](http://www.canada.ca/en/environment-climate-change/services/climate-change/federal-sustainable-development-strategy.html)

## Appendix B: Summary of the Assessment of Research Needs

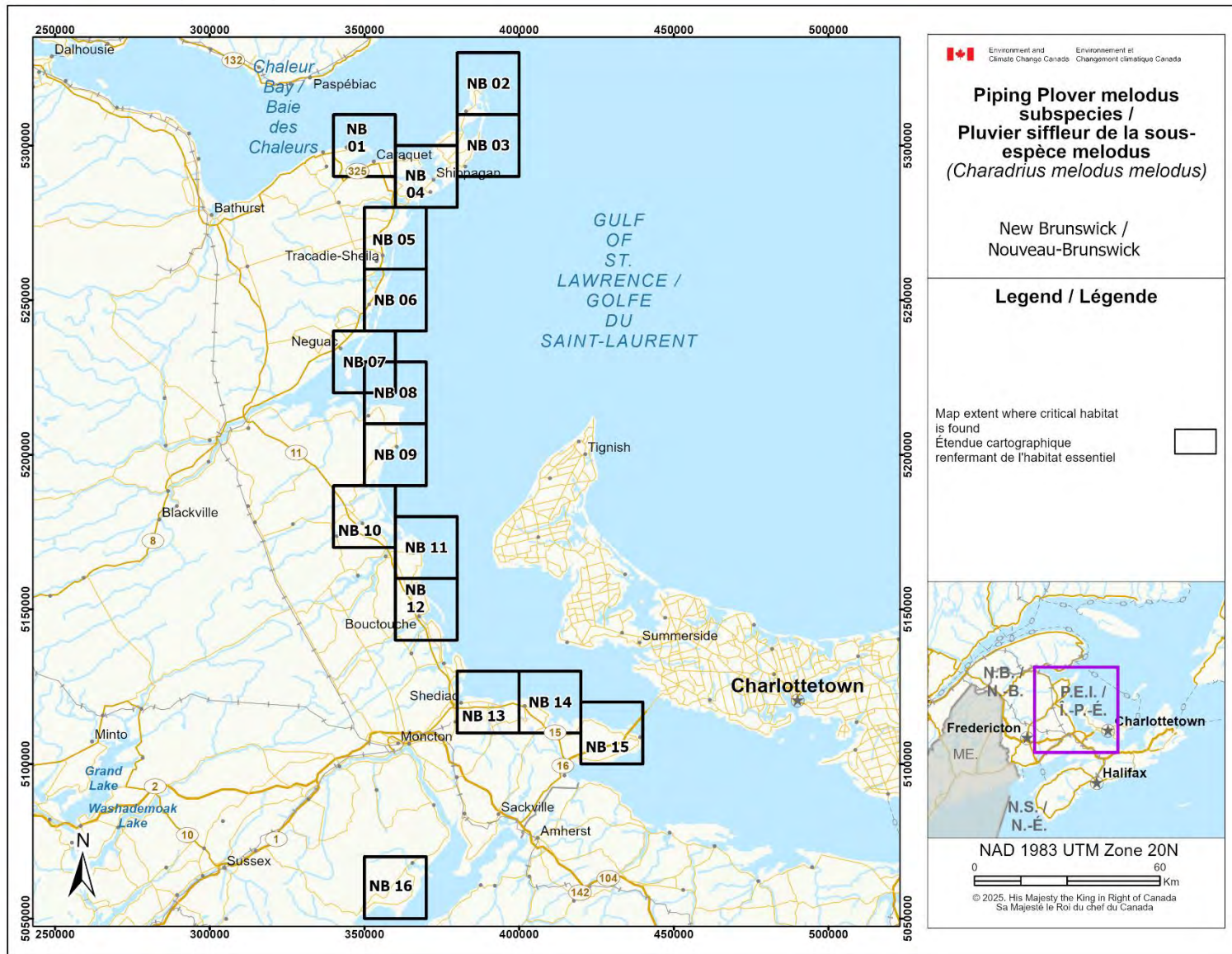
Knowledge gaps related to the recovery of Piping Plover were reviewed and prioritized based on the ability of the research to provide knowledge immediately essential for directing effective future conservation actions (Gratto-Trevor et al. 2013). The prioritization of these knowledge gaps are summarized in Table B.1. Additional descriptions of the knowledge gaps and justification for the priority ratings can be found in Appendix V of Gratto-Trevor et al. (2013).

**Table B.1. A summary of the prioritization of research needs / knowledge gaps identified in the amended recovery strategy, based on the findings from Gratto-Trevor et al. (2013).**

Research need	Priority
Knowledge gaps to recovery presented in the amended recovery strategy and prioritized by Gratto-Trevor et al. (2013):	
Identification of nonbreeding grounds (i.e., staging, migration and wintering).	High
Identification of threats to plovers on nonbreeding grounds.	High
Analyses of population viability so that the probability of population persistence can be calculated and the possible outcomes of different management scenarios can be explored.	High
Evaluate recovery management techniques (e.g., predator management and vegetation manipulation).	High
Factors affecting juvenile and adult survival, including invertebrate prey availability.	High – survival analysis; Low – prey availability
The effectiveness of mitigation measures required under environmental assessments.	Medium
Identification of the predators of adults, eggs and young and an assessment of their population-level impacts. This must be done in advance, if any predator control activities are proposed.	Medium - in specific cases only
Increase understanding of stressors in the coastal zone that affect plover habitat, survival and productivity, to enable effective input into coastal planning.	Medium
Movement of adults and young between breeding areas.	Medium-Low
Conservation genetics to determine population links within the Atlantic provinces and Quebec and with populations outside the region.	Medium-Low
Factors affecting reproductive success and survival.	Medium-Low

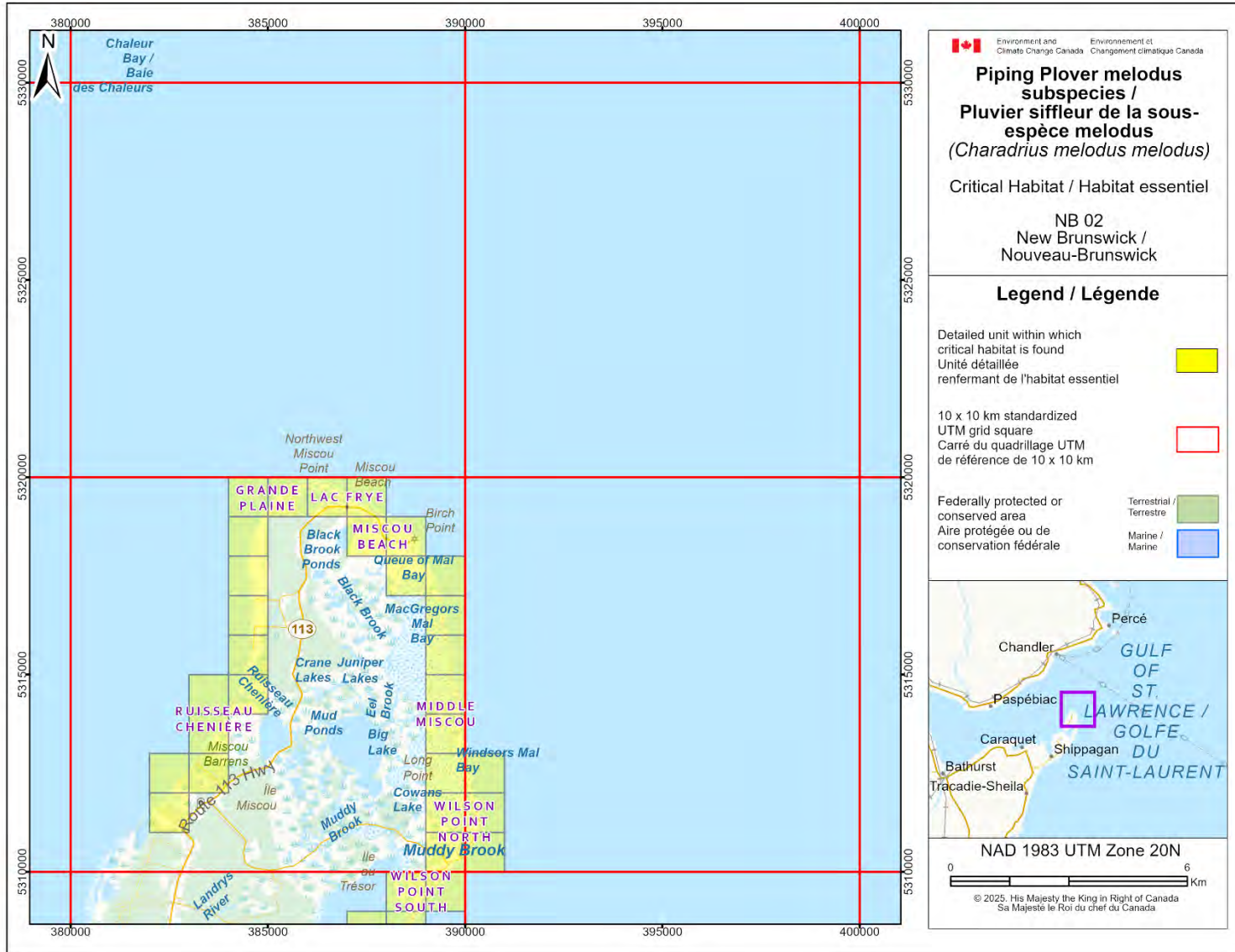
<b>Research need</b>	<b>Priority</b>
Knowledge gaps to recovery presented in the amended recovery strategy and prioritized by Gratto-Trevor et al. (2013):	
Accuracy of fledgling rate estimates.	Medium-Low
The influence of invertebrate population, distribution and abundance on habitat selection by plovers.	Low
Assess the carrying capacity of habitats in Atlantic Canada and Quebec and whether there is a need to protected currently unoccupied sites to meet population recovery objectives.	A habitat sufficiency analysis is complete
Assess the impact of sea level rise as a result of climate change on critical habitat designated under SARA.	No longer a priority
Additional knowledge gaps to recovery identified by Gratto-Trevor et al. (2013), but not presented in the amended recovery strategy:	
Identify the season and areas where most juvenile and adult mortality occurs.	High
Document the size of the areas used by adults and broods near the nest to refine core use areas within critical habitat.	Medium
Knowledge gaps to recovery presented in the amended recovery strategy, not prioritized by Gratto-Trevor et al. (2013), but prioritized in this action plan:	
Asses the response of plovers to disturbance, harassment and habitat management.	Medium
Compare characteristics of occupied habitat to apparently suitable, but unoccupied habitat.	Low

## **Appendix C: Geographic Location of Areas Containing Critical Habitat**

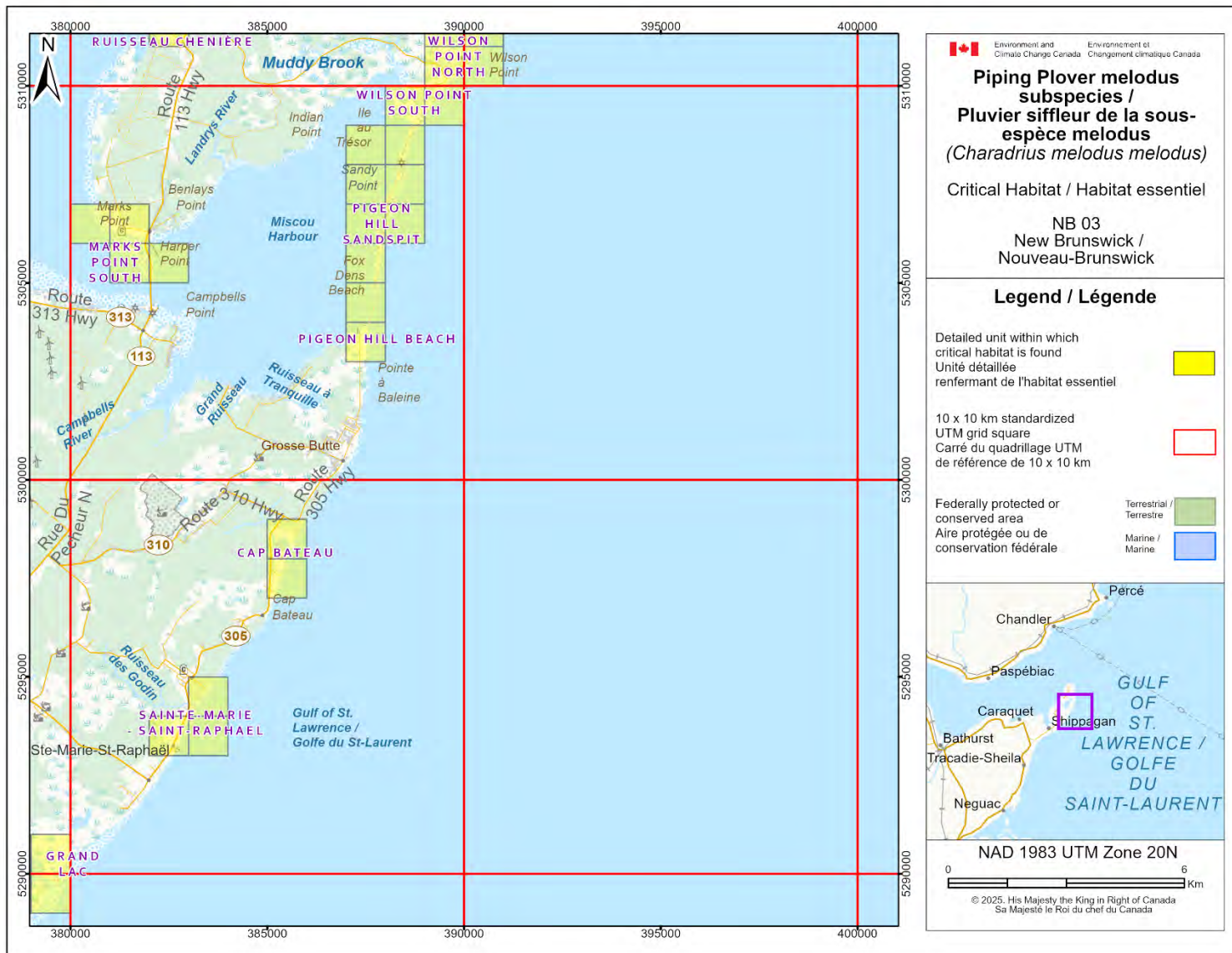


Index 01. Overview index map of critical habitat for Piping Plover *melodus* subspecies in New Brunswick.

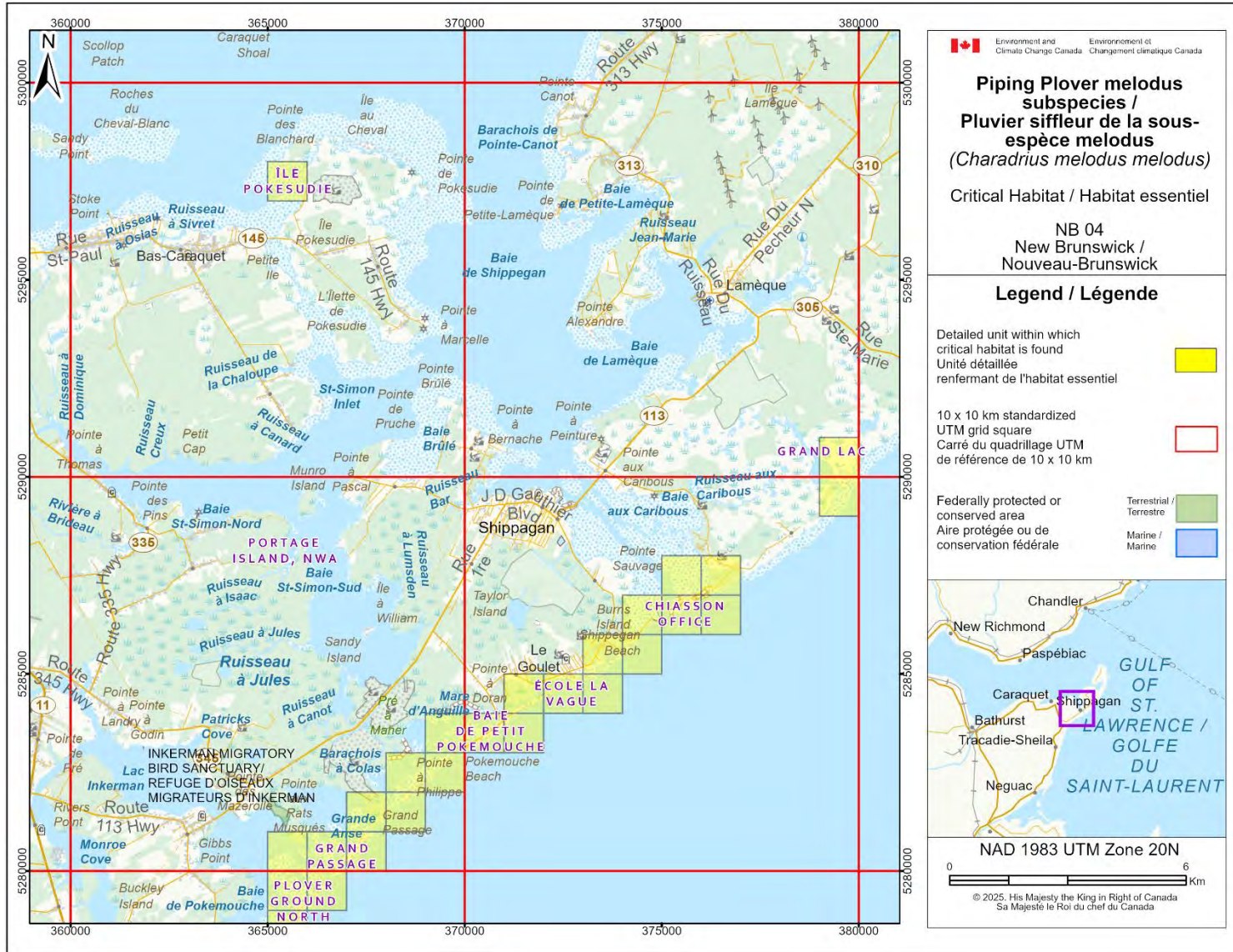




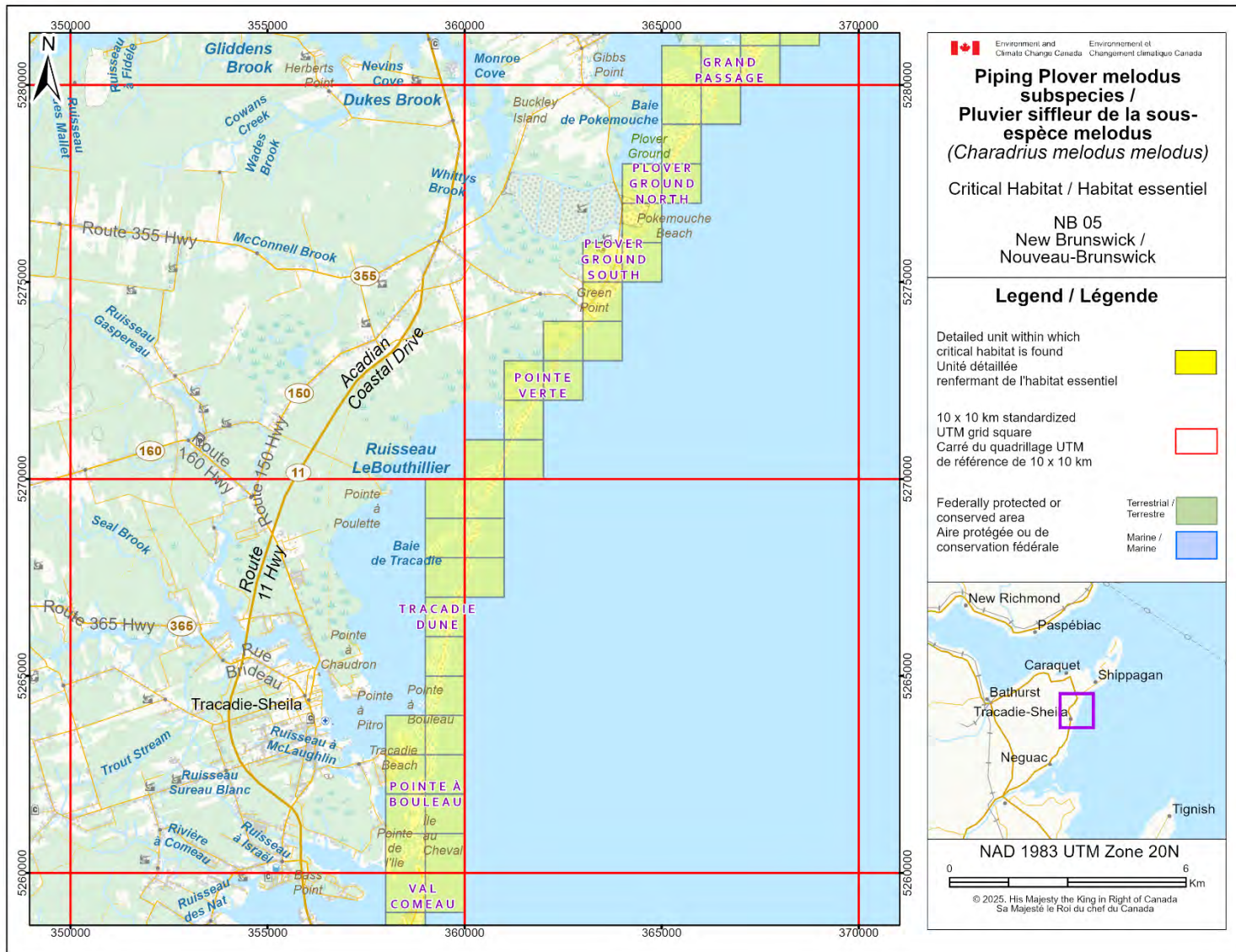
NB 02. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



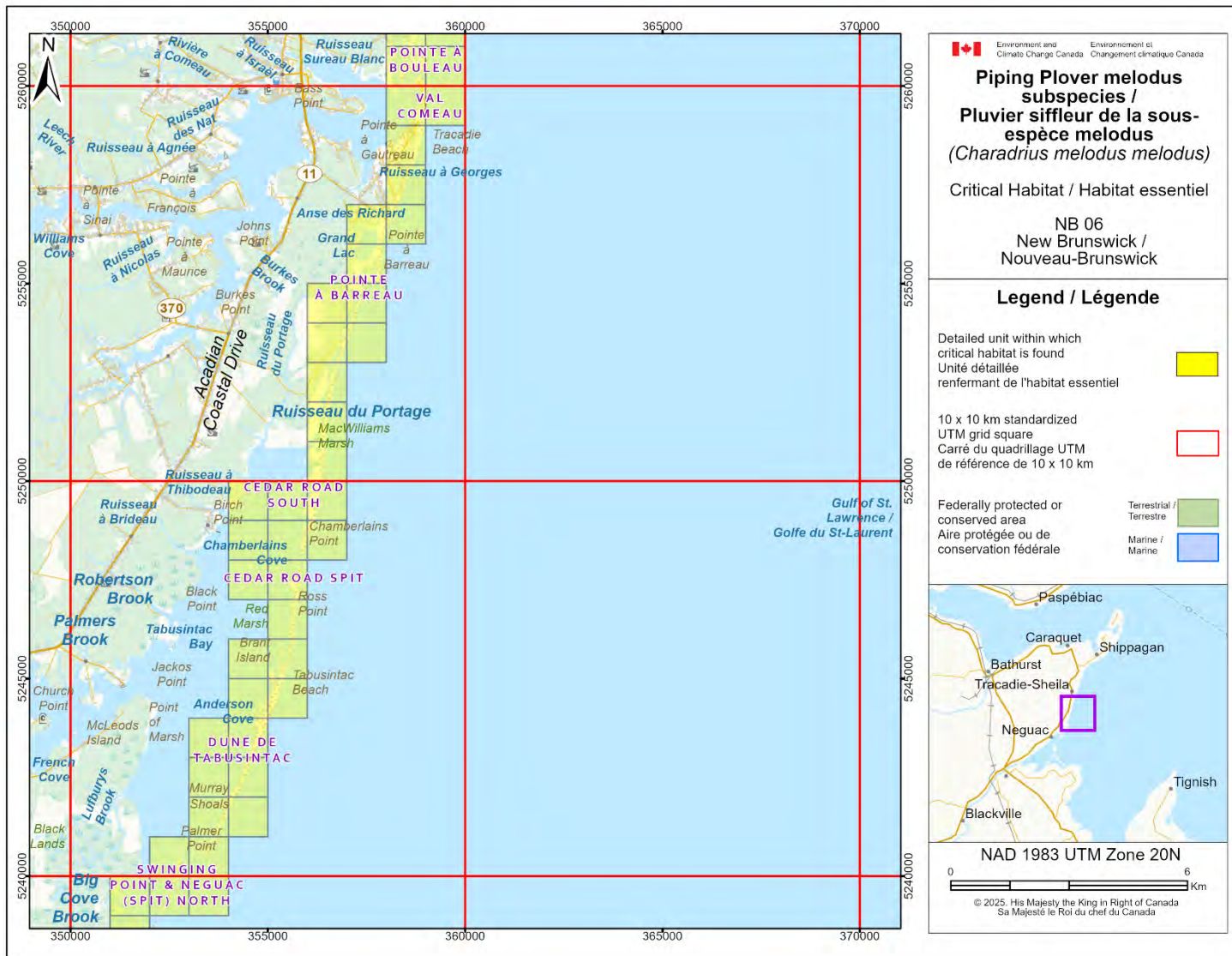
NB 03. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



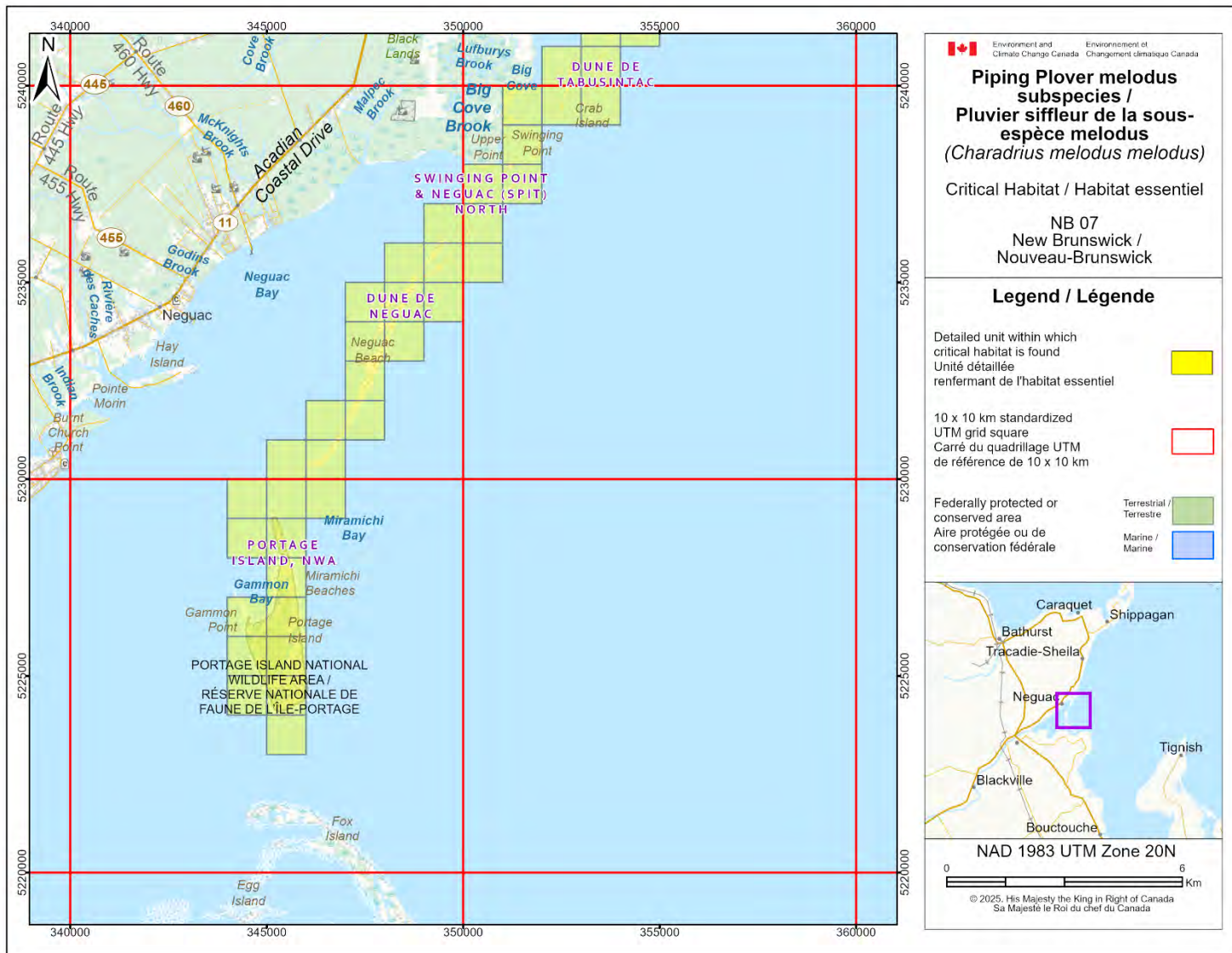
NB 04. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



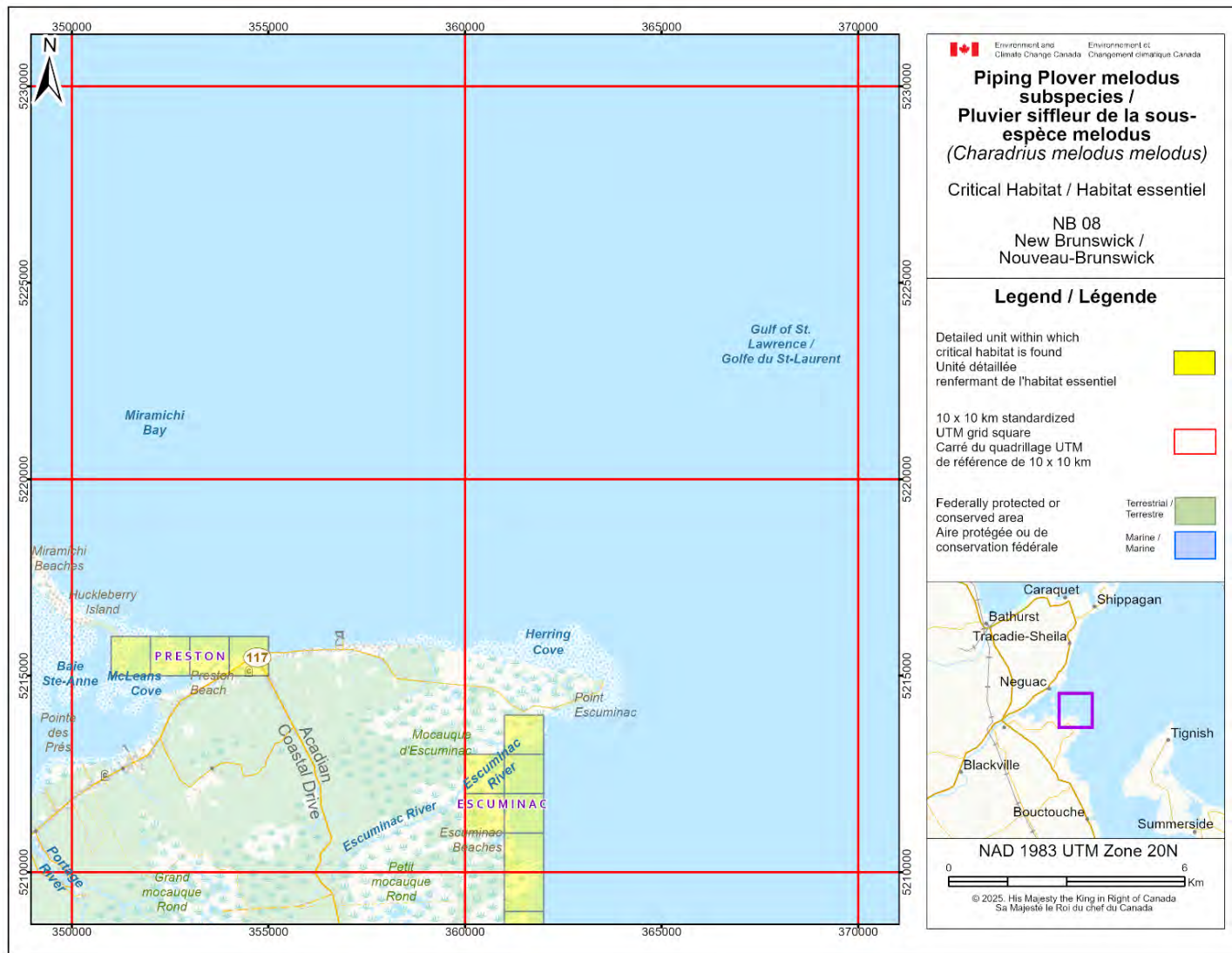
NB 05. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



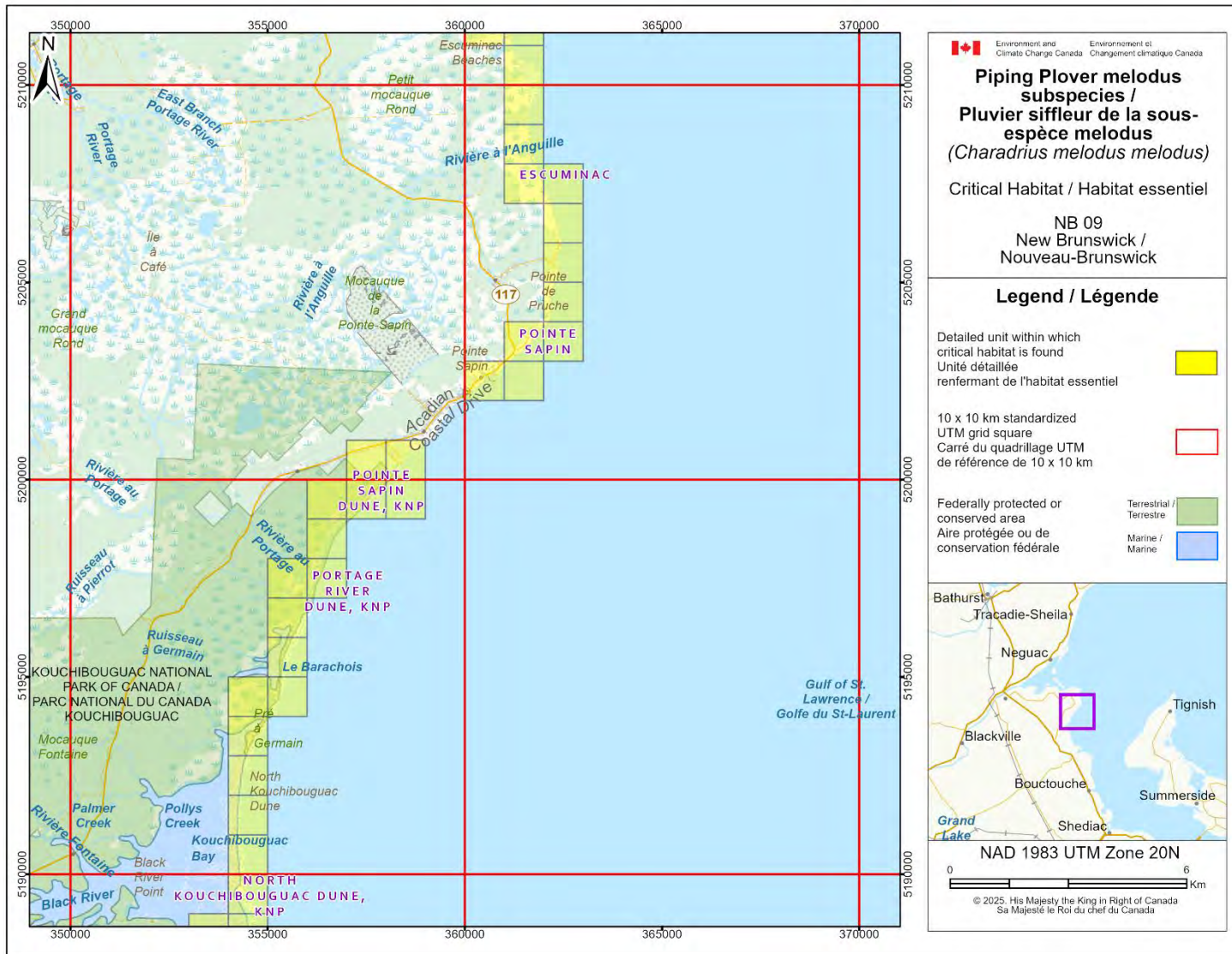
NB 06. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



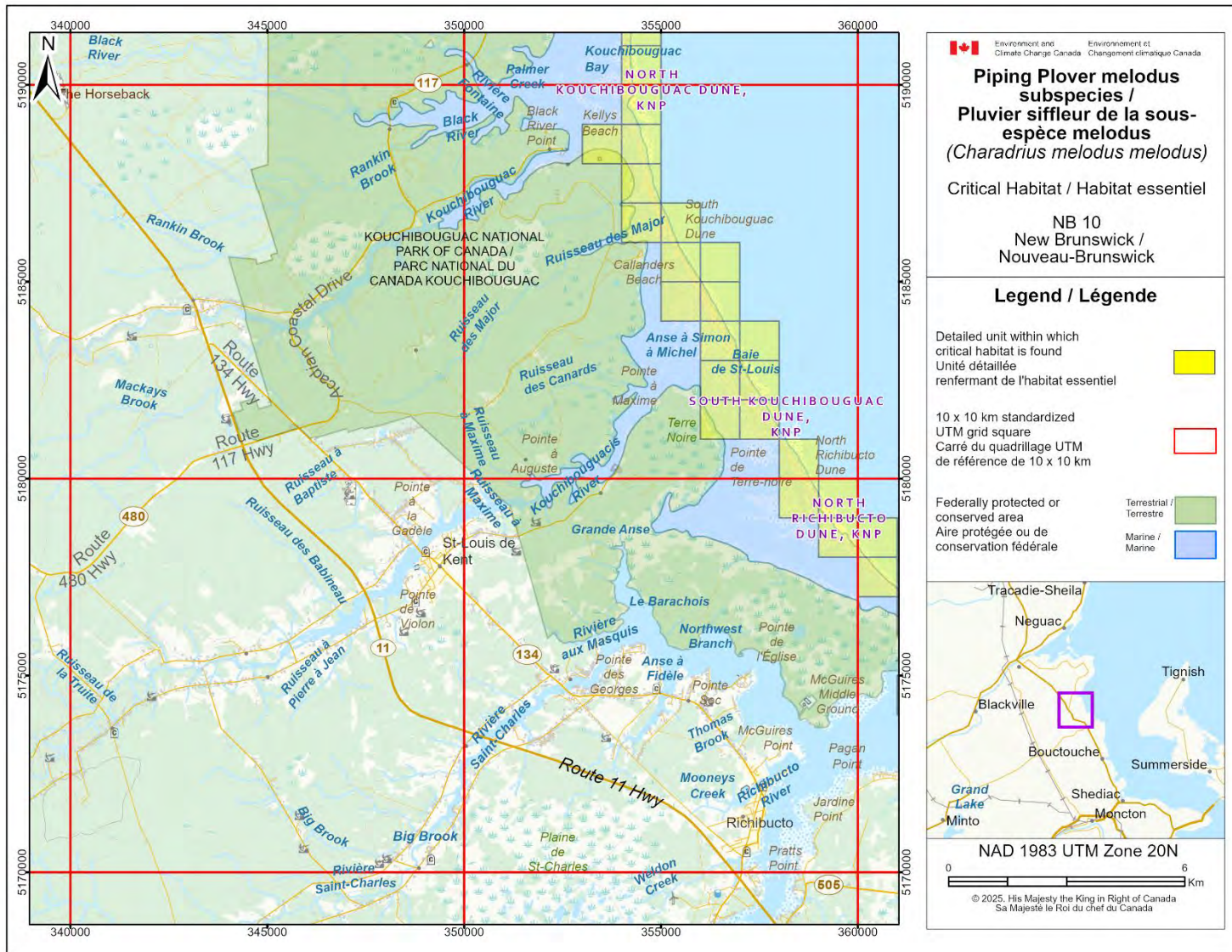
NB 07. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



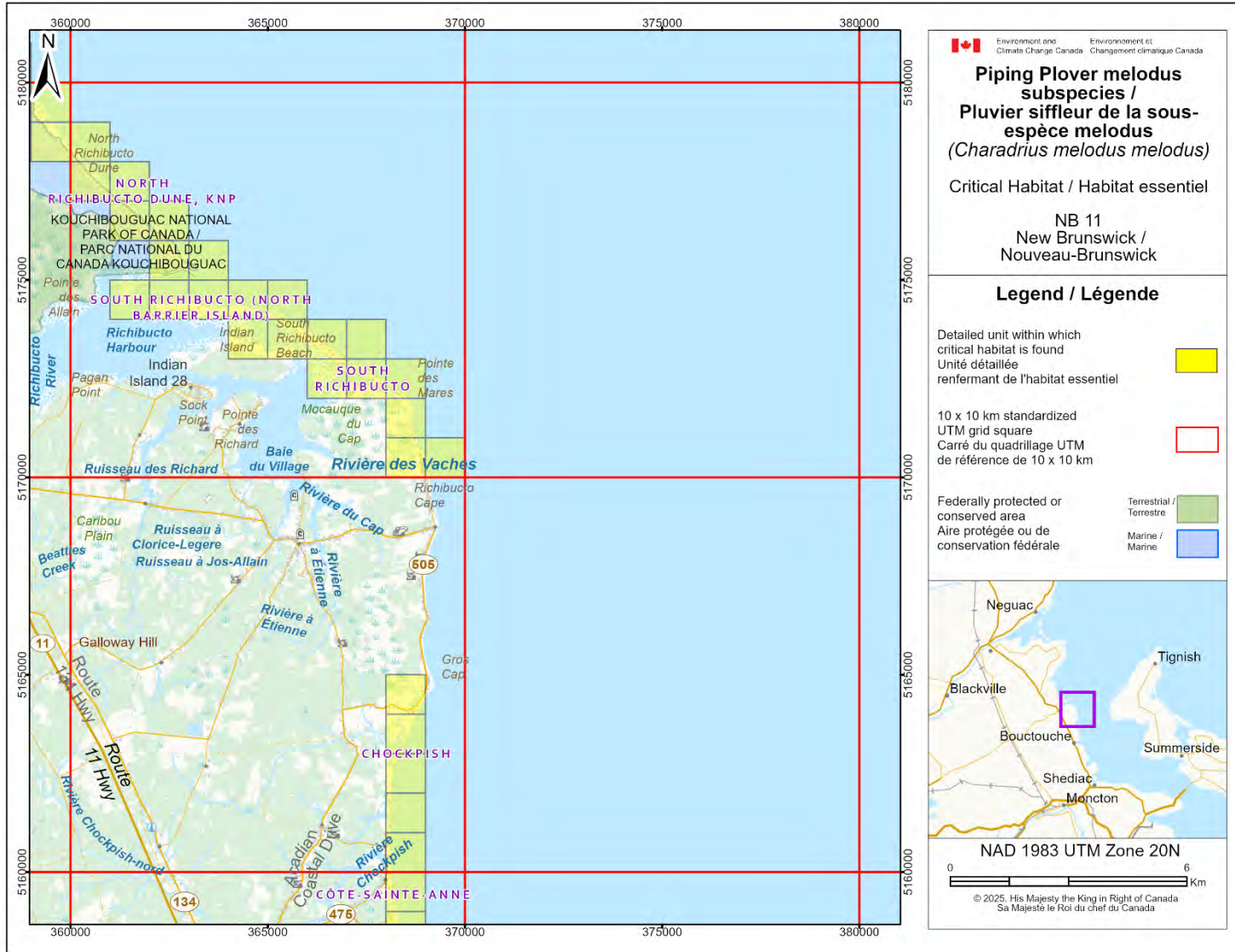
NB 08. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



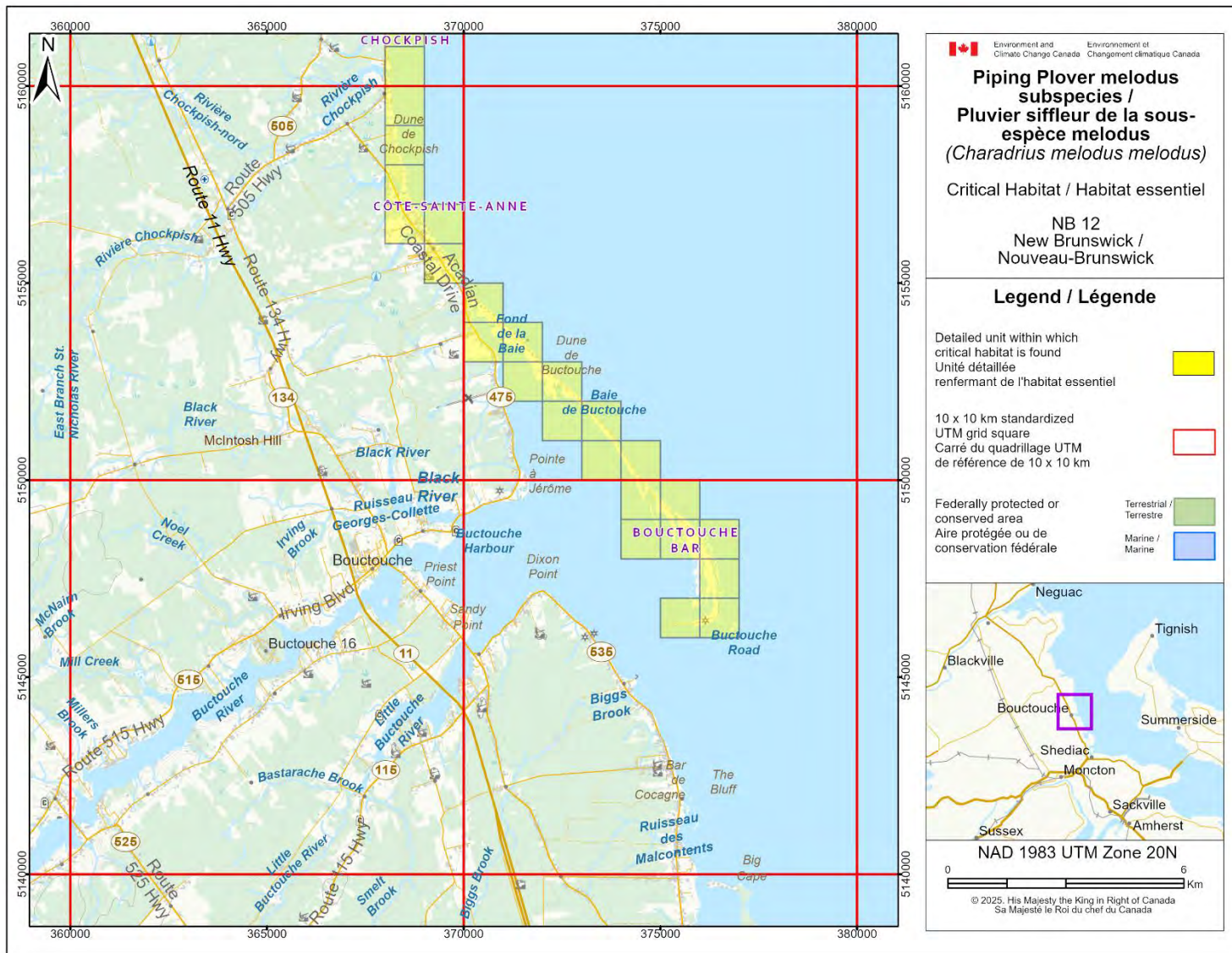
NB 09. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



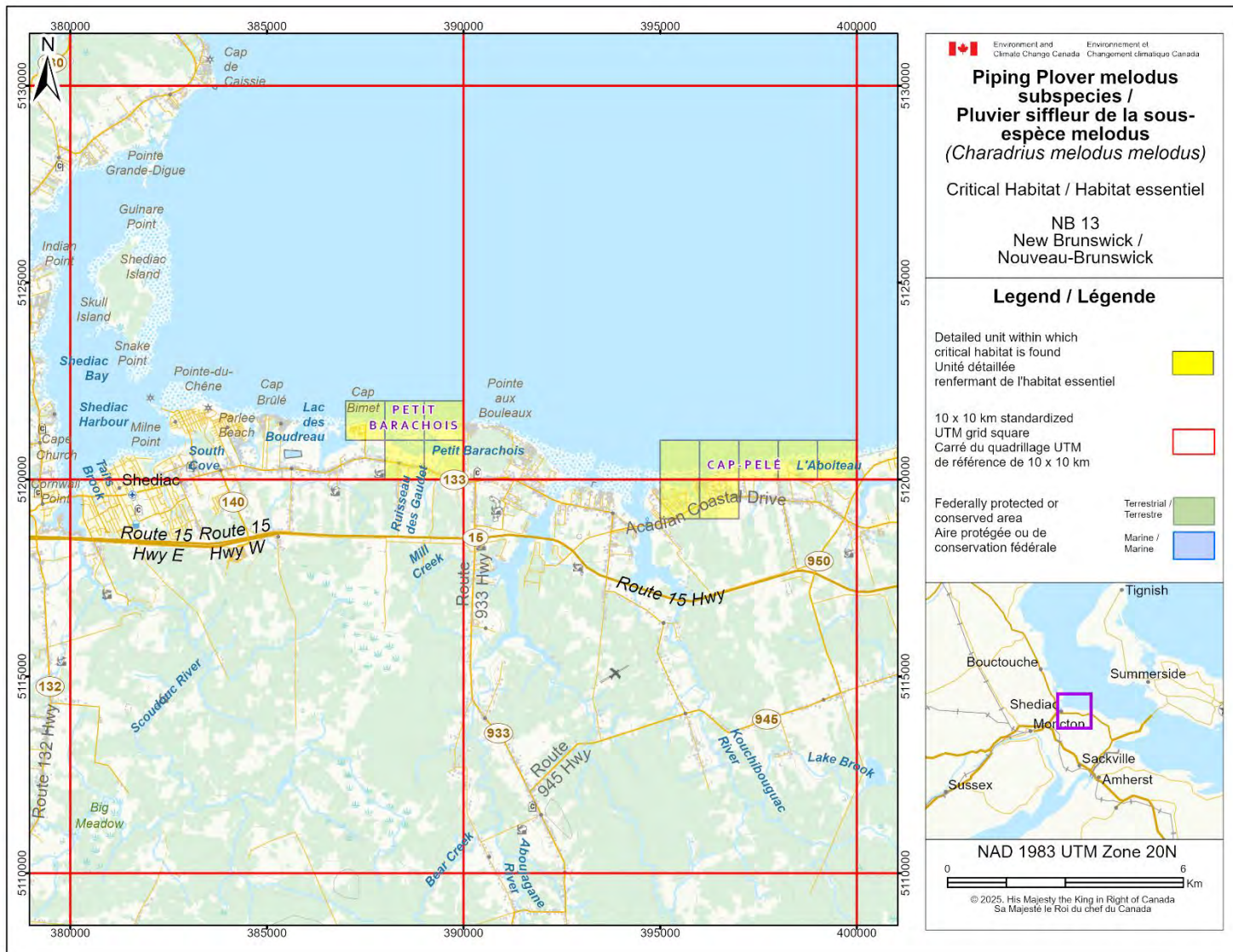
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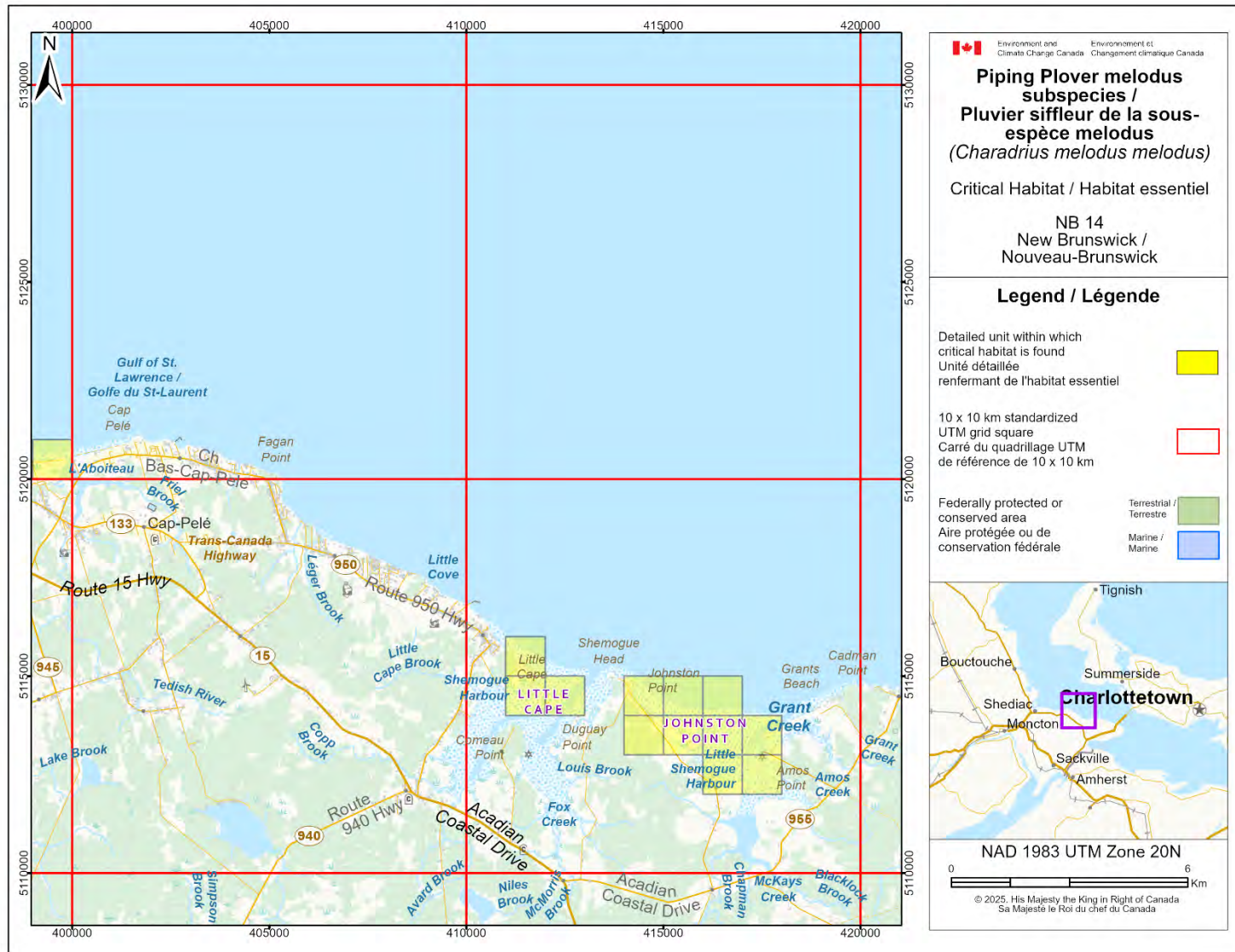
NB 11. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



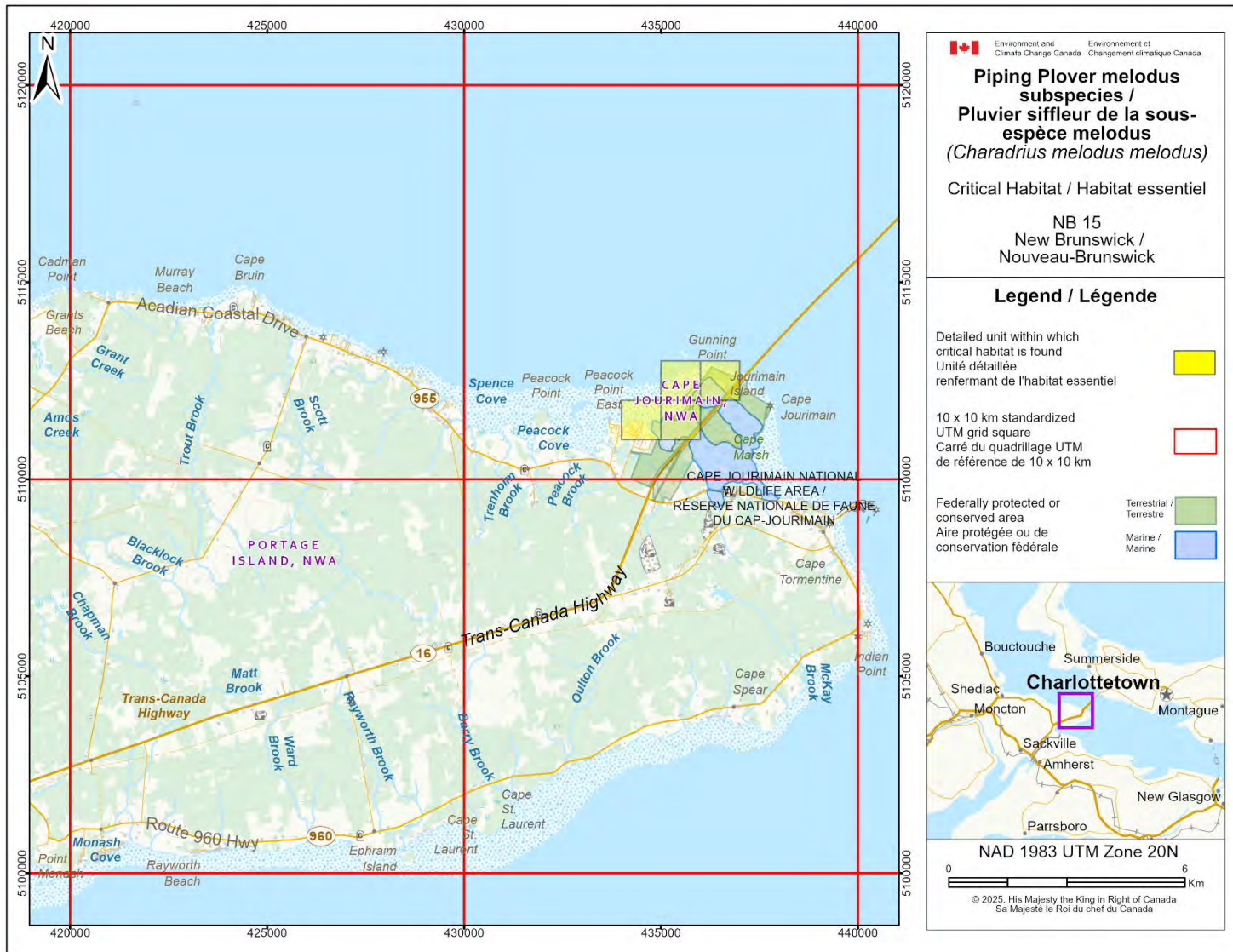
NB 12. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



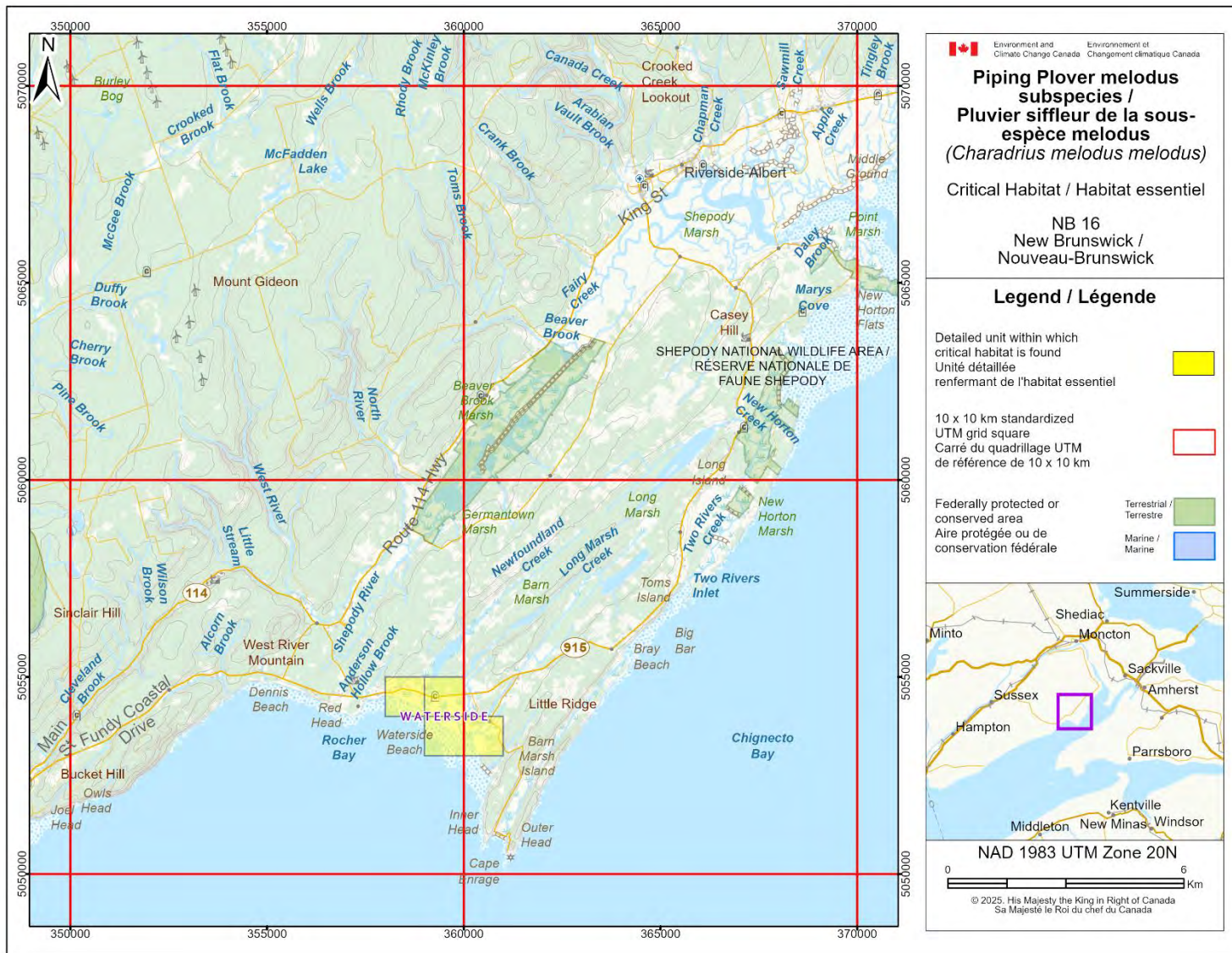
NB 13. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update



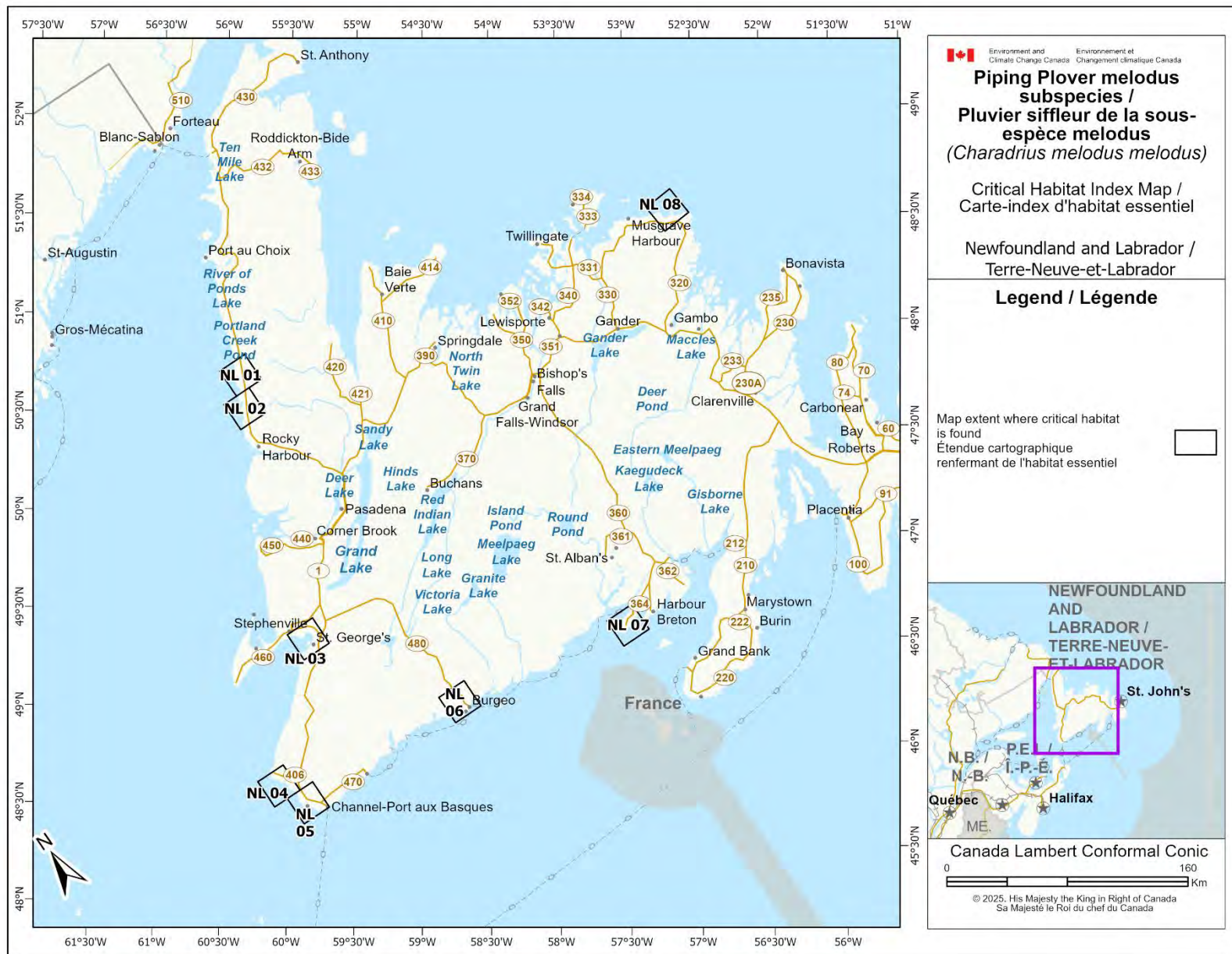
NB 14. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



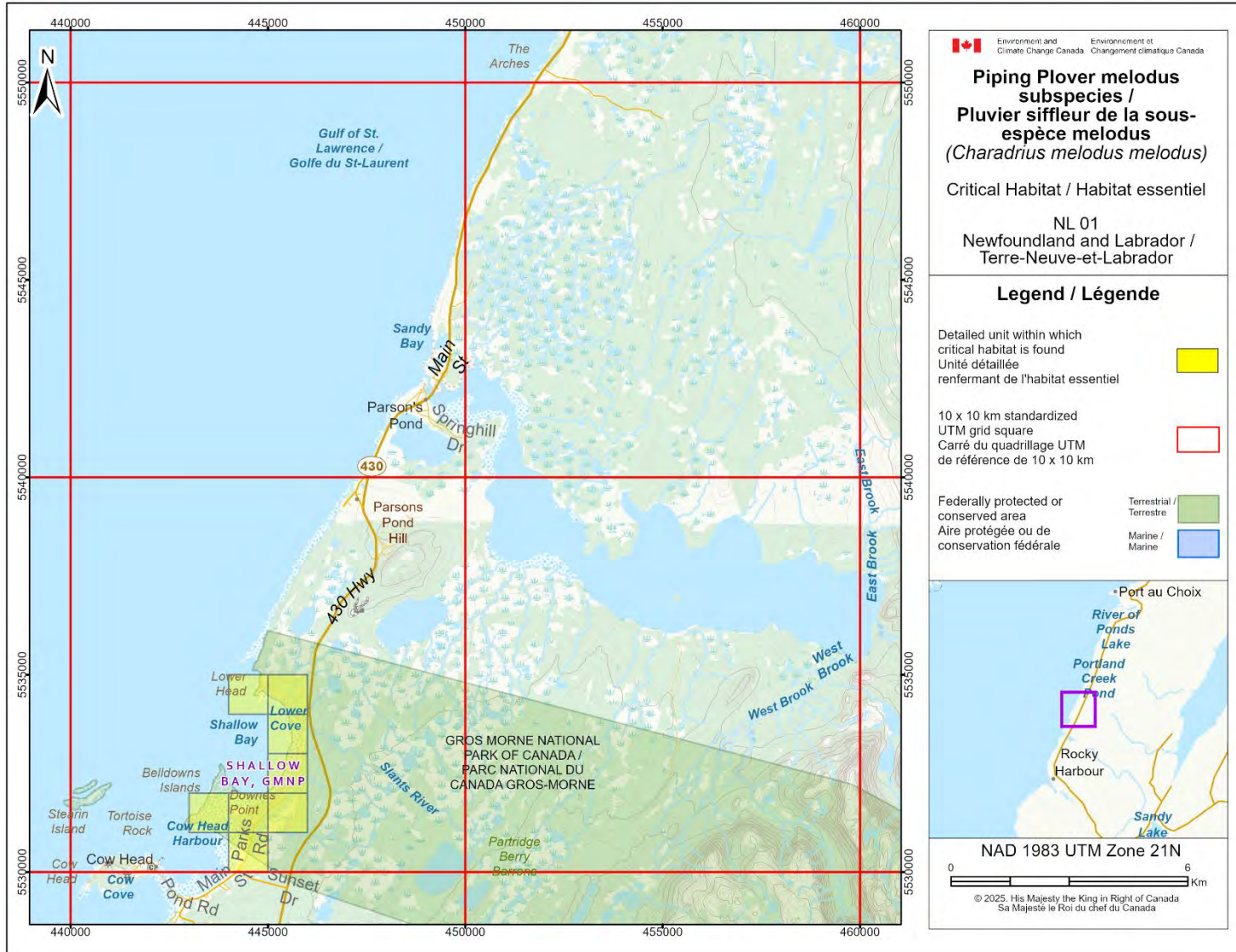
NB 15. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



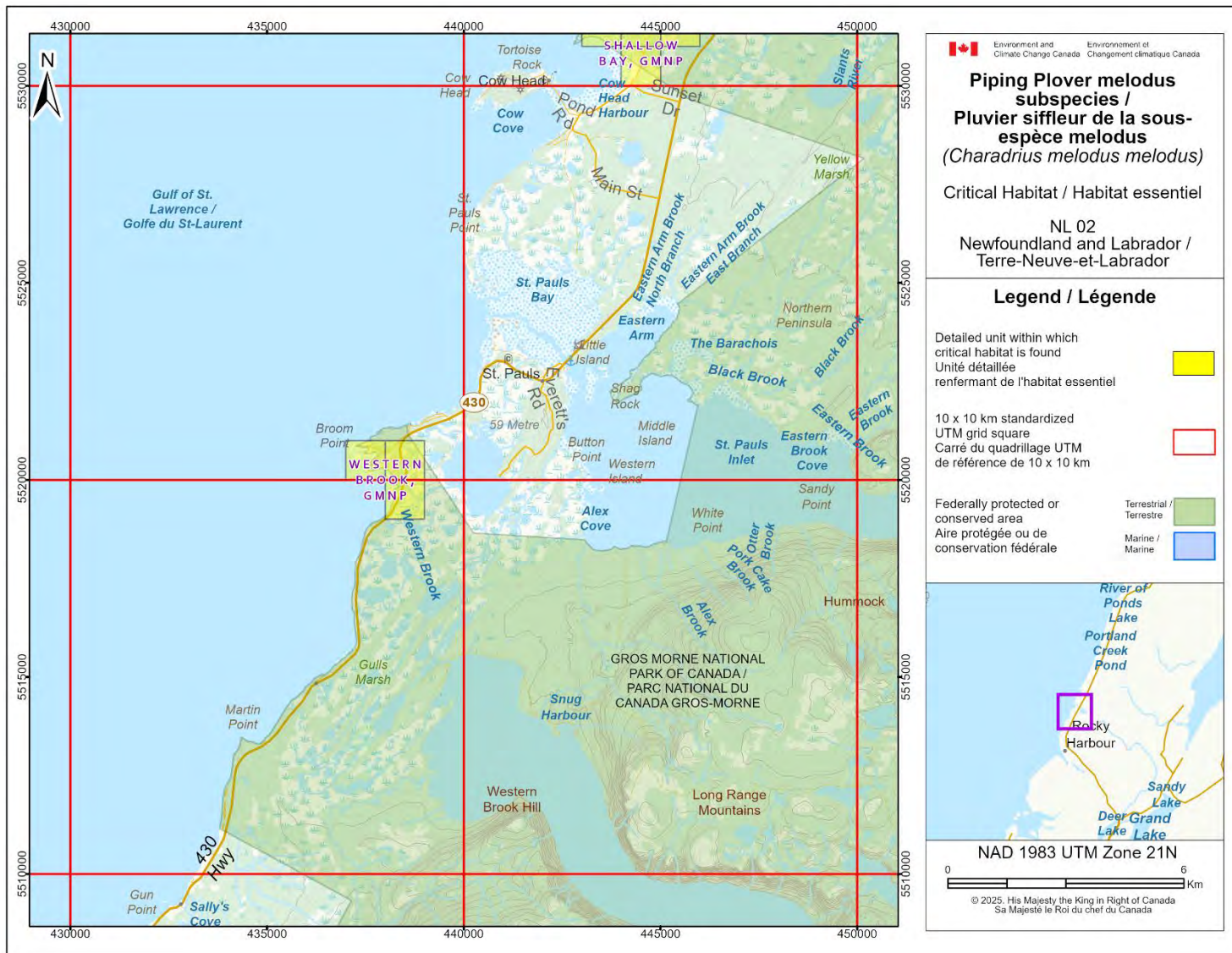
NB 16. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in New Brunswick. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



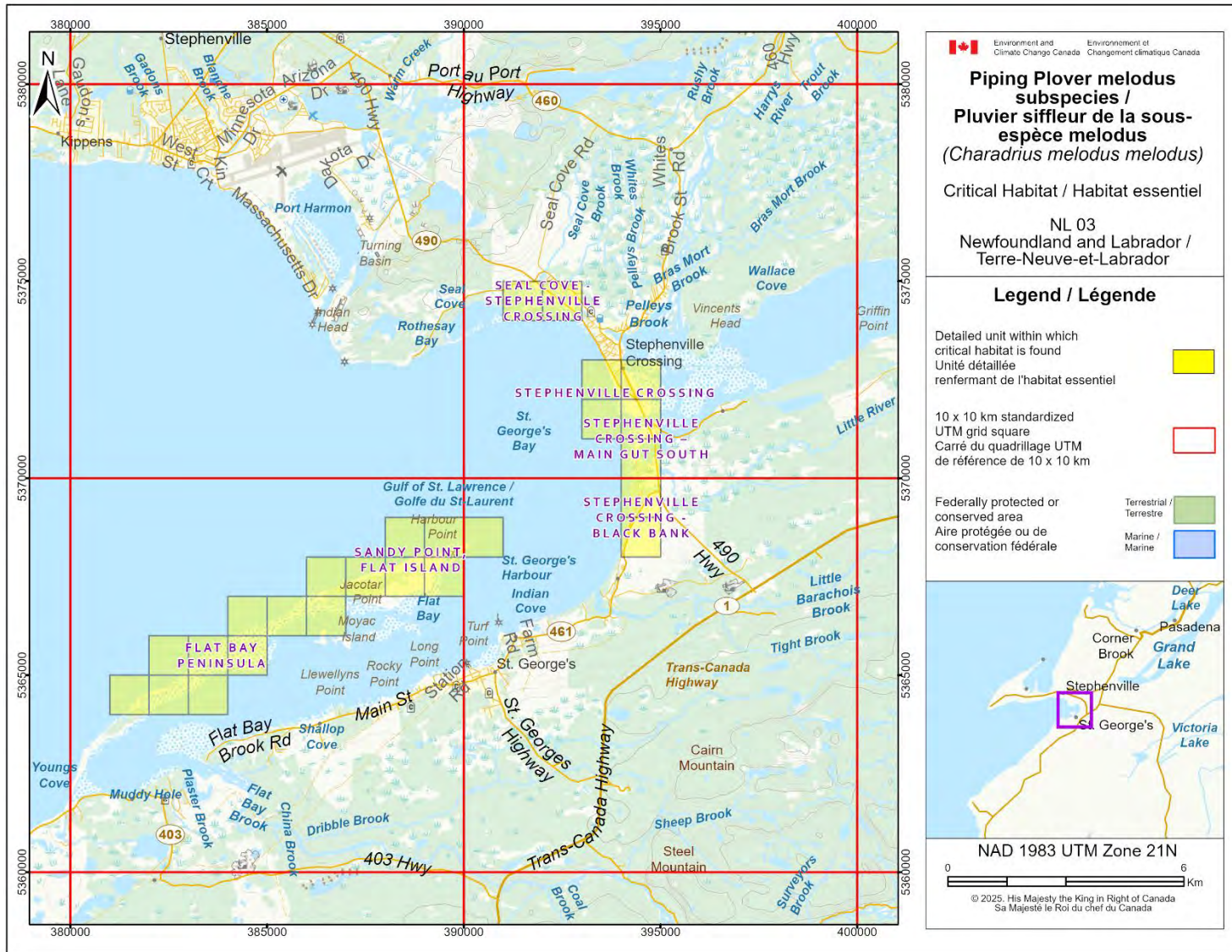
Index 02. Overview index map of critical habitat for Piping Plover *melodus* subspecies in Newfoundland and Labrador.



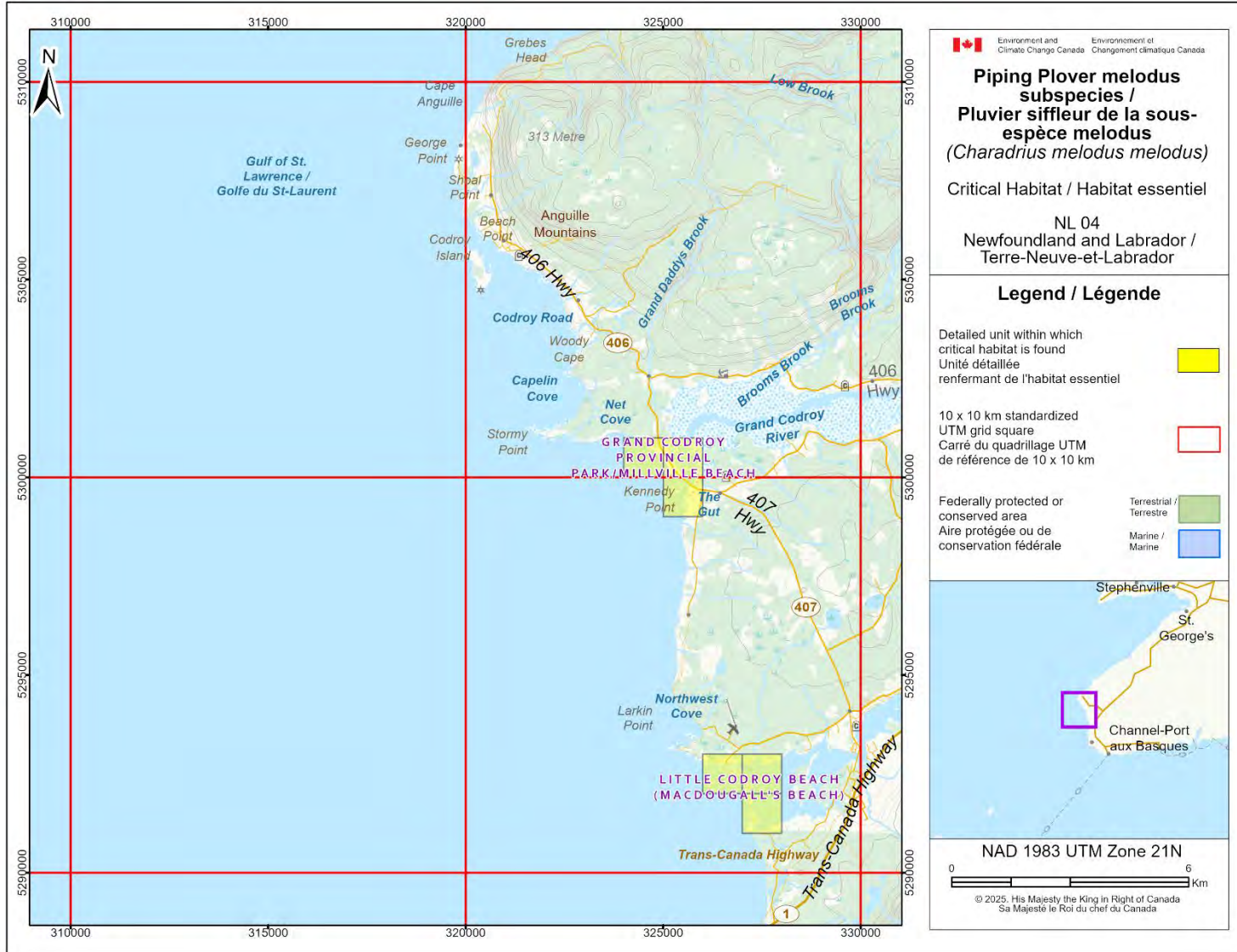
NL 01. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Newfoundland and Labrador. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



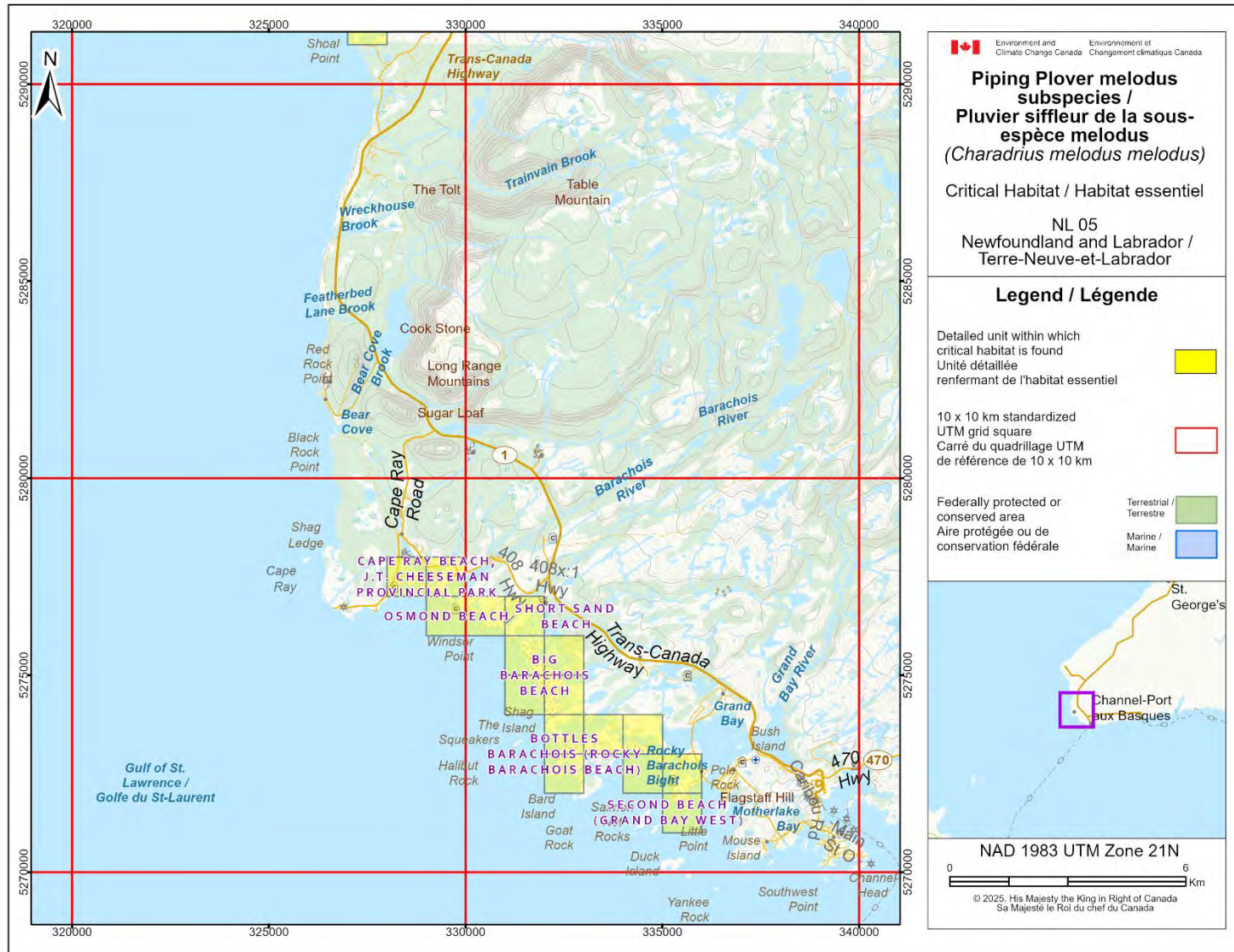
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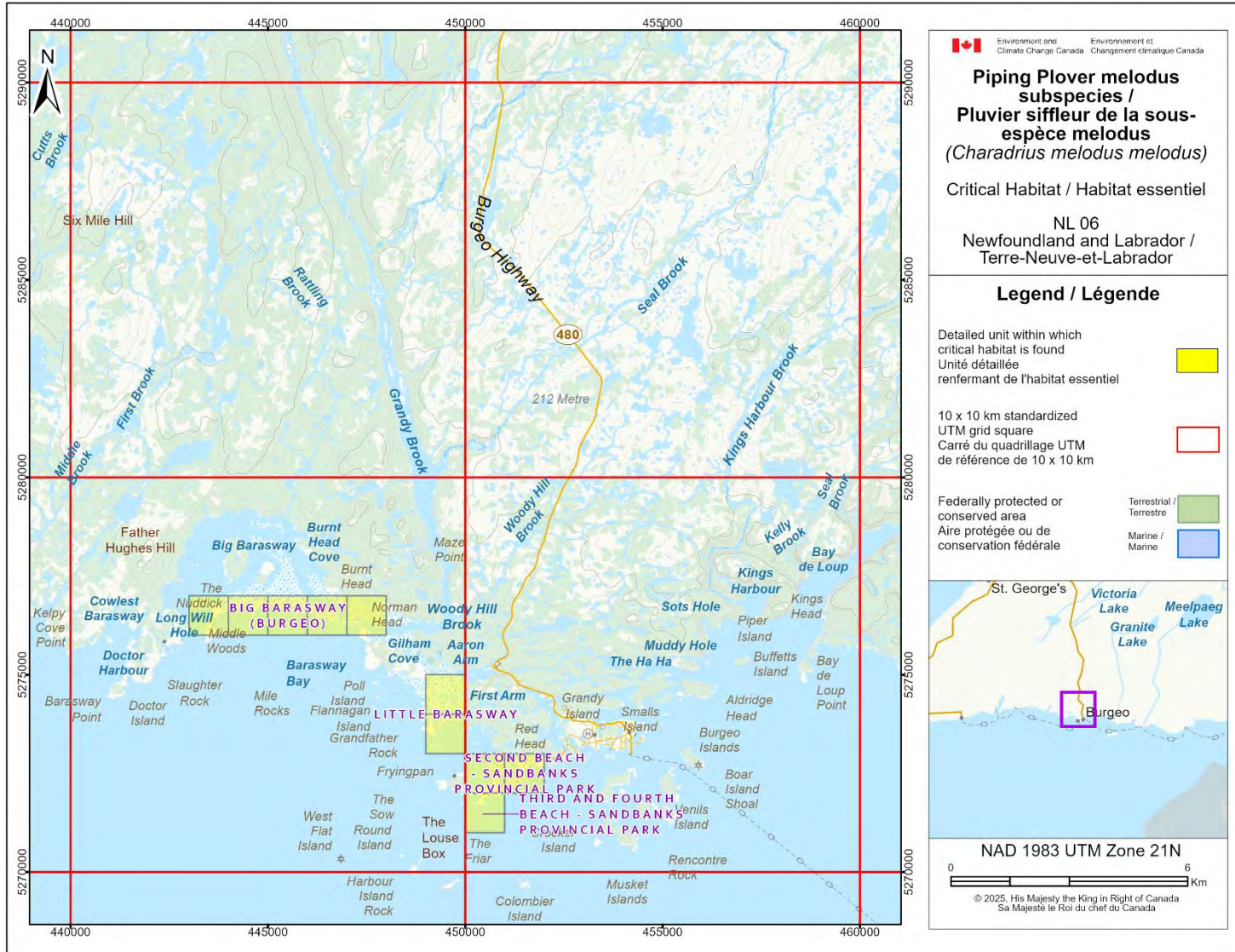
NL 03. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Newfoundland and Labrador. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



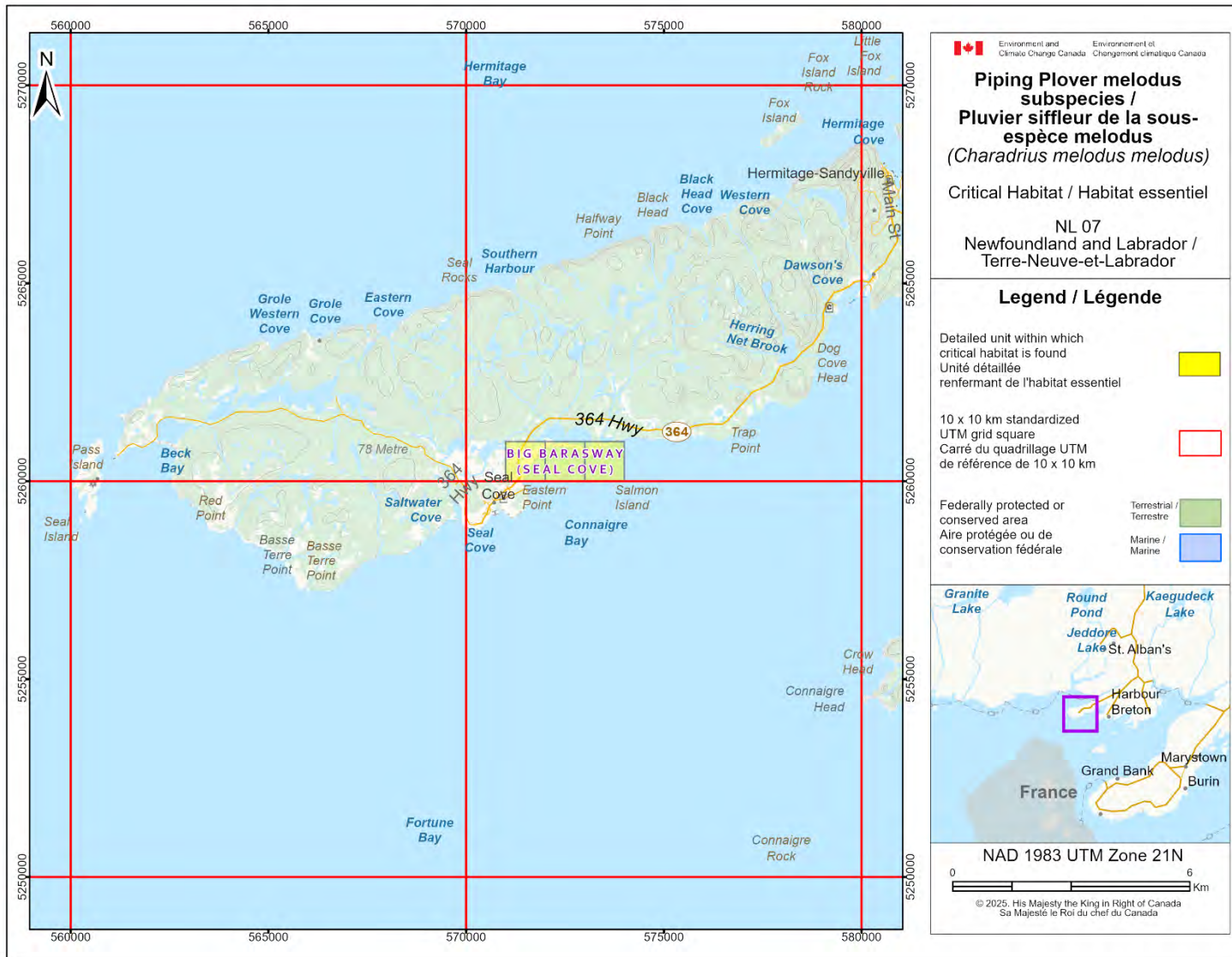
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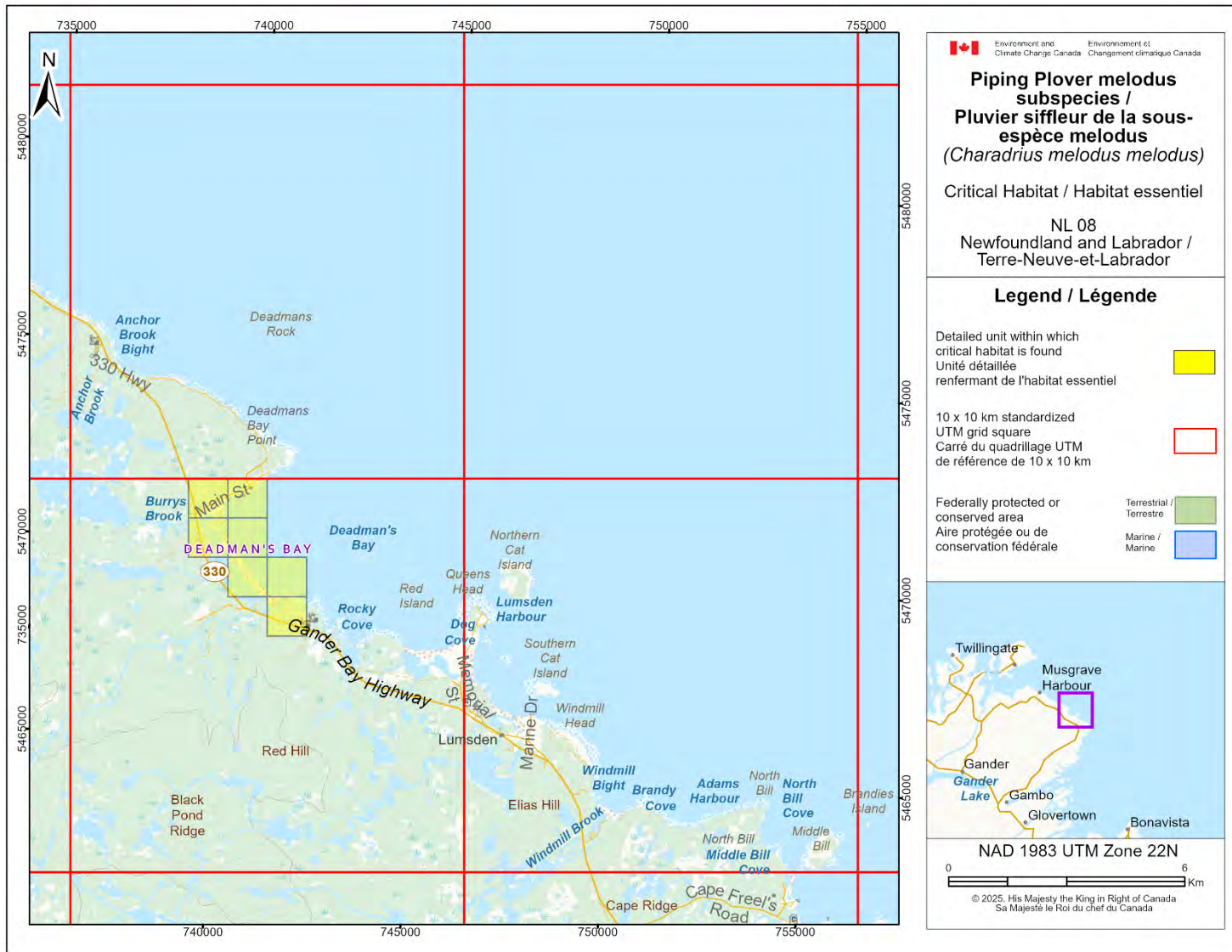
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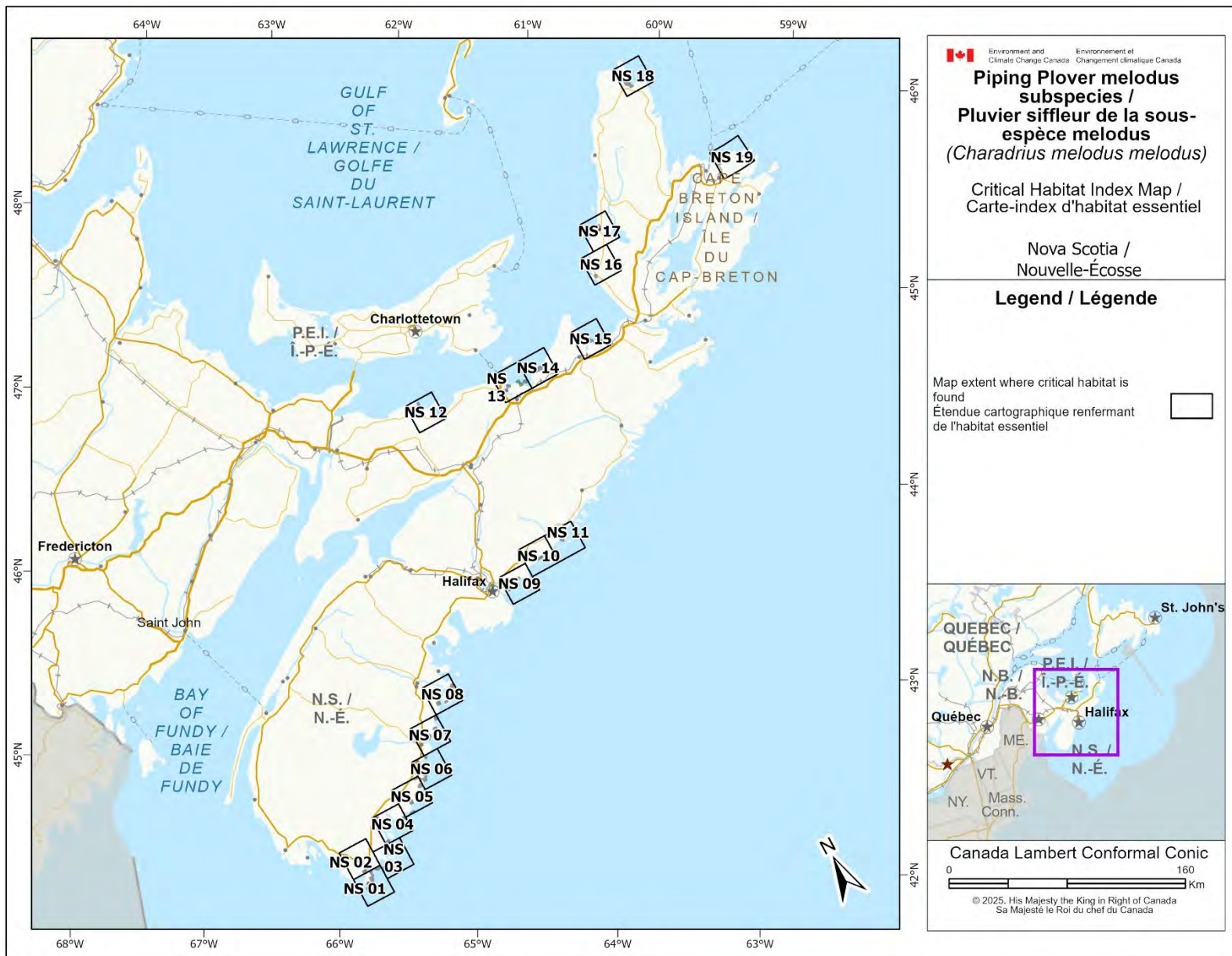
NL 06. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Newfoundland and Labrador. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



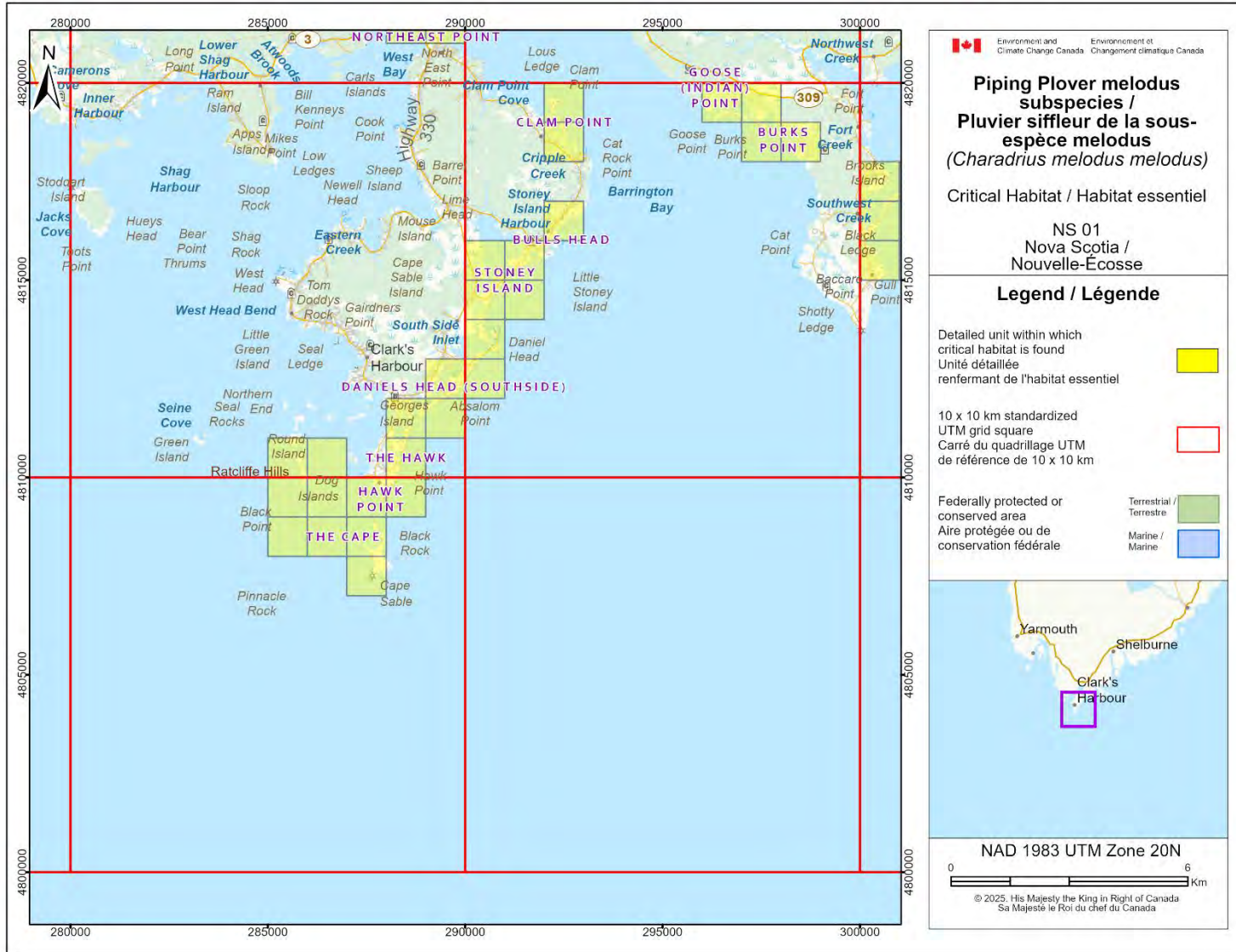
NL 07. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Newfoundland and Labrador. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



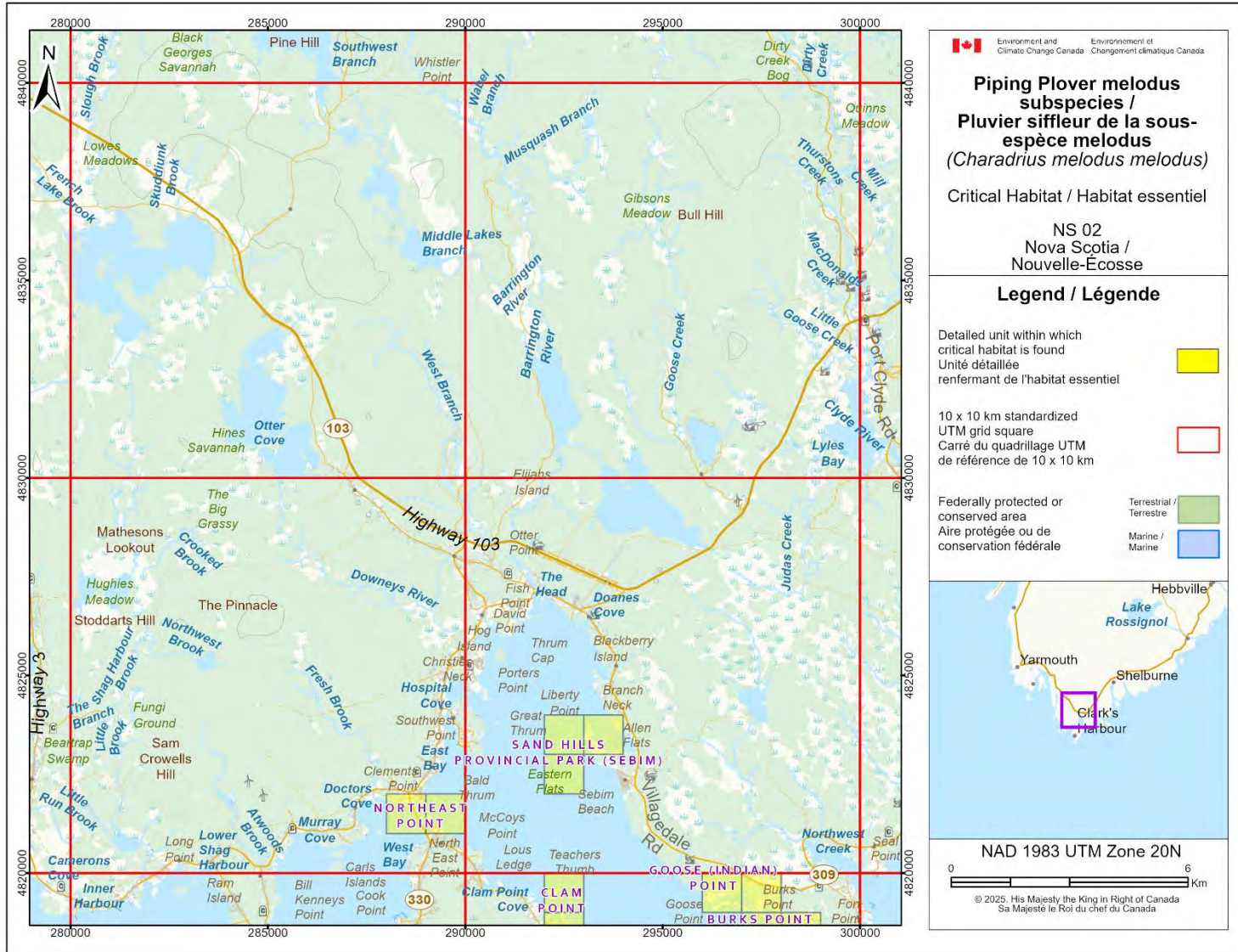
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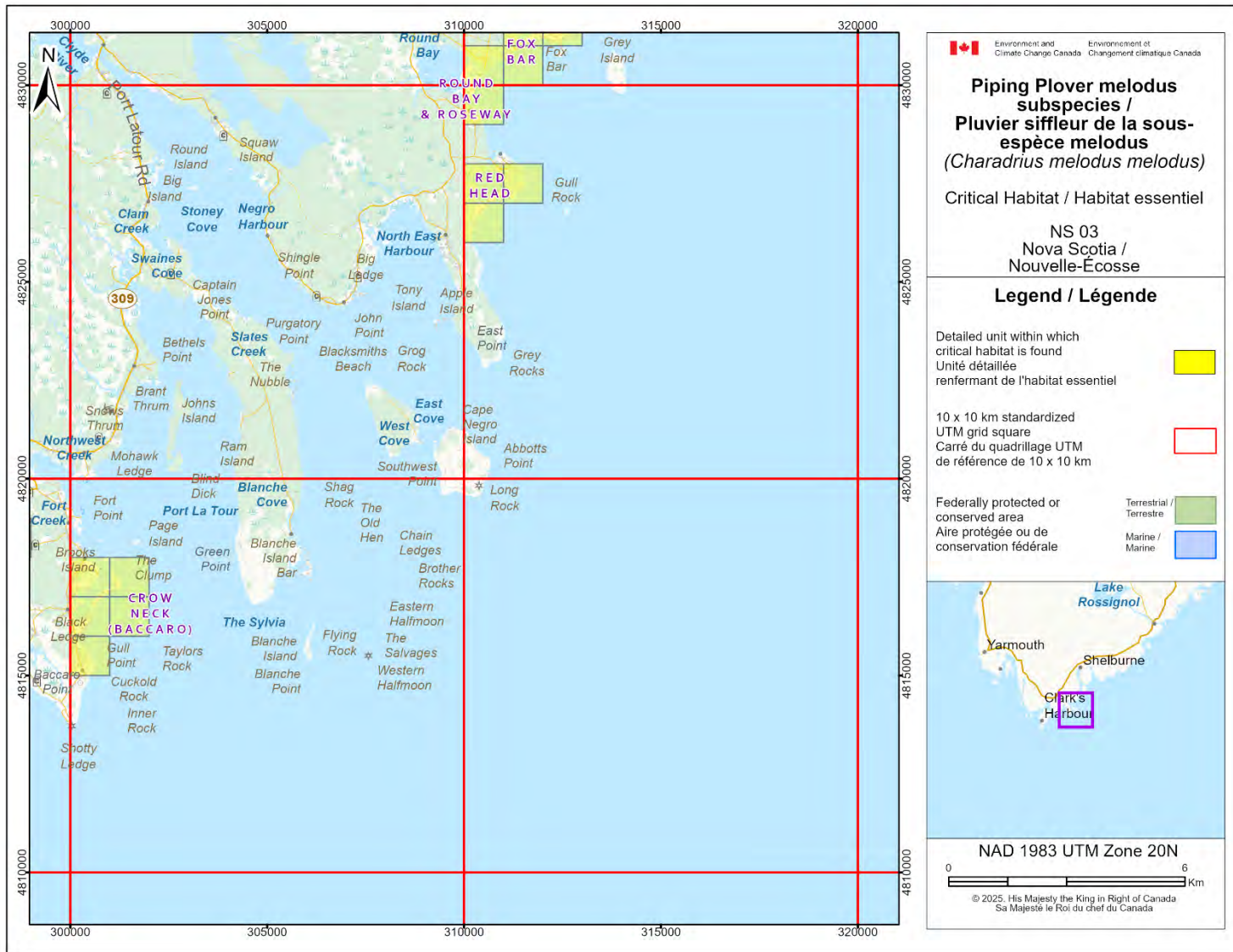
Index 03. Overview index map of critical habitat for Piping Plover *melodus* subspecies in Nova Scotia.



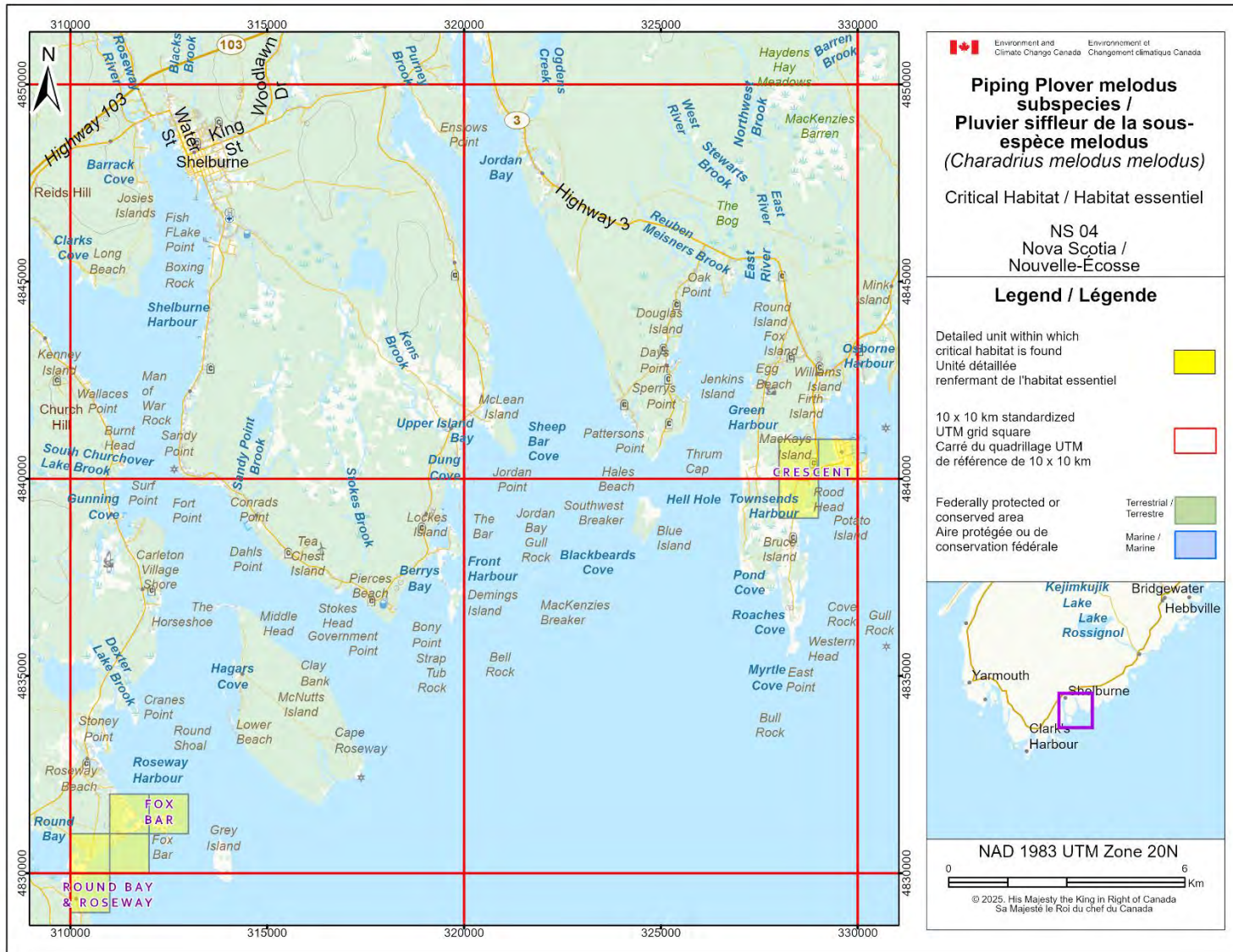
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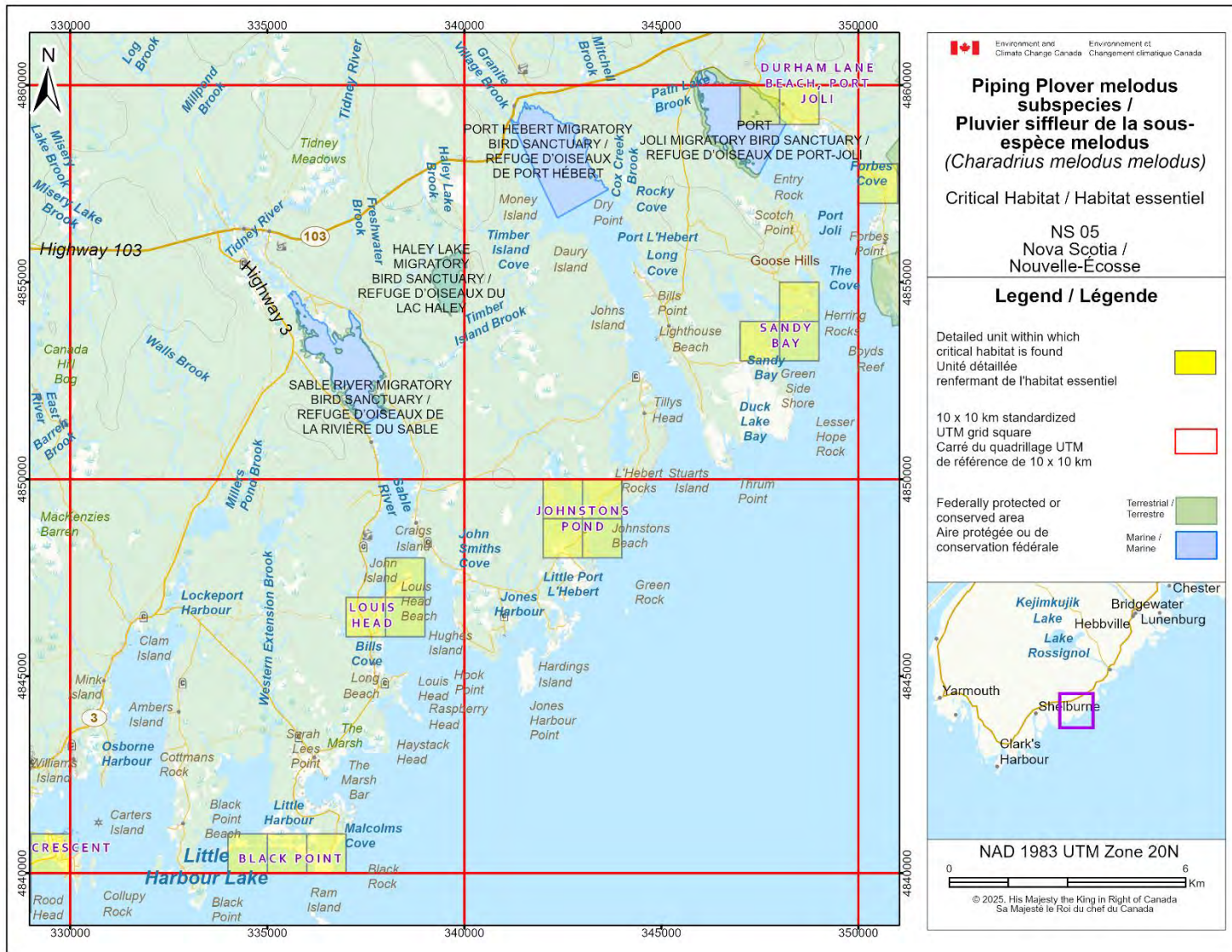
NS 02. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



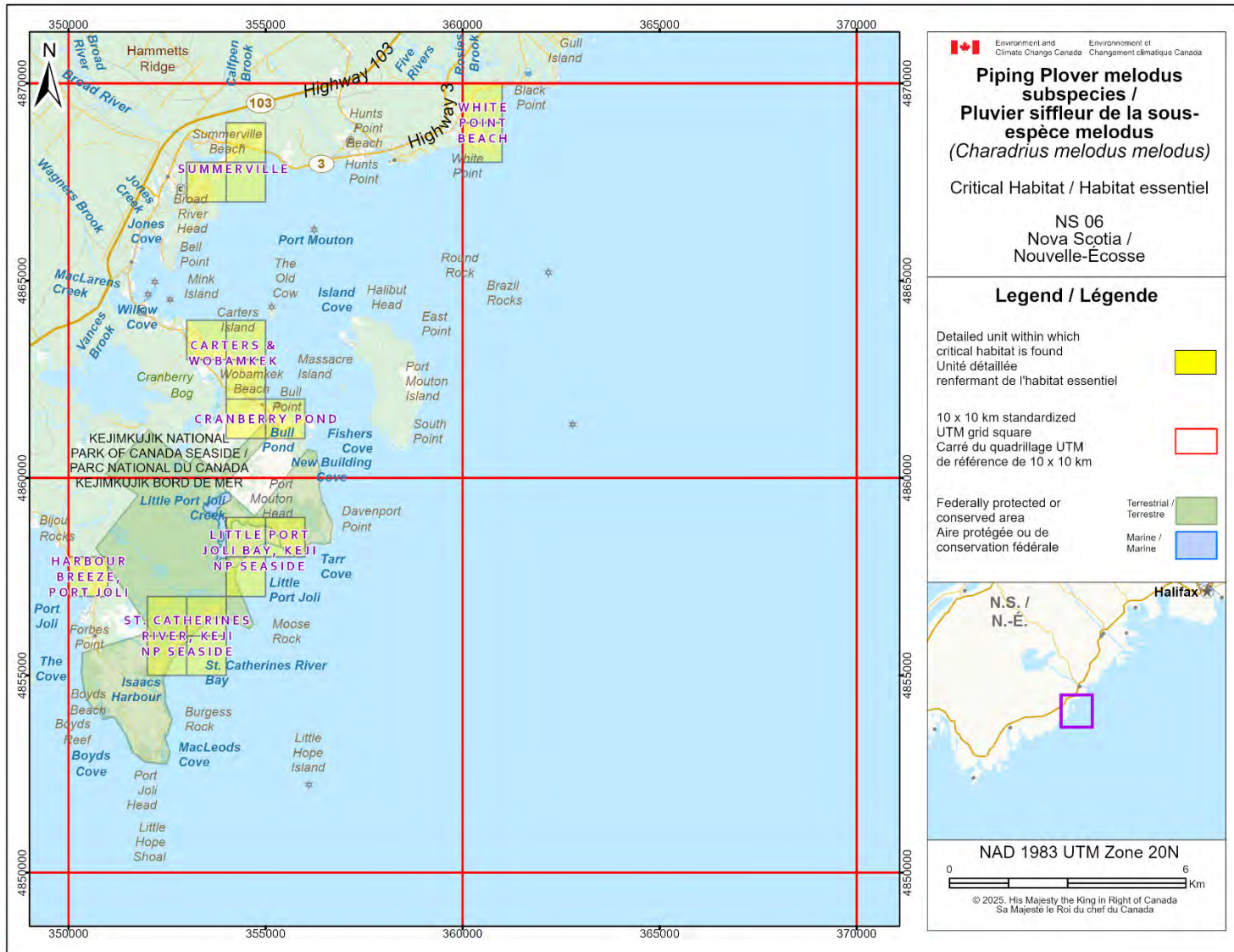
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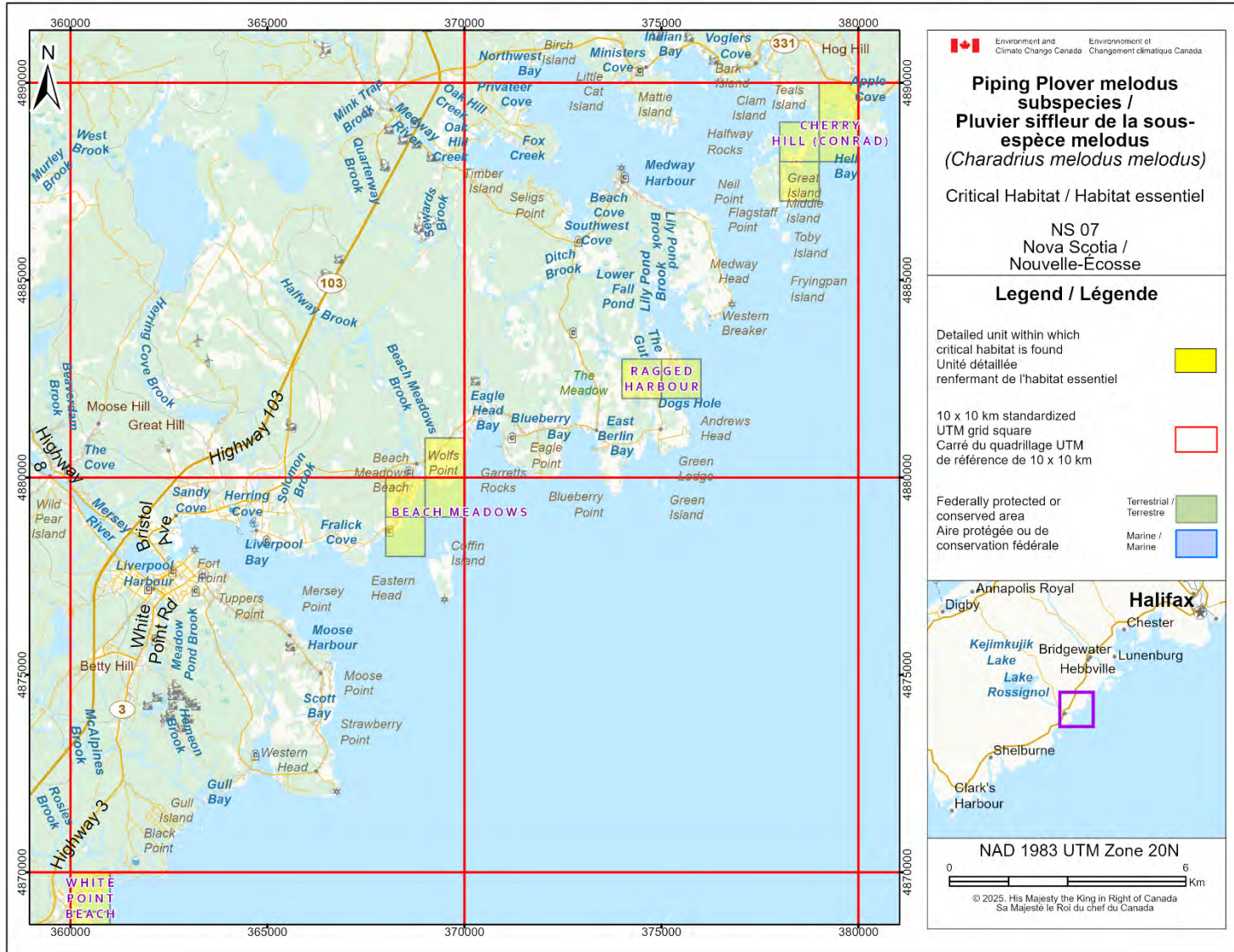
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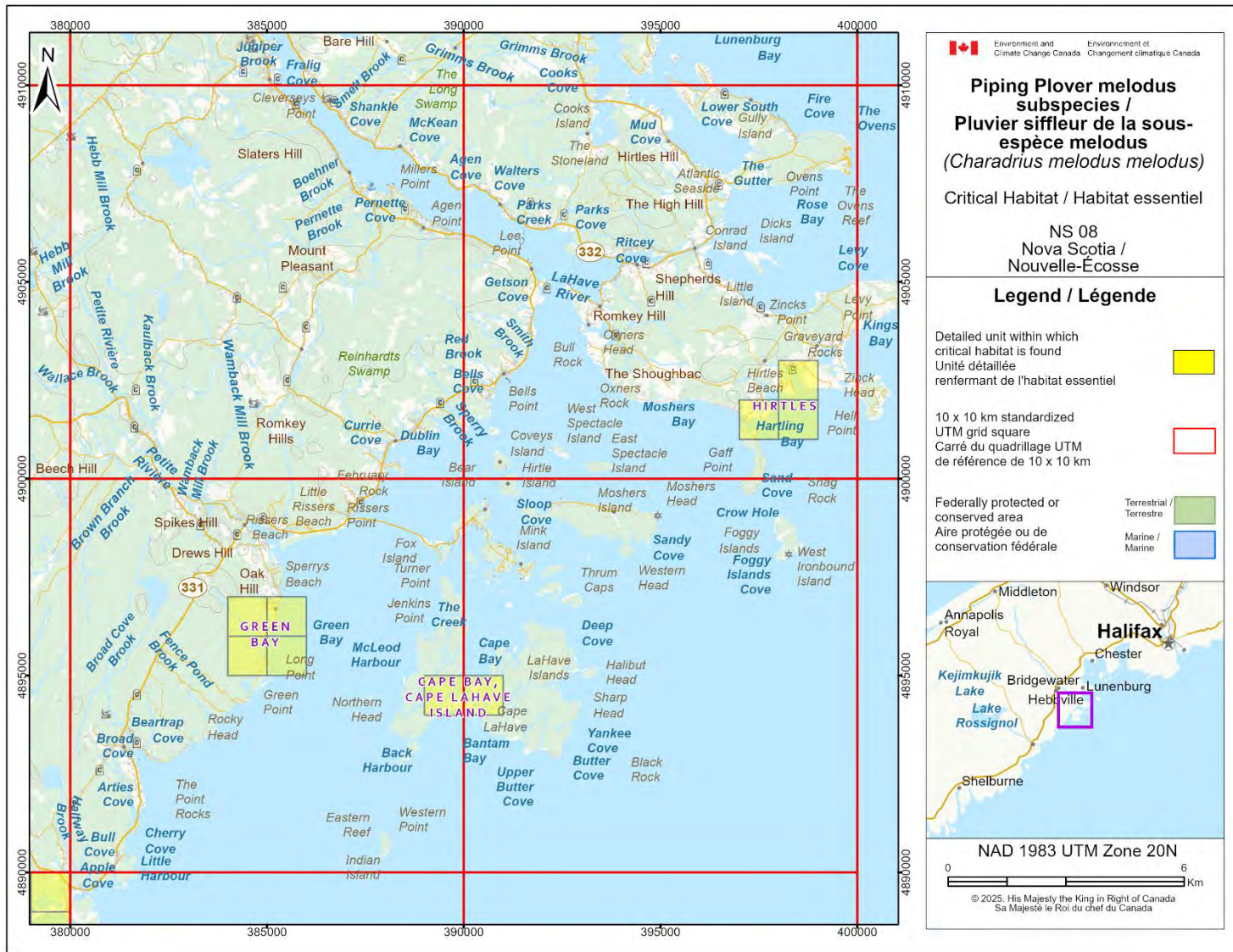
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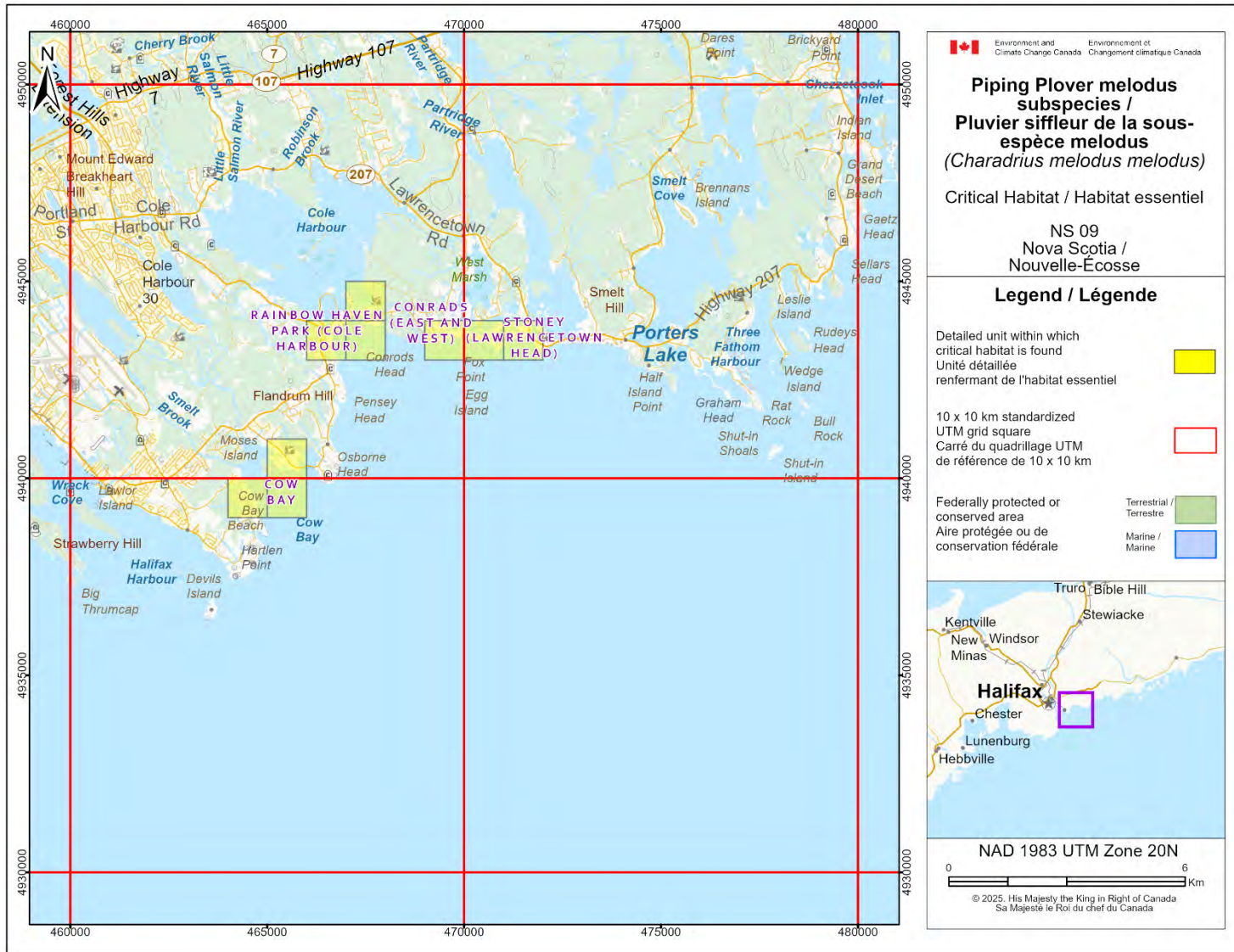
NS 06. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



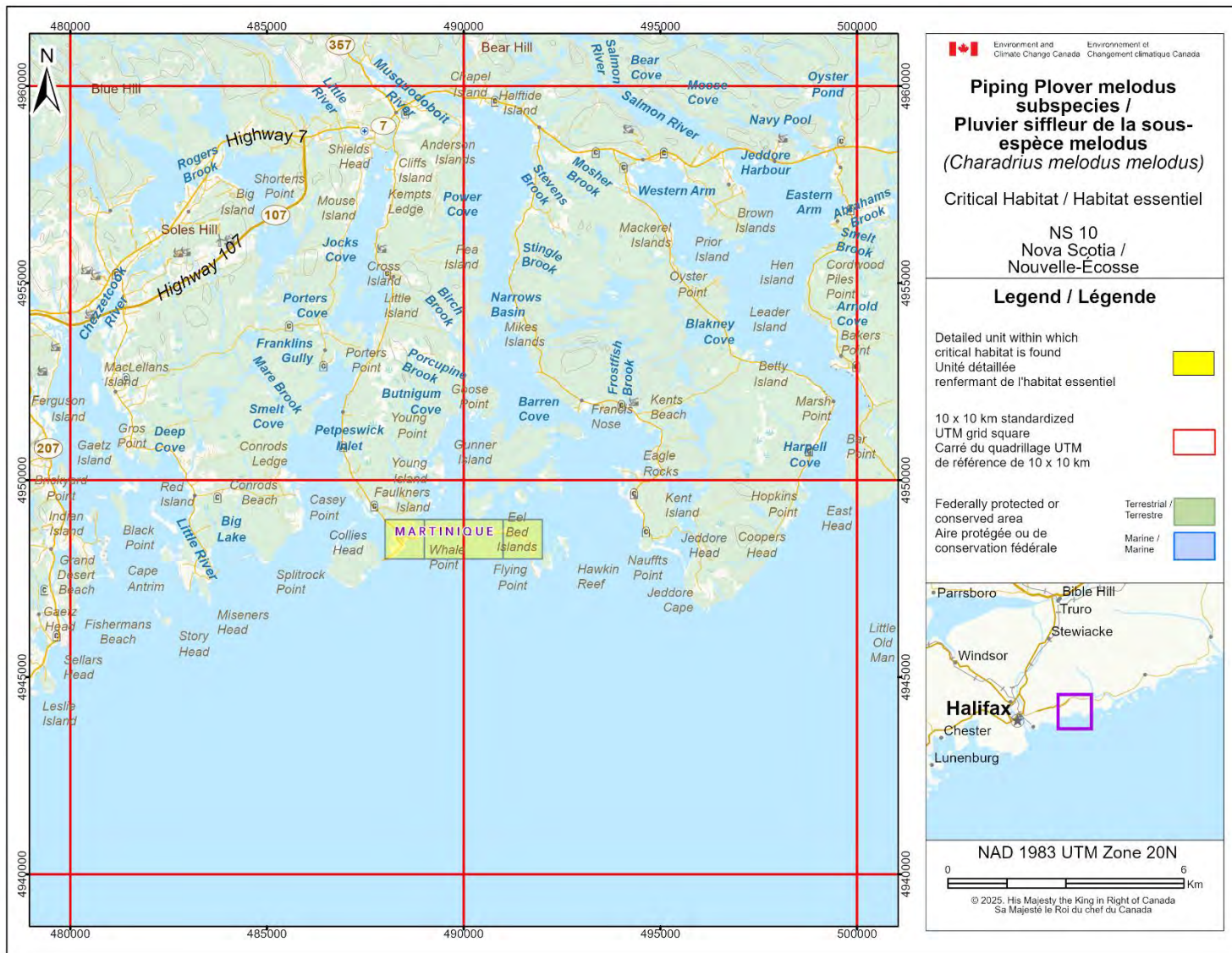
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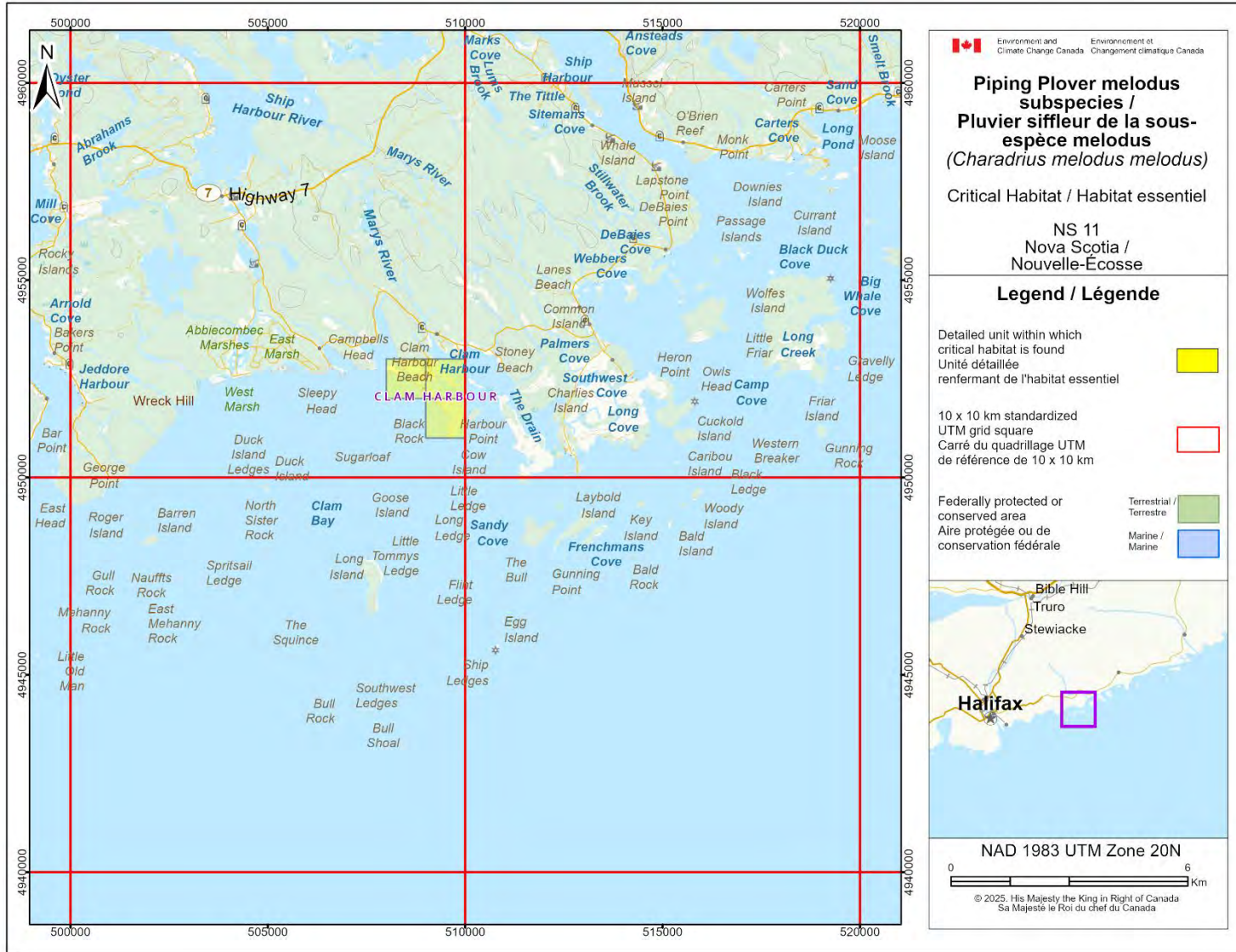
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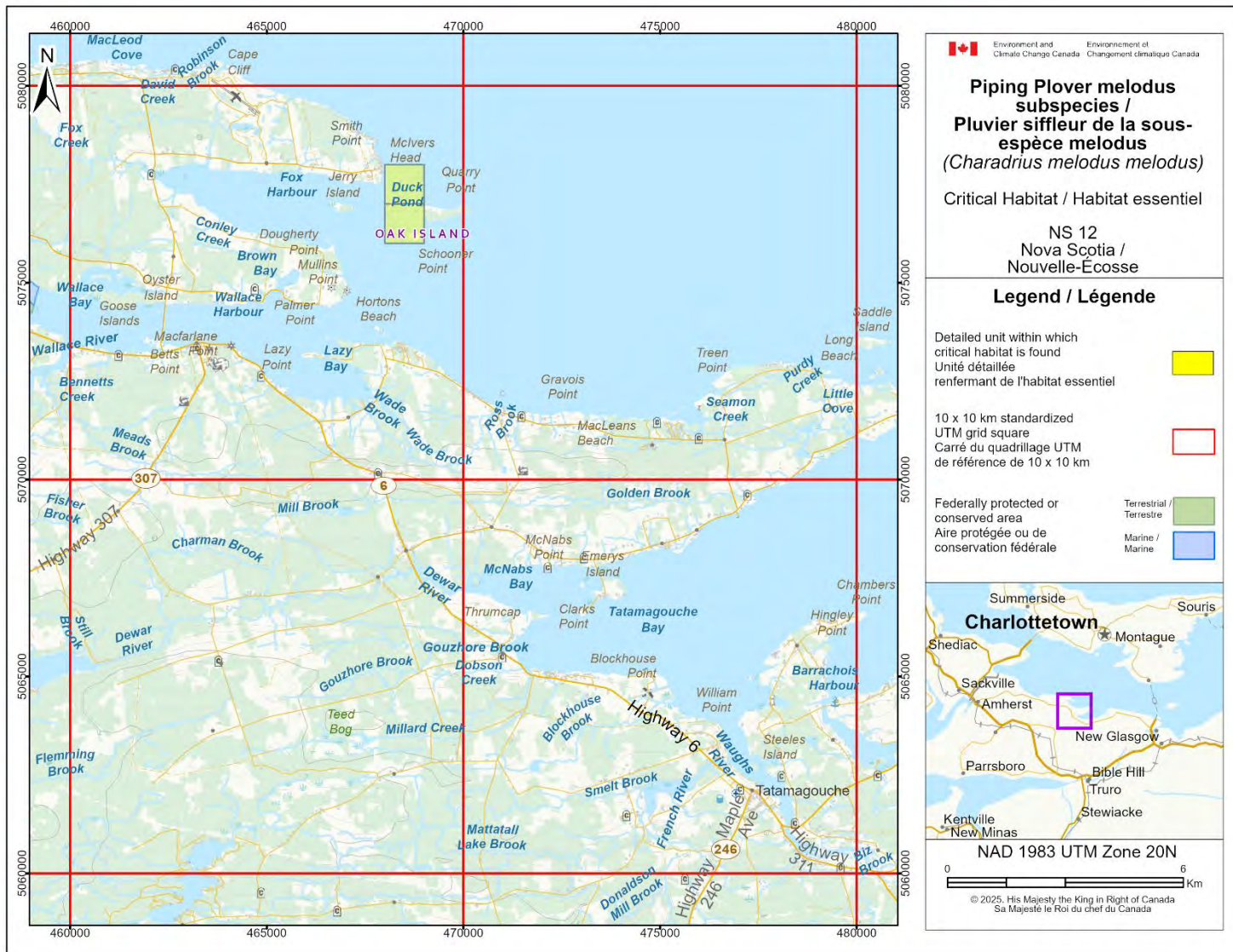
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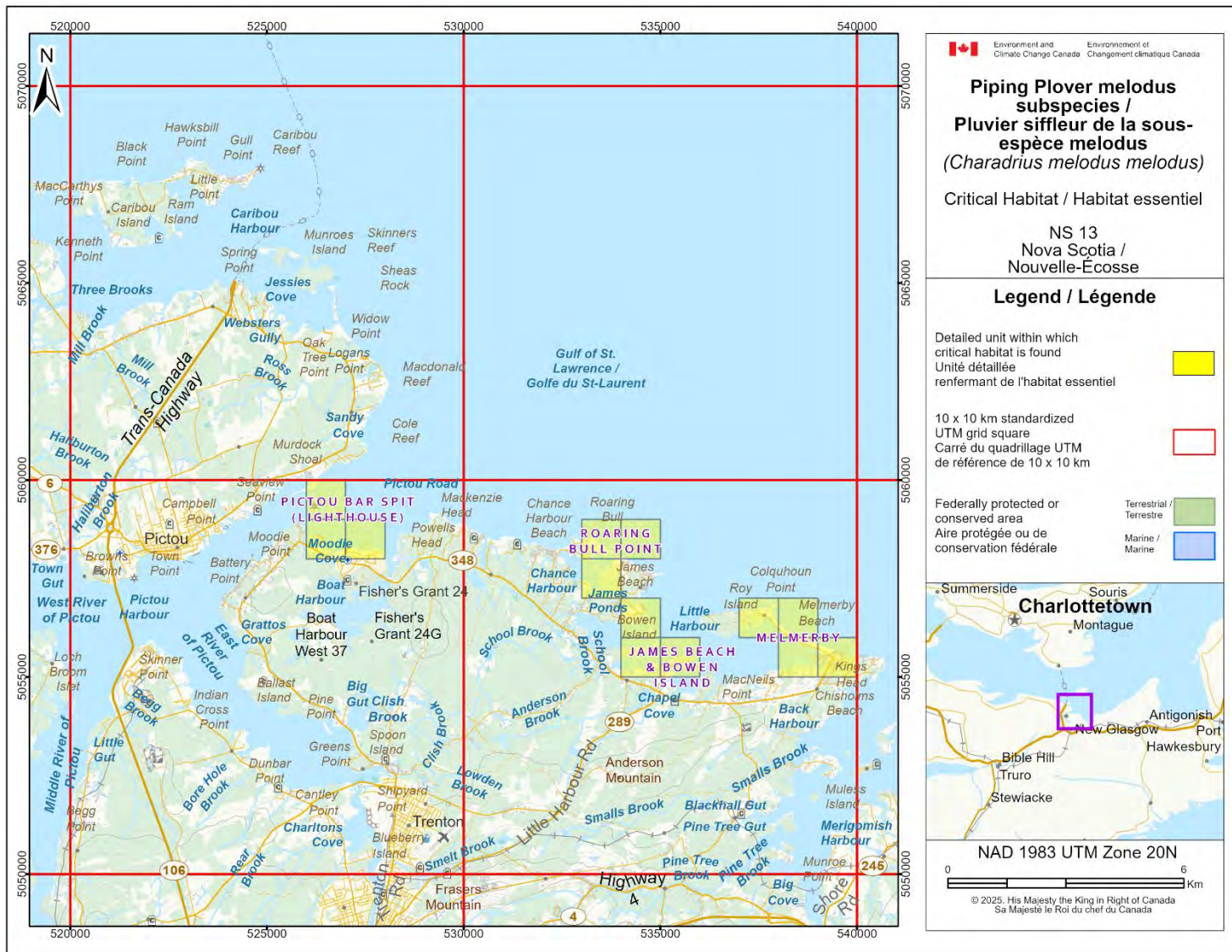
NS 10. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



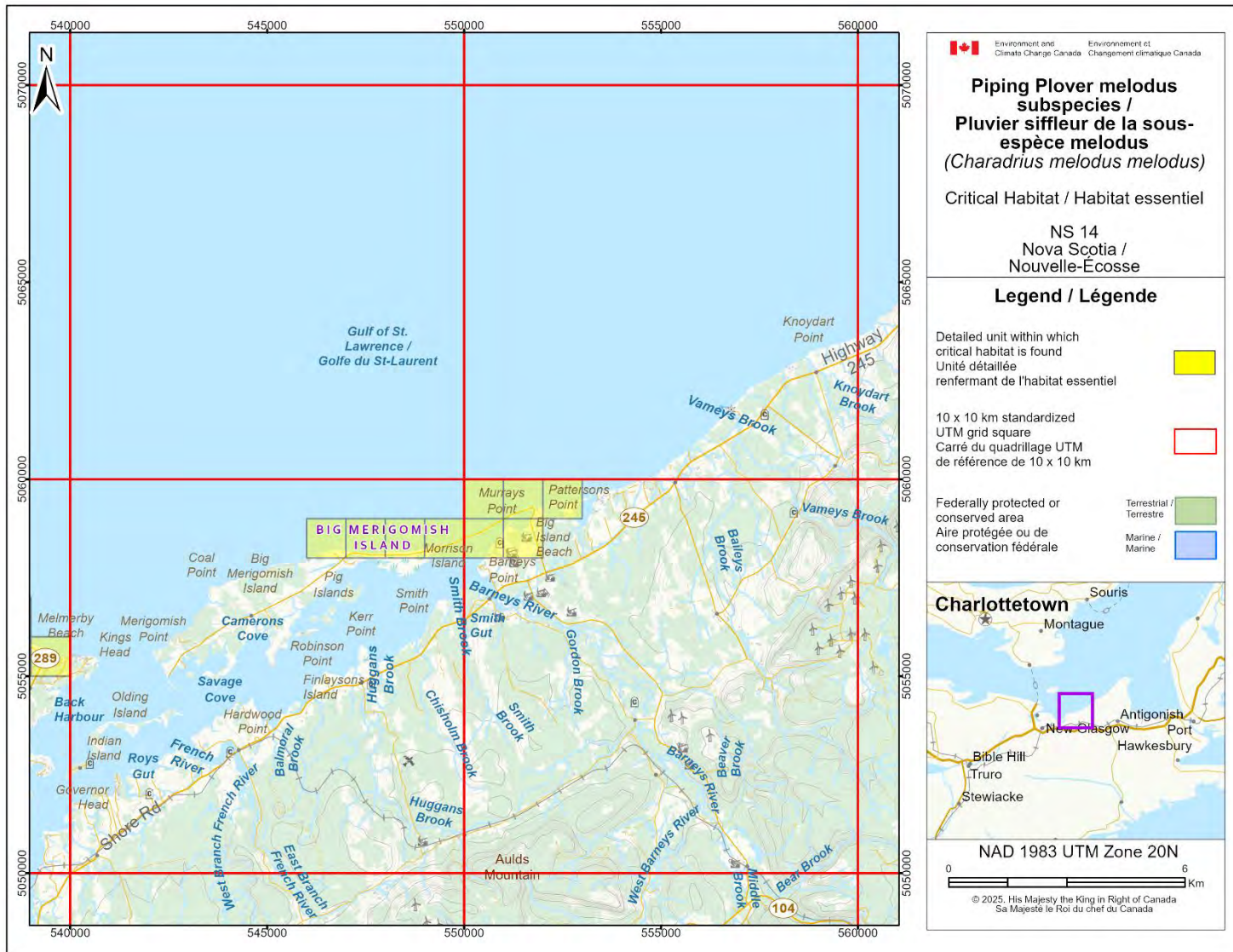
NS 11. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



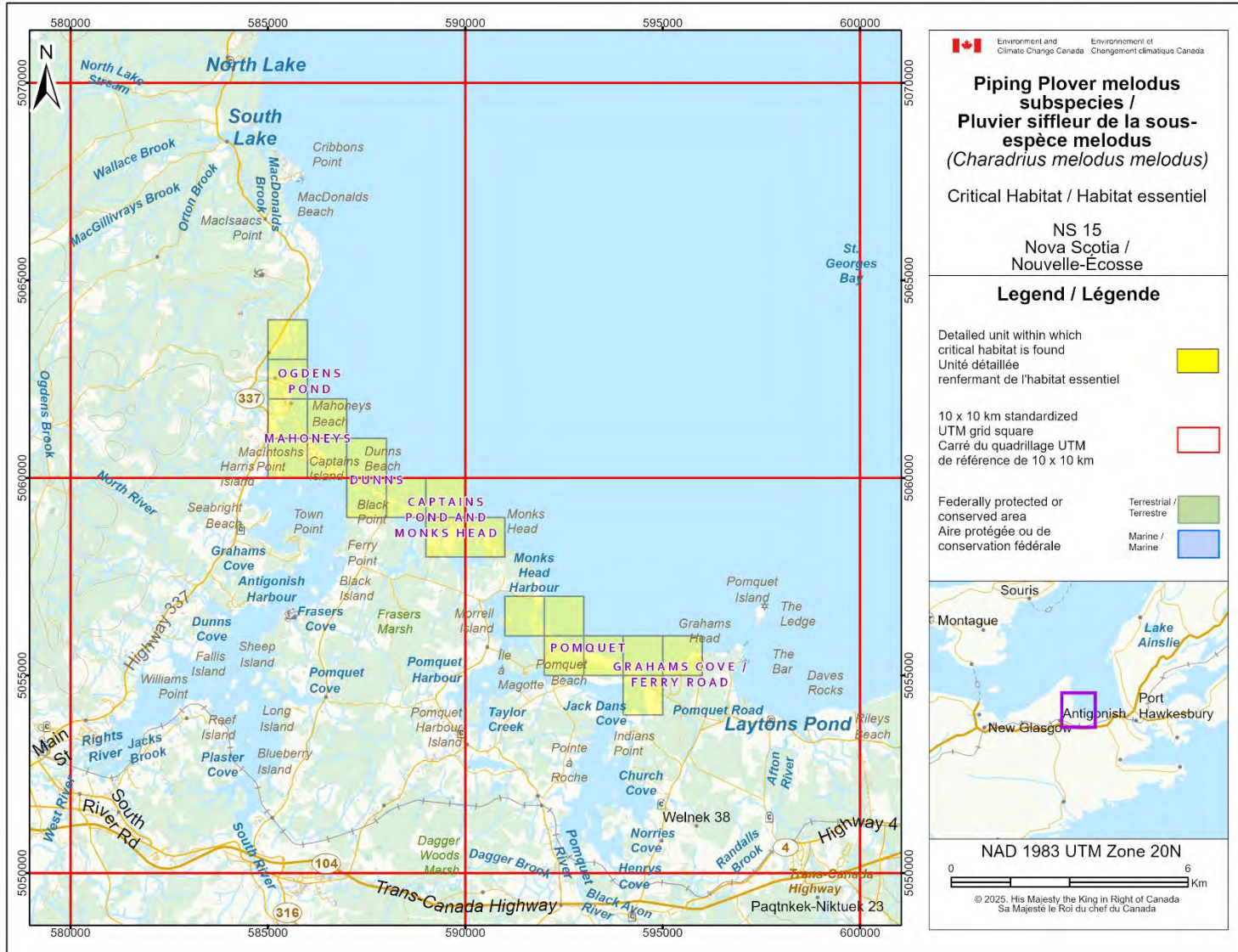
NS 12. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



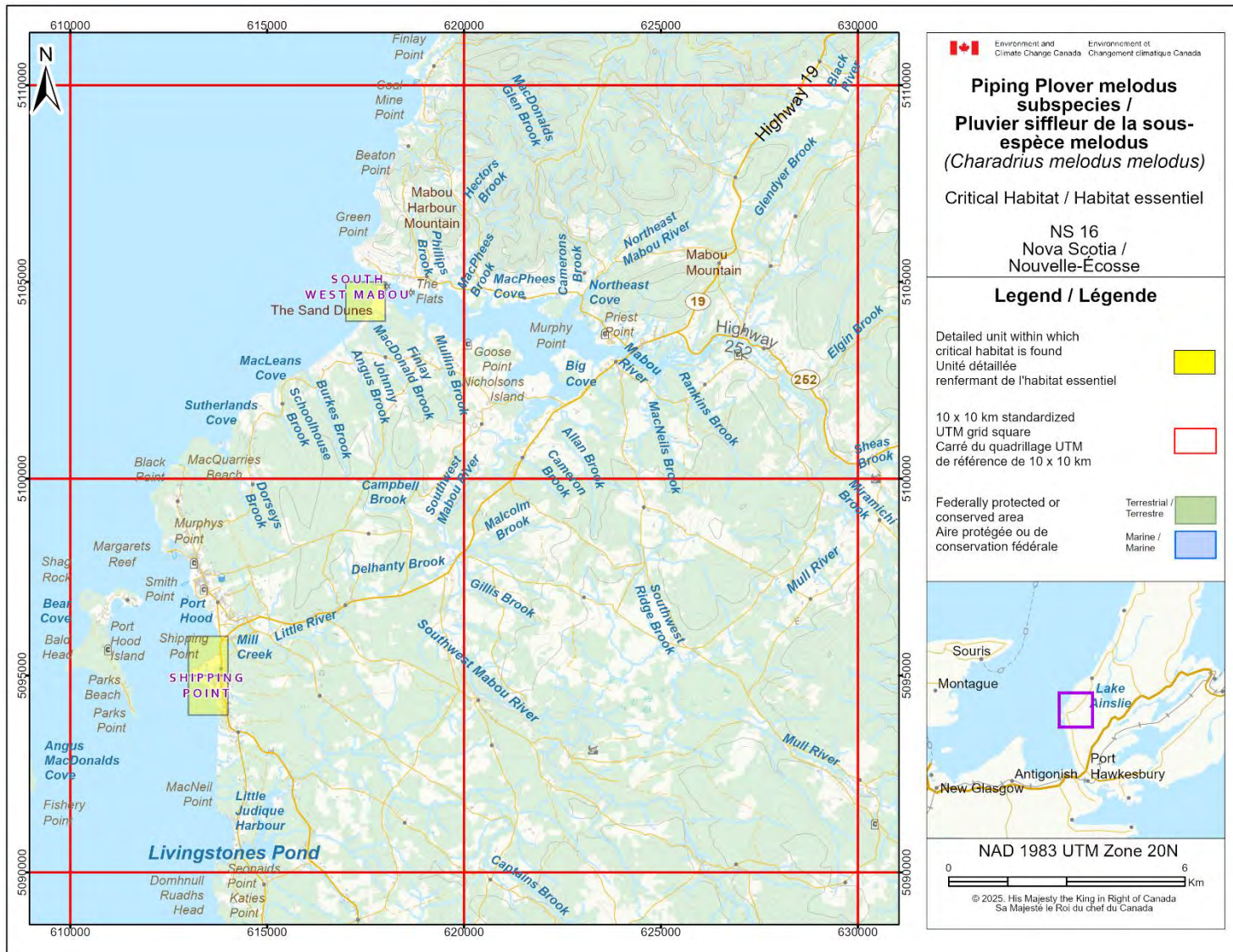
NS 13. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



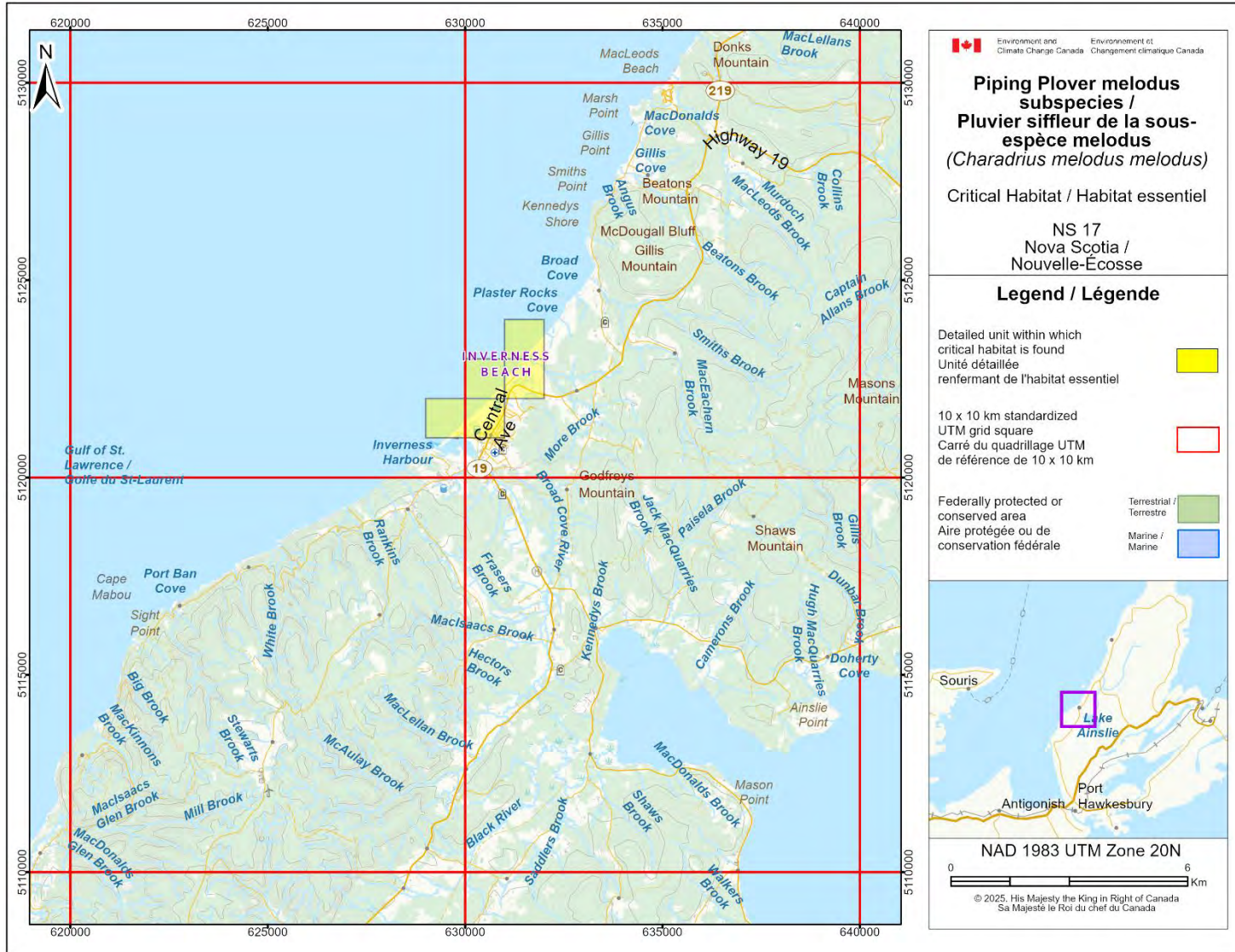
NS 14. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



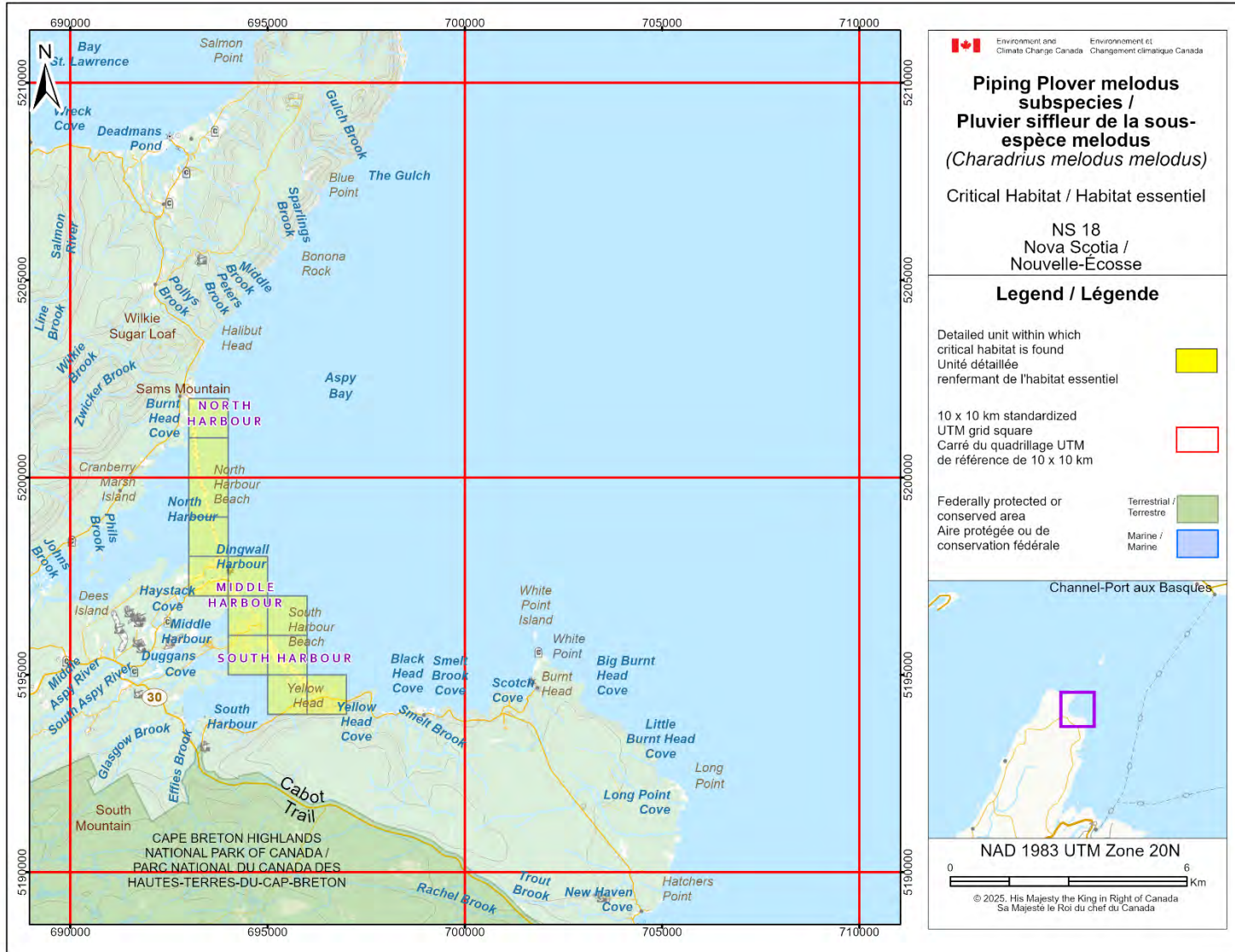
NS 15. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



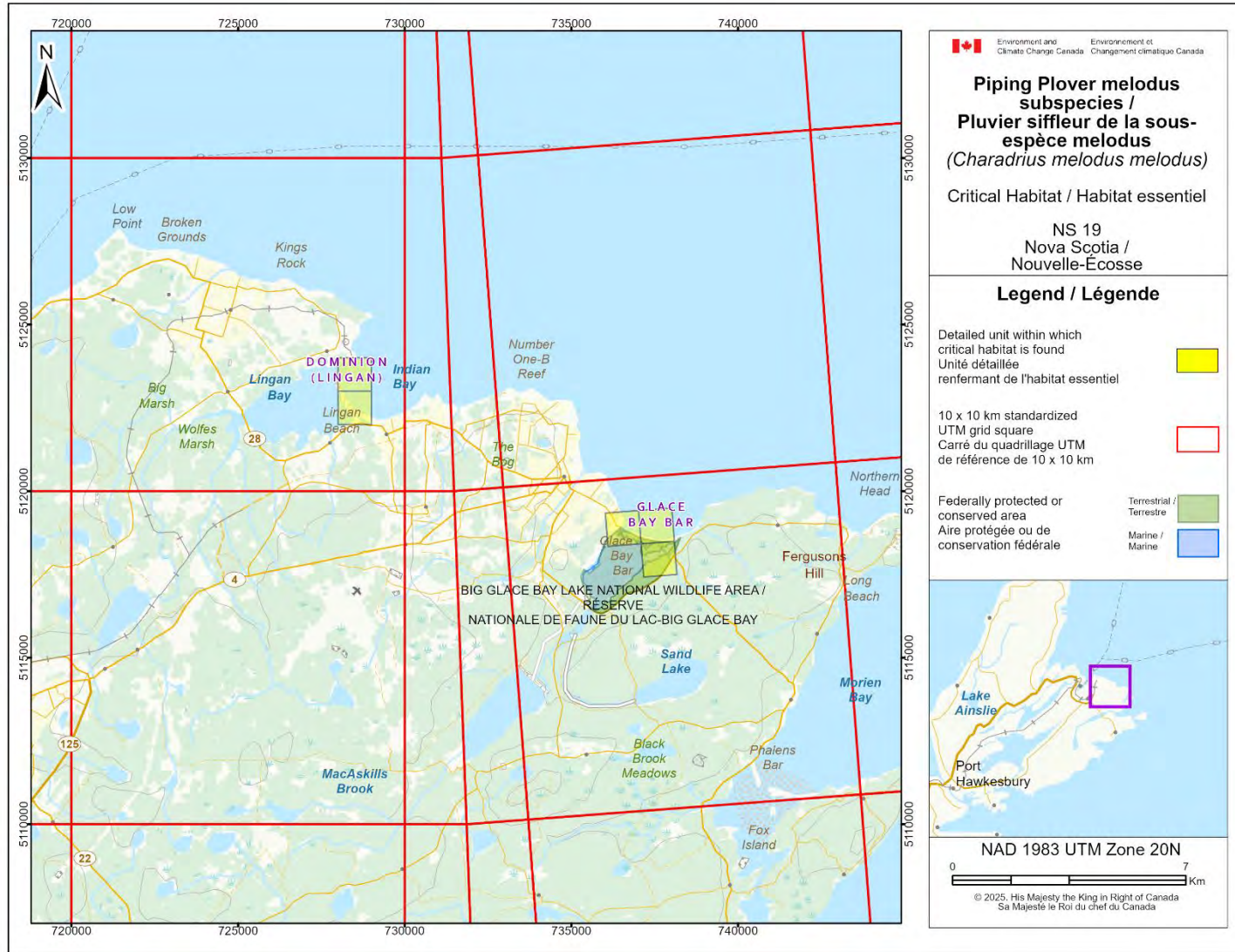
NS 16. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



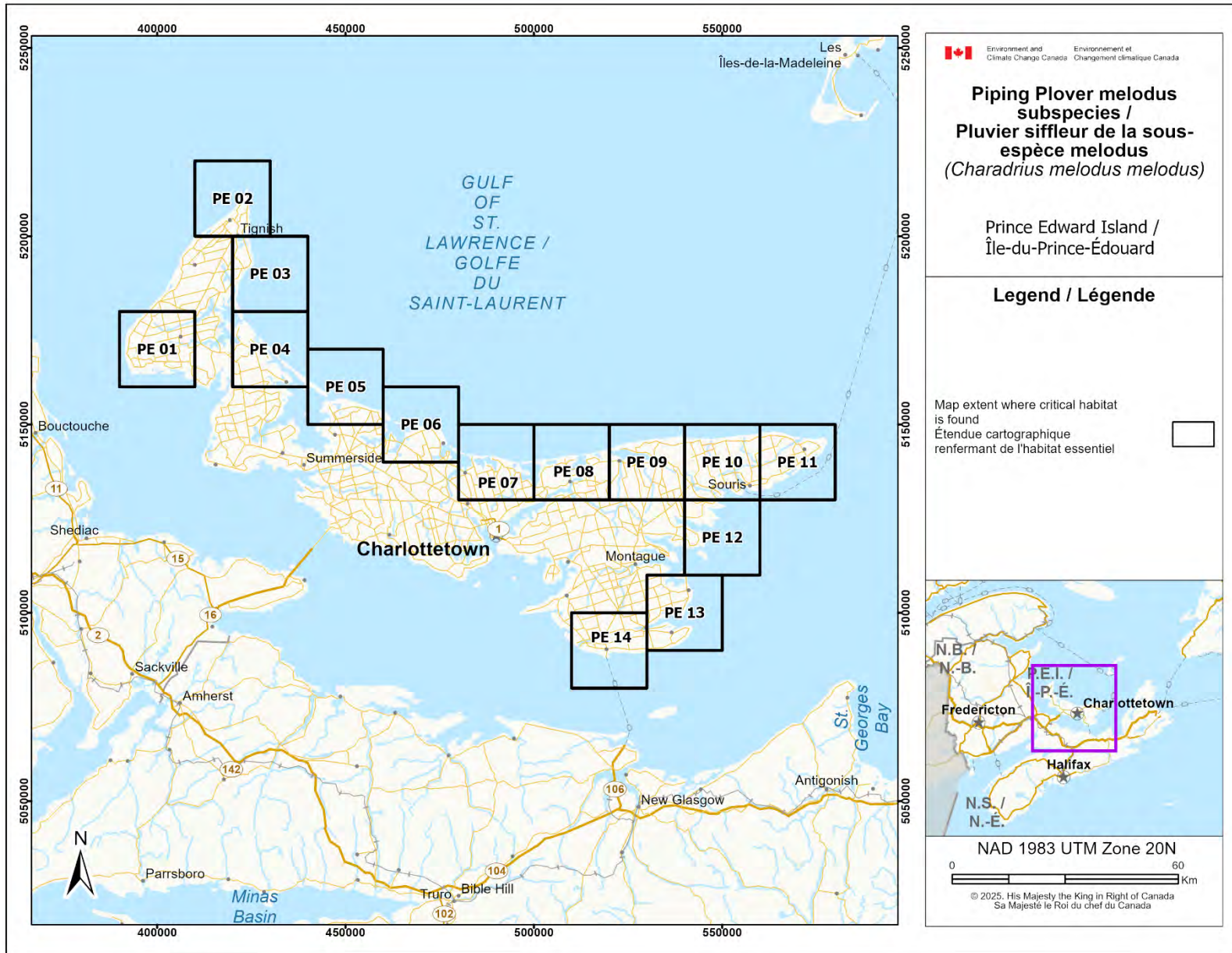
NS 17. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



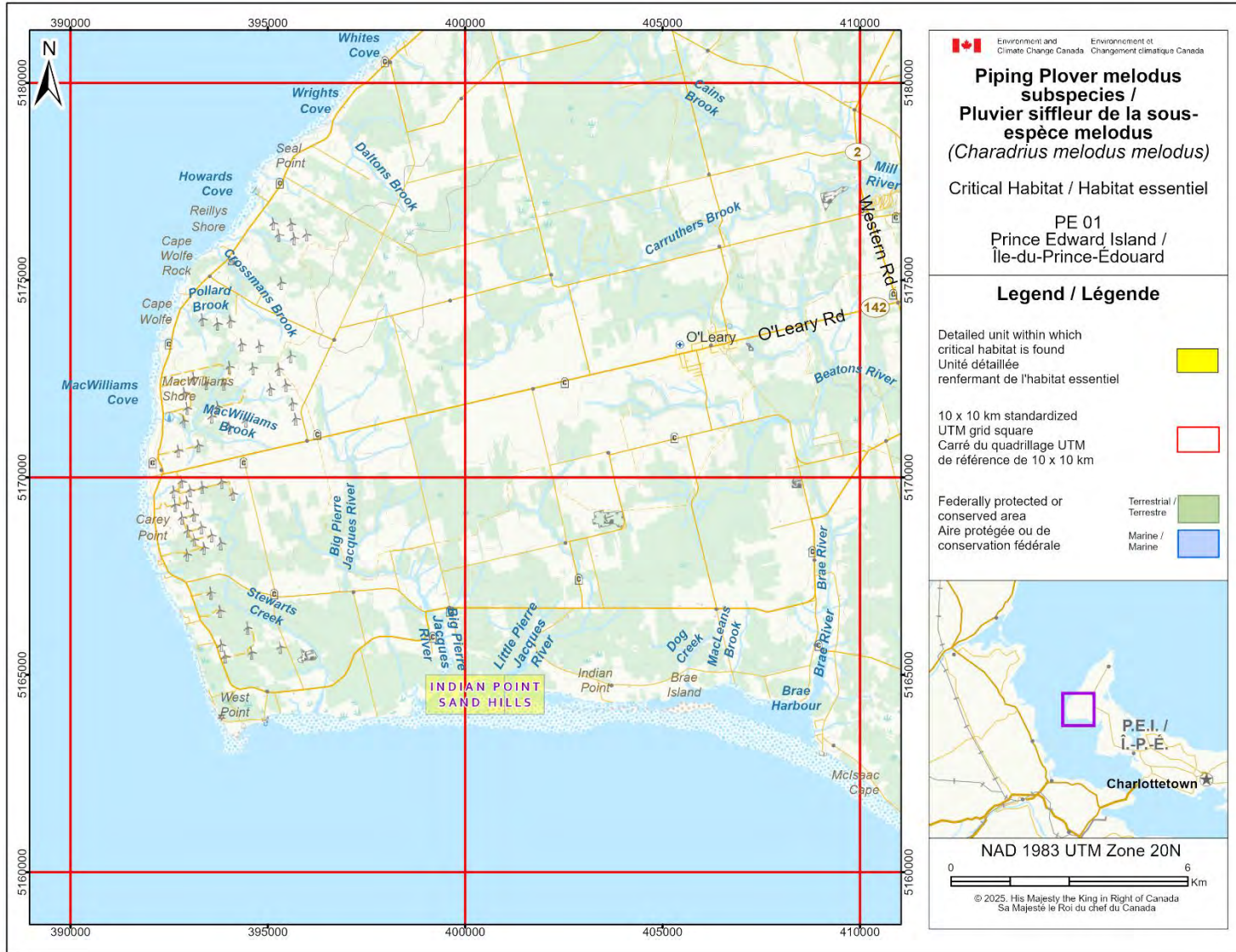
NS 18. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



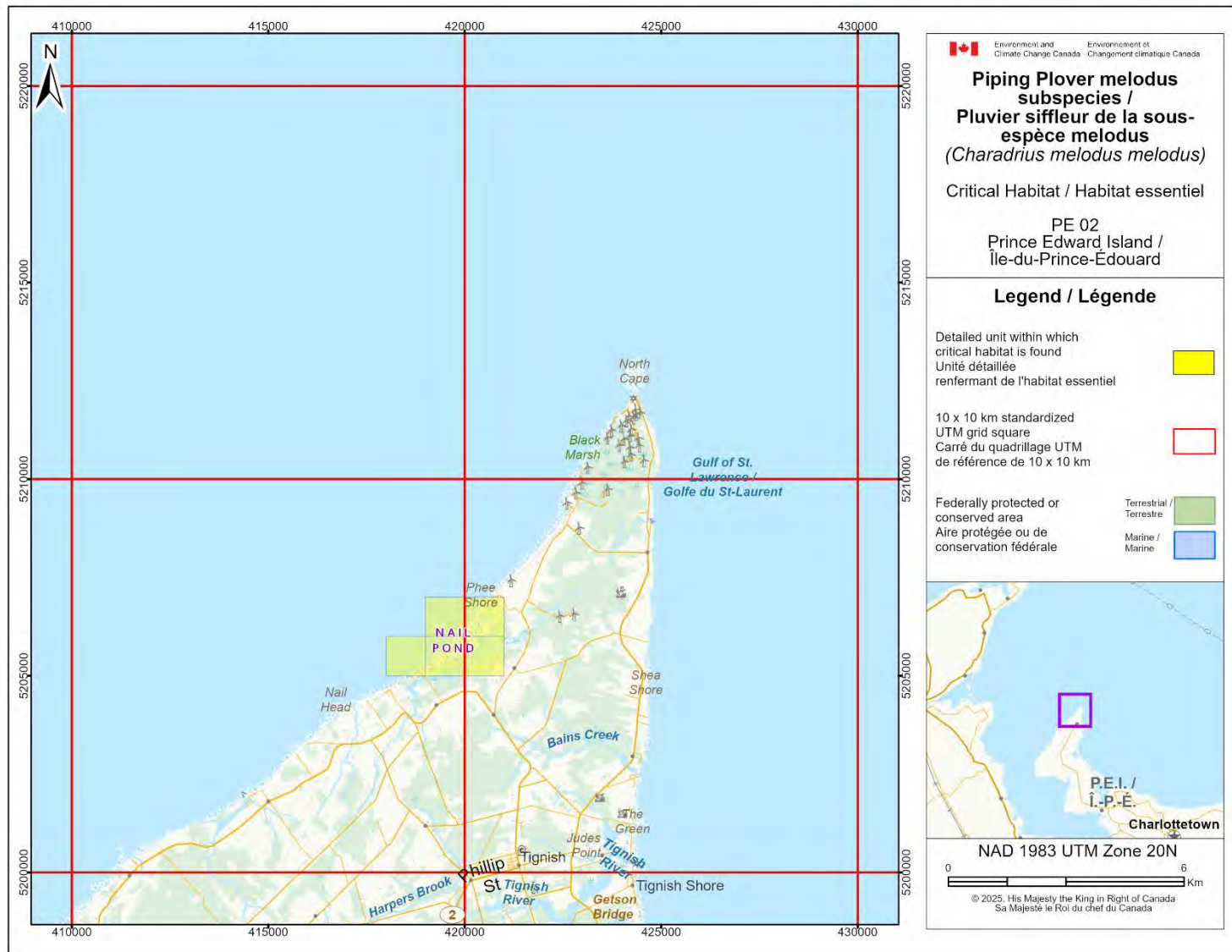
NS 19. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Nova Scotia. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update. The geographic location of NS19, the UTM zone transitions from 20N to 21N across the breadth of the map. This change in UTM Zone is seen as a wedge in the 10x10 UTM grid squares.



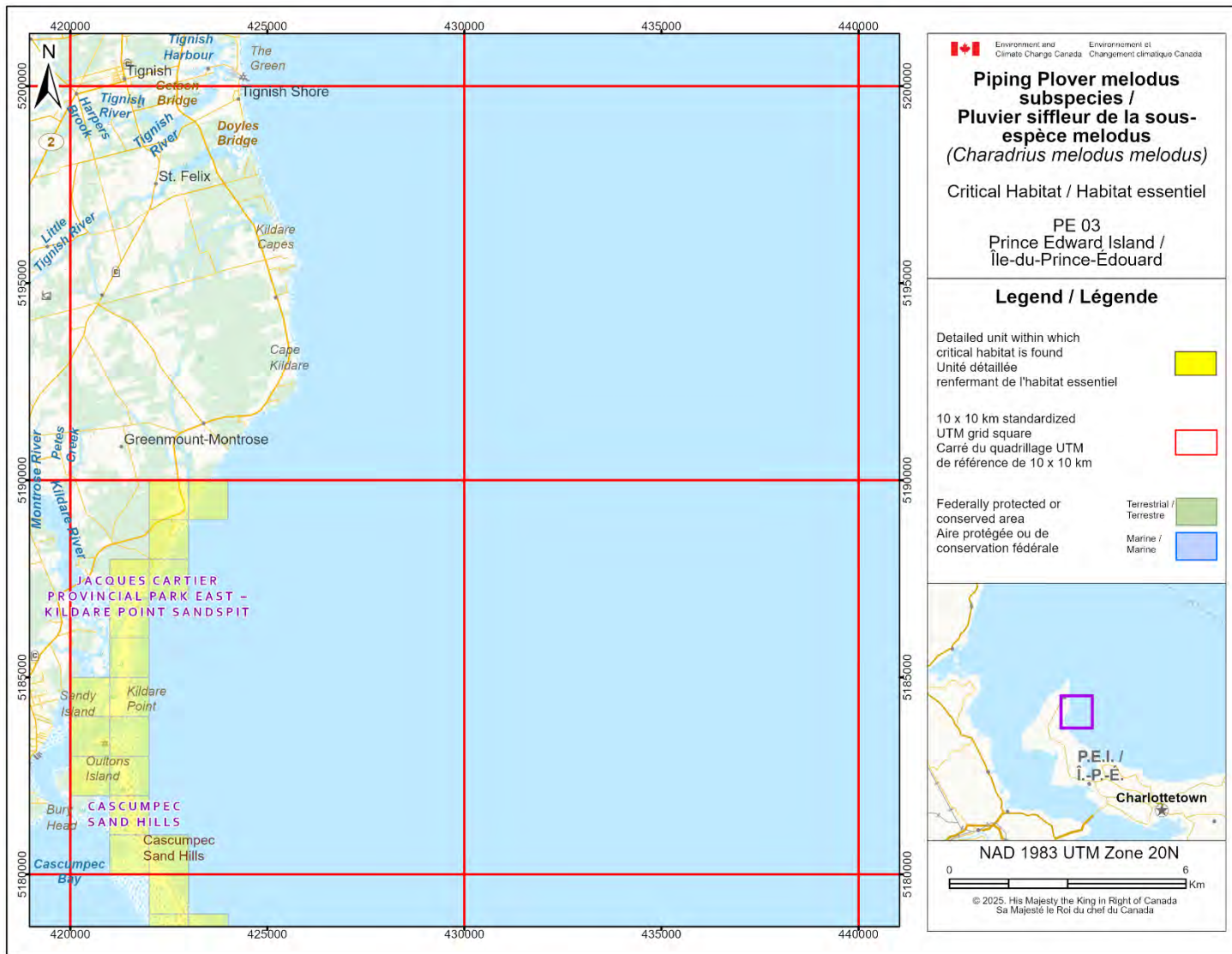
Index 04. Overview index map of critical habitat for Piping Plover *melodus* subspecies in Prince Edward Island.



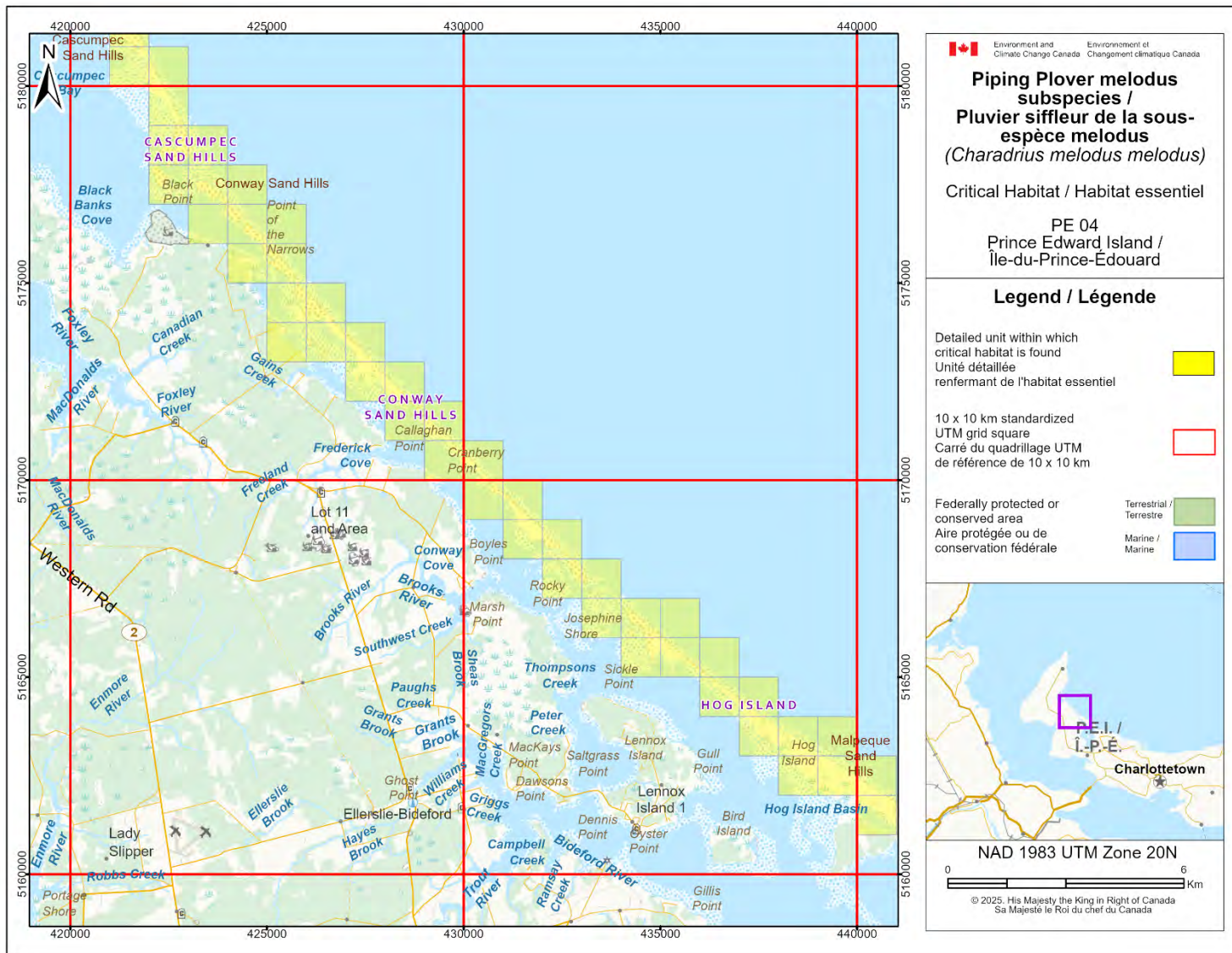
PE 01. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



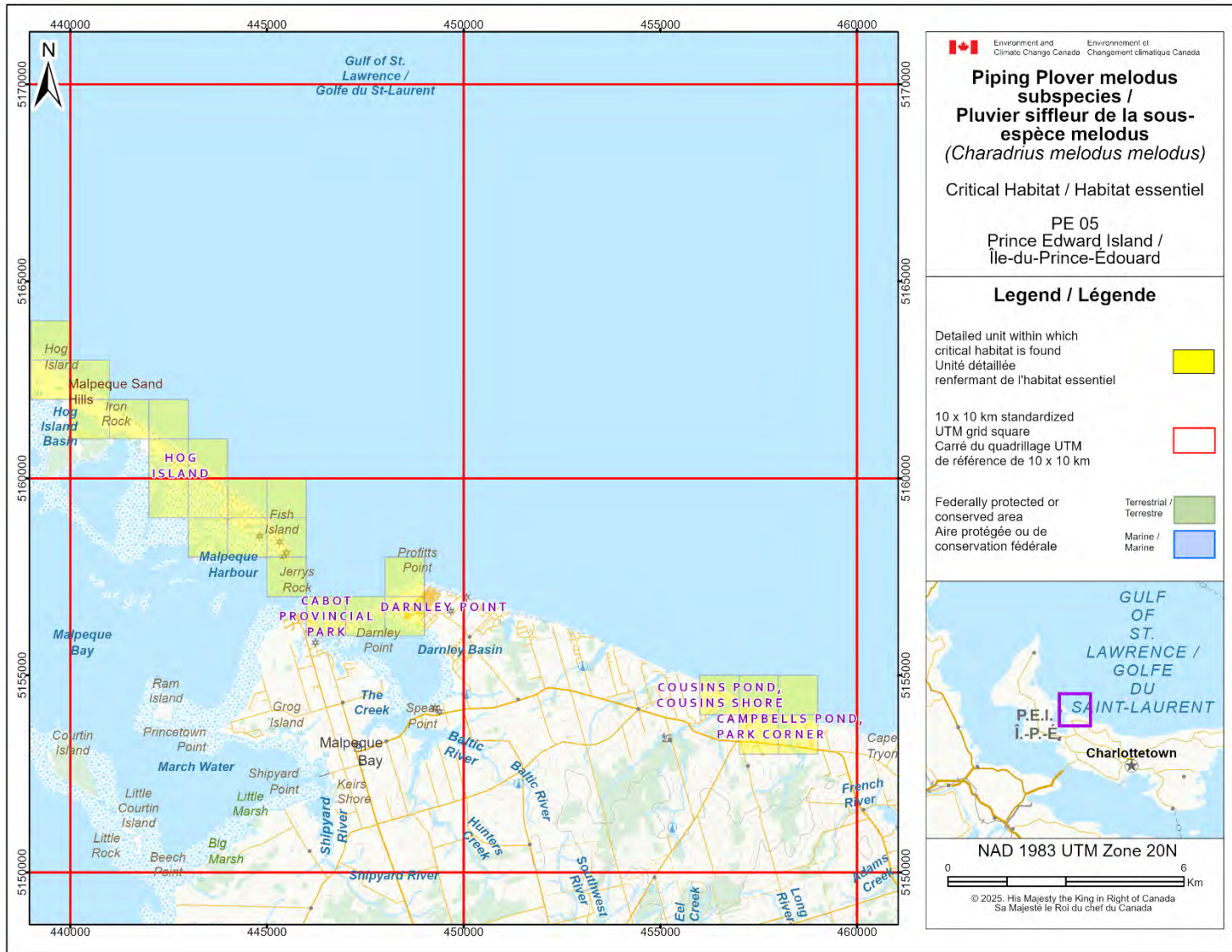
PE 02. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



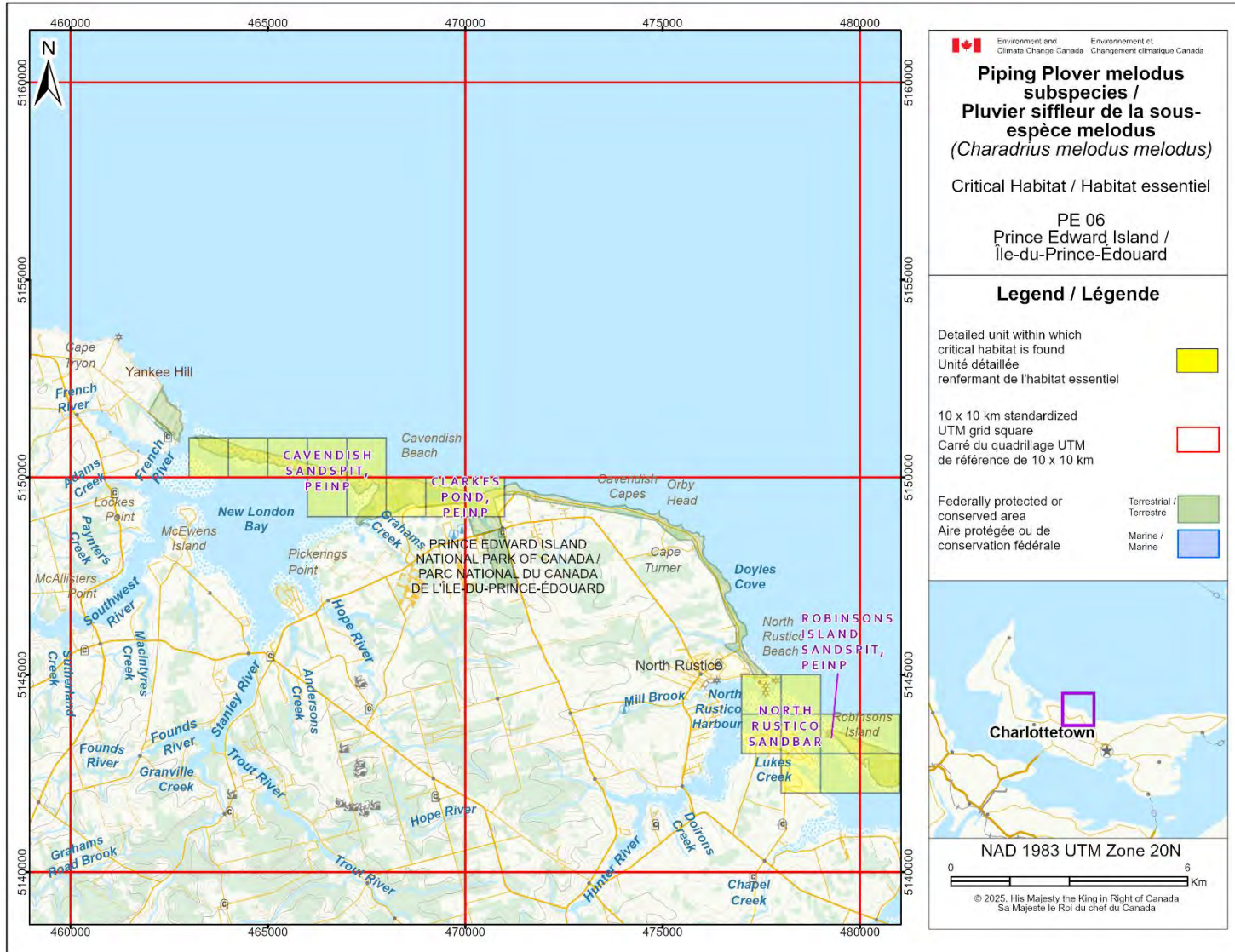
PE 03. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



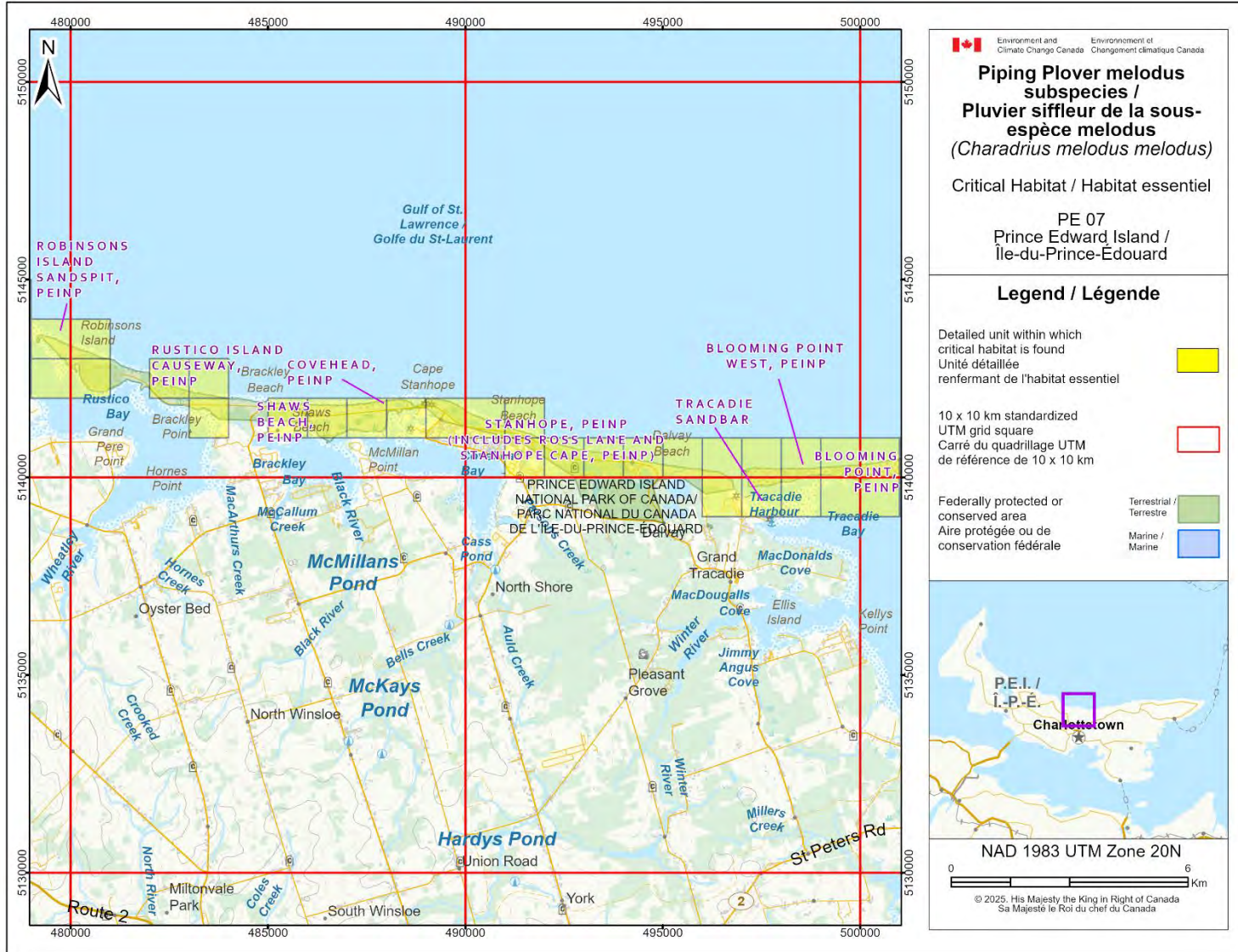
PE 04. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



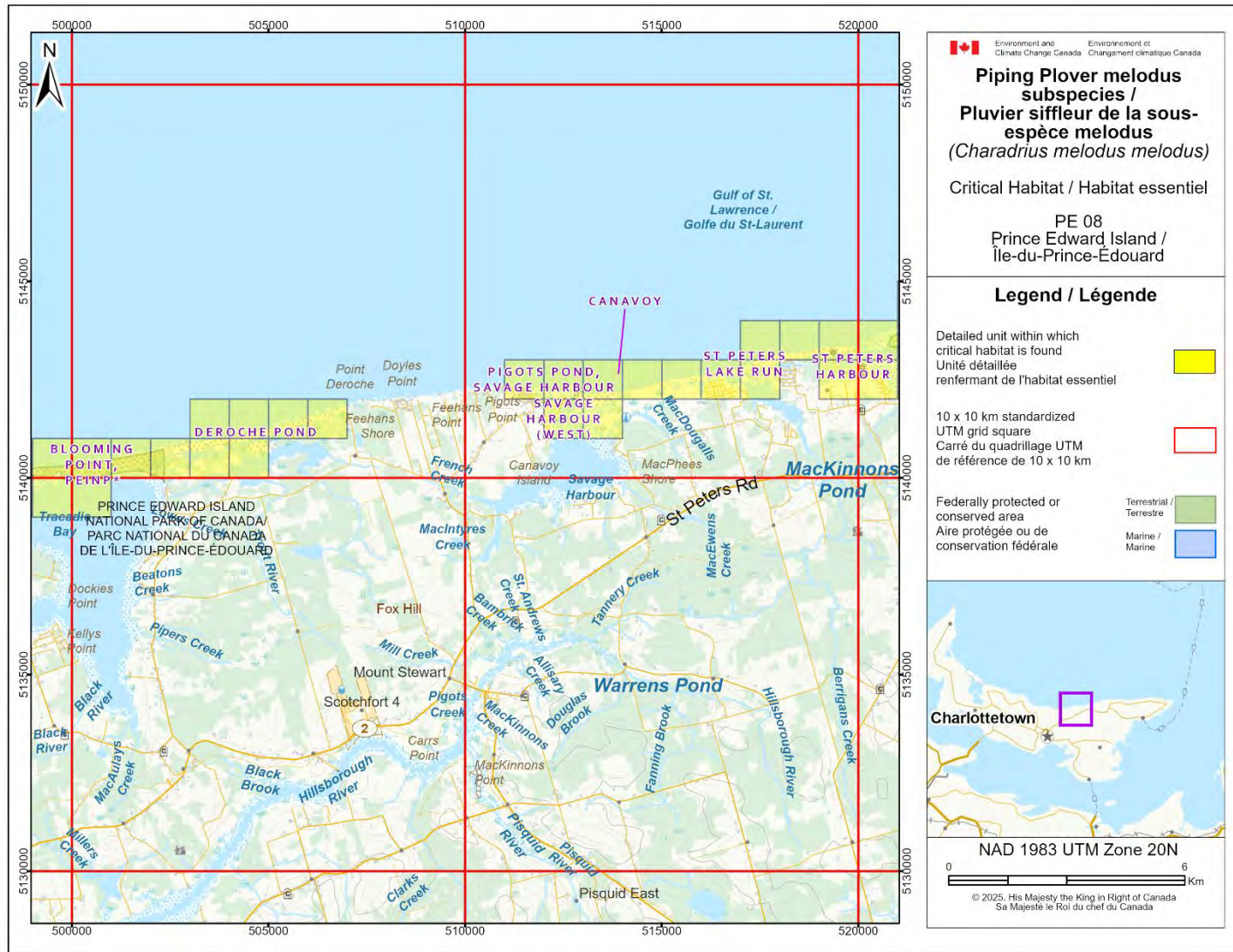
PE 05. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



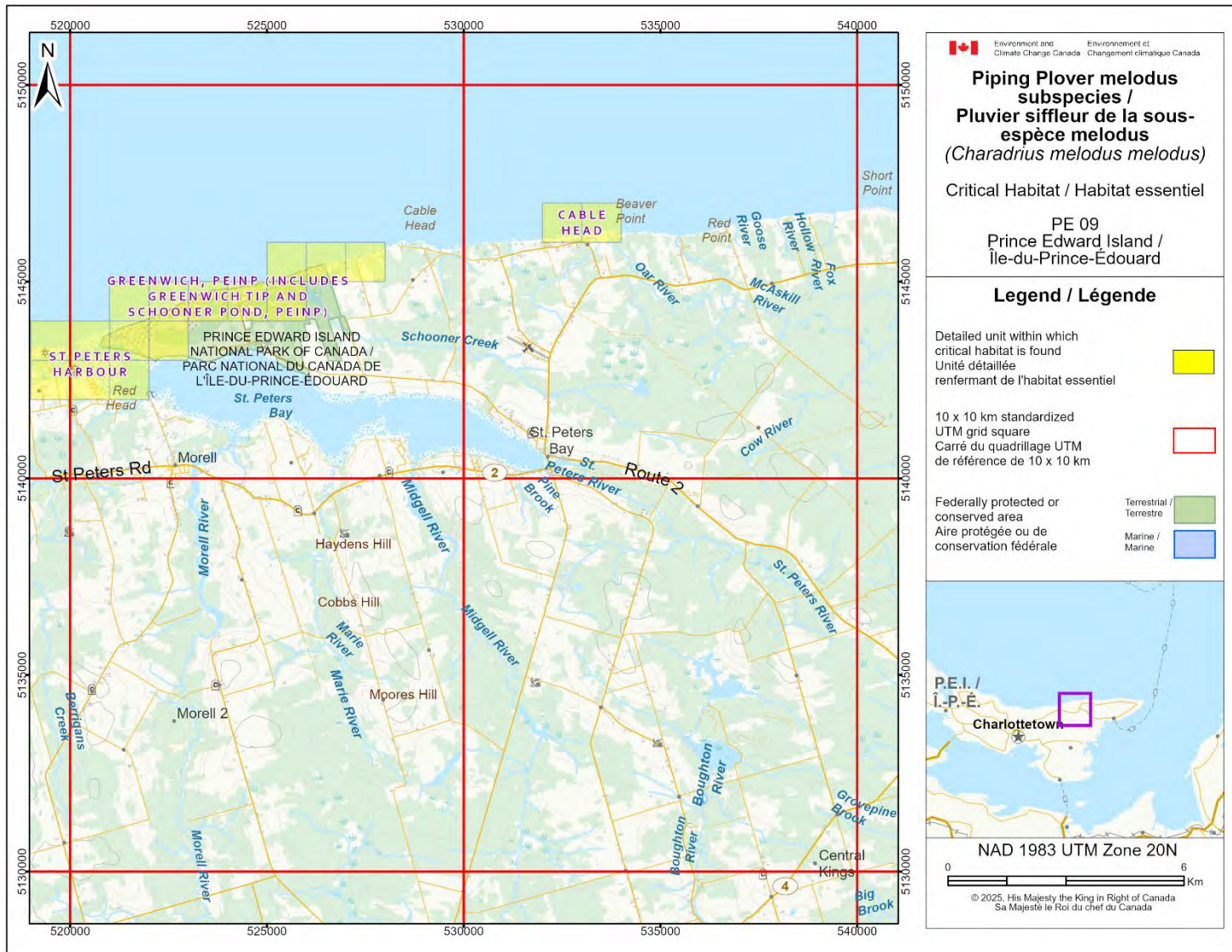
PE 06. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



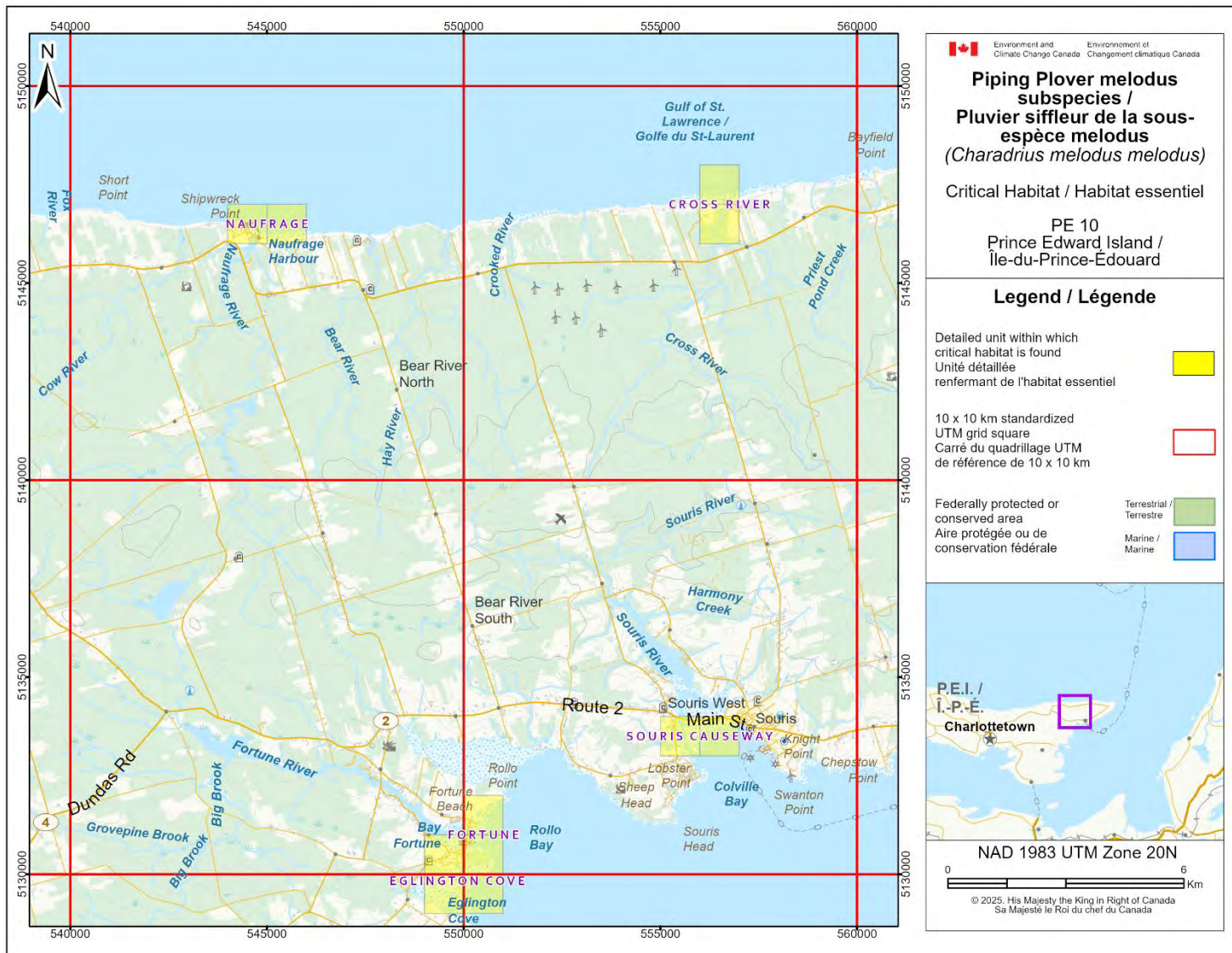
PE 07. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



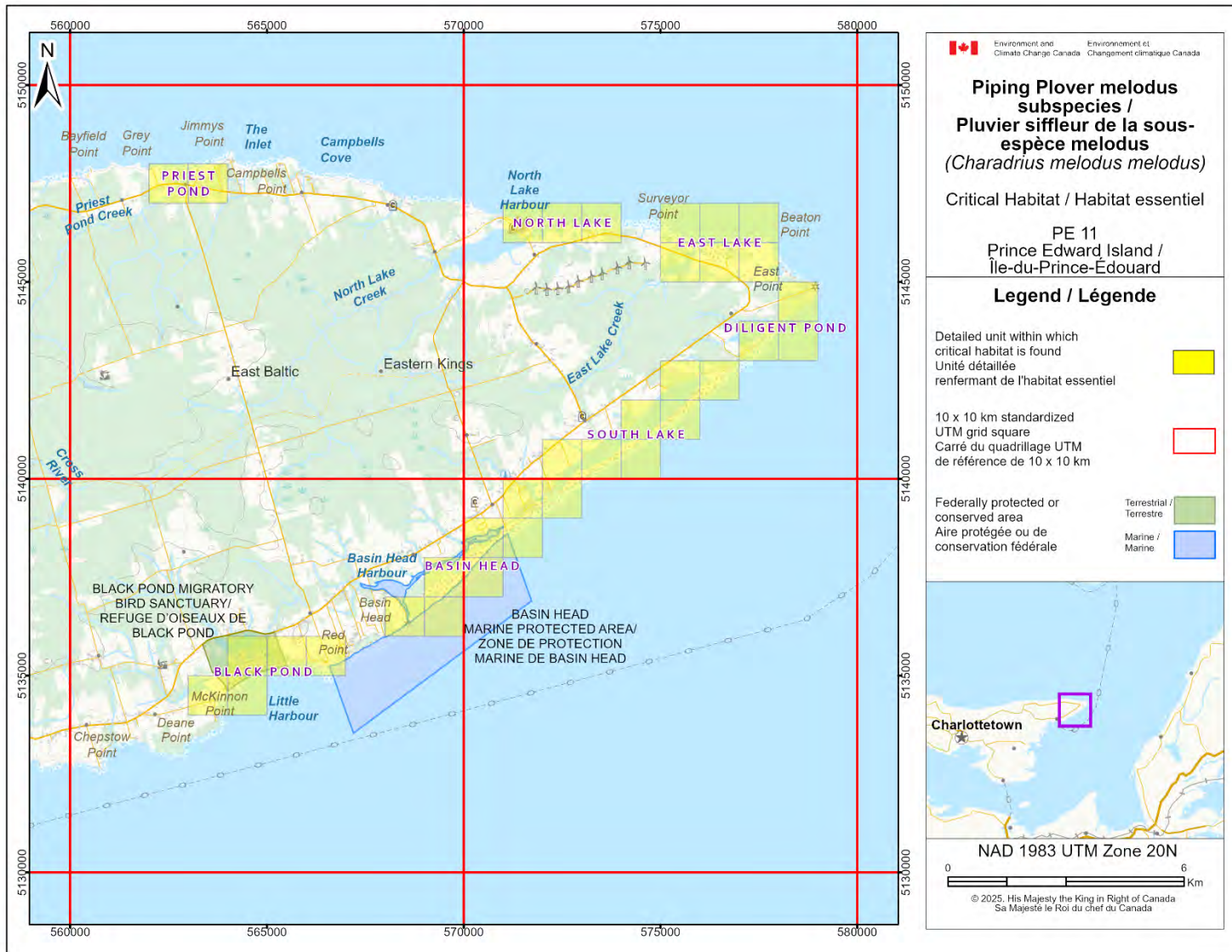
PE 08. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update. \*Blooming Point beach located within Prince Edward Island National Park of Canada and outside of Prince Edward Island National Park boundary.



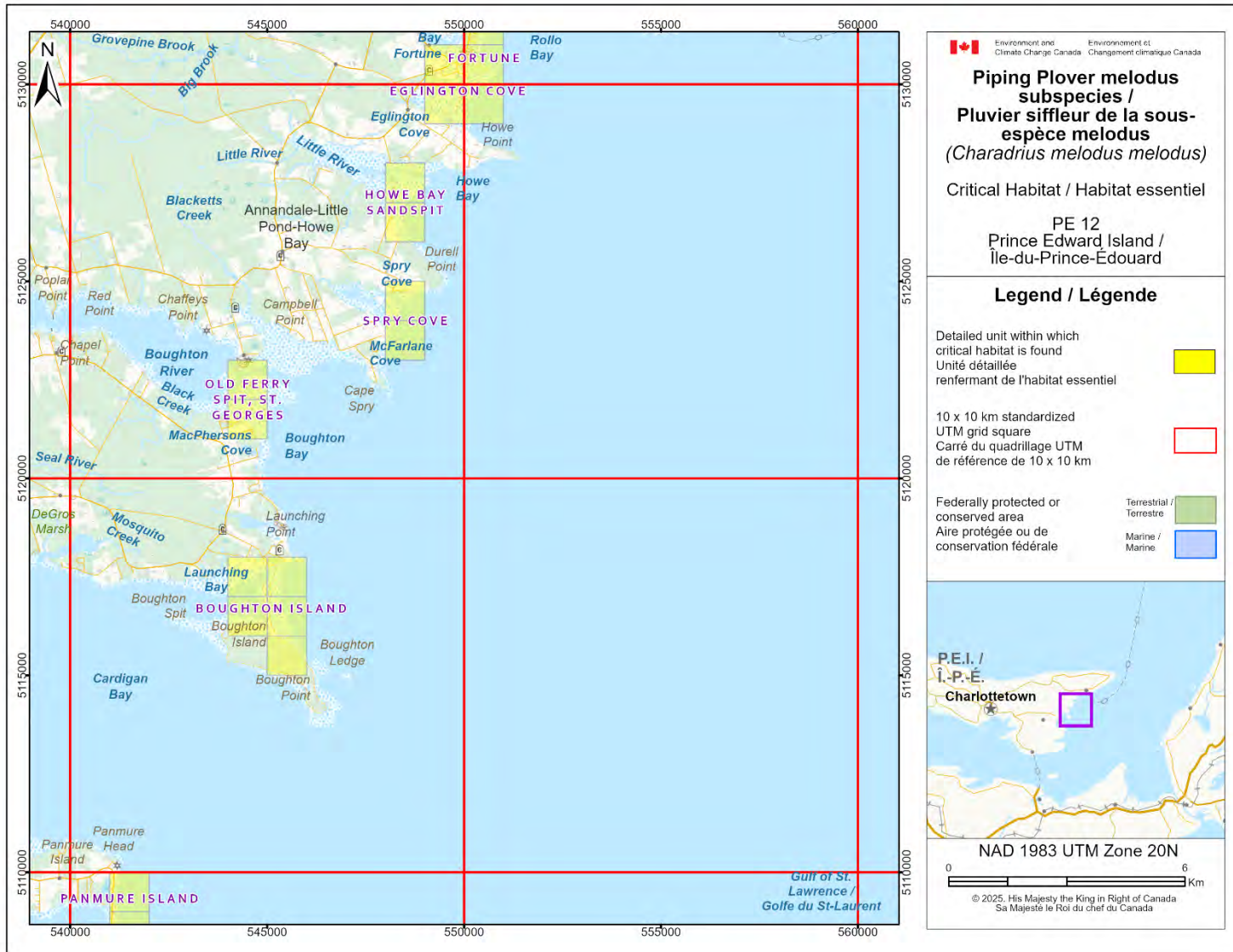
PE 09. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



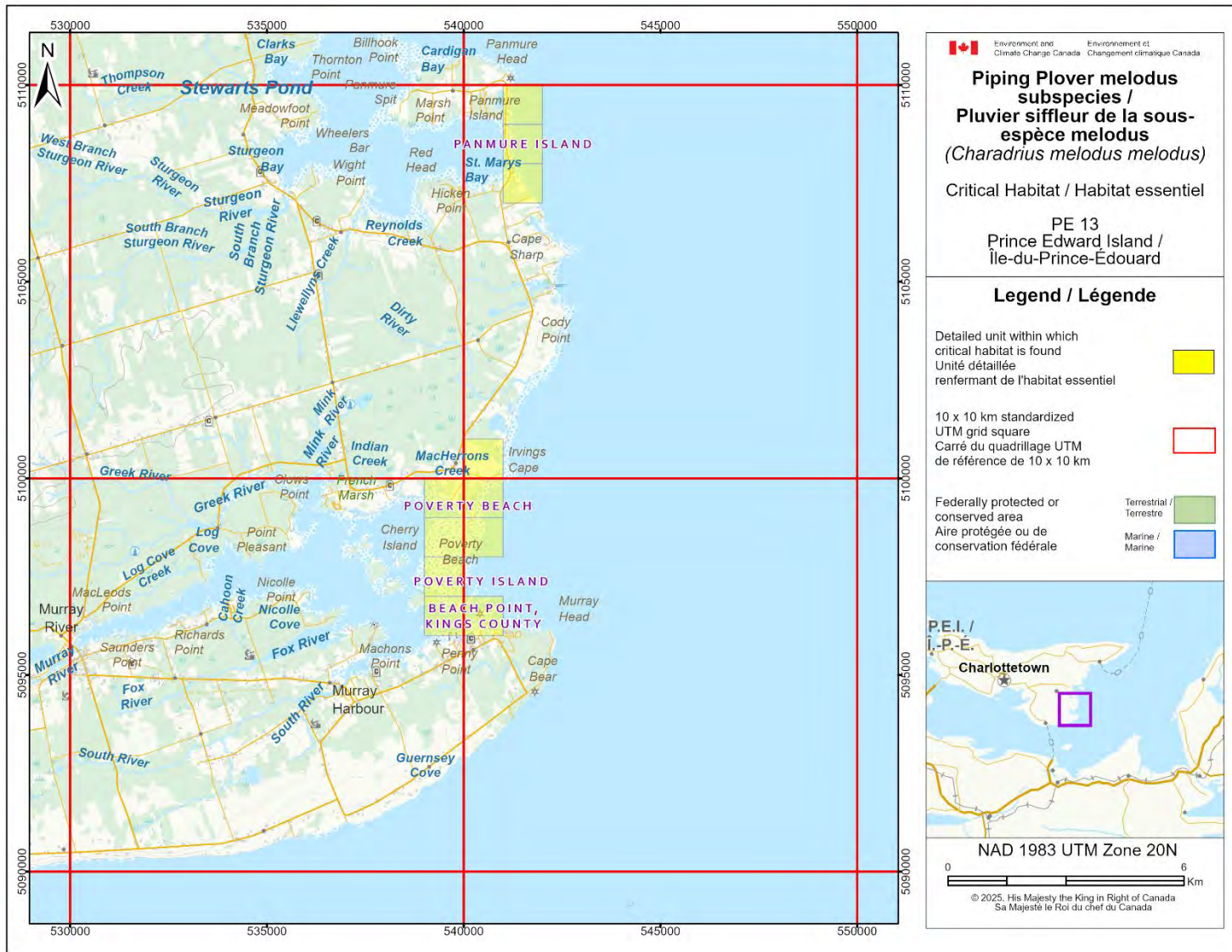
PE 10. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



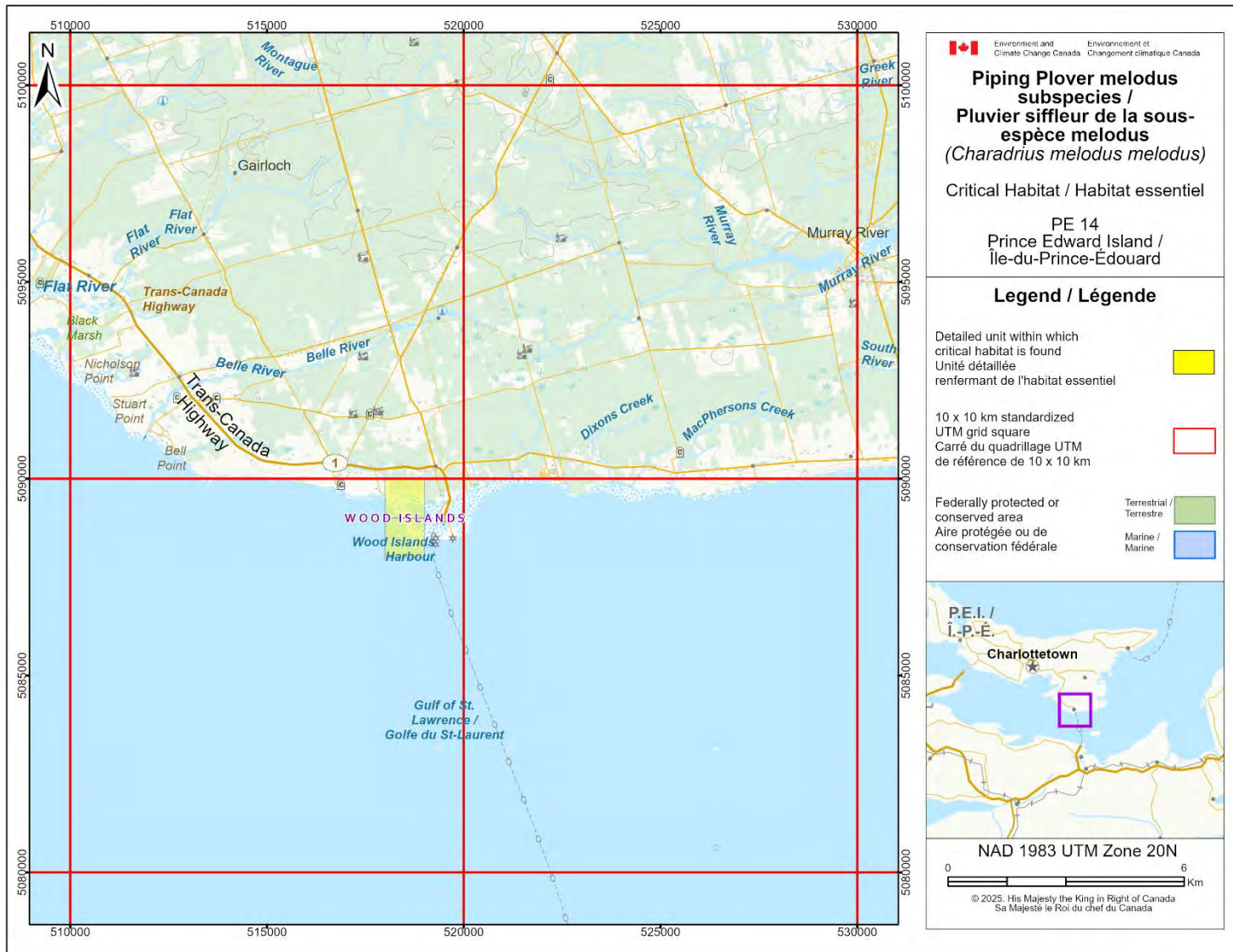
PE 11. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



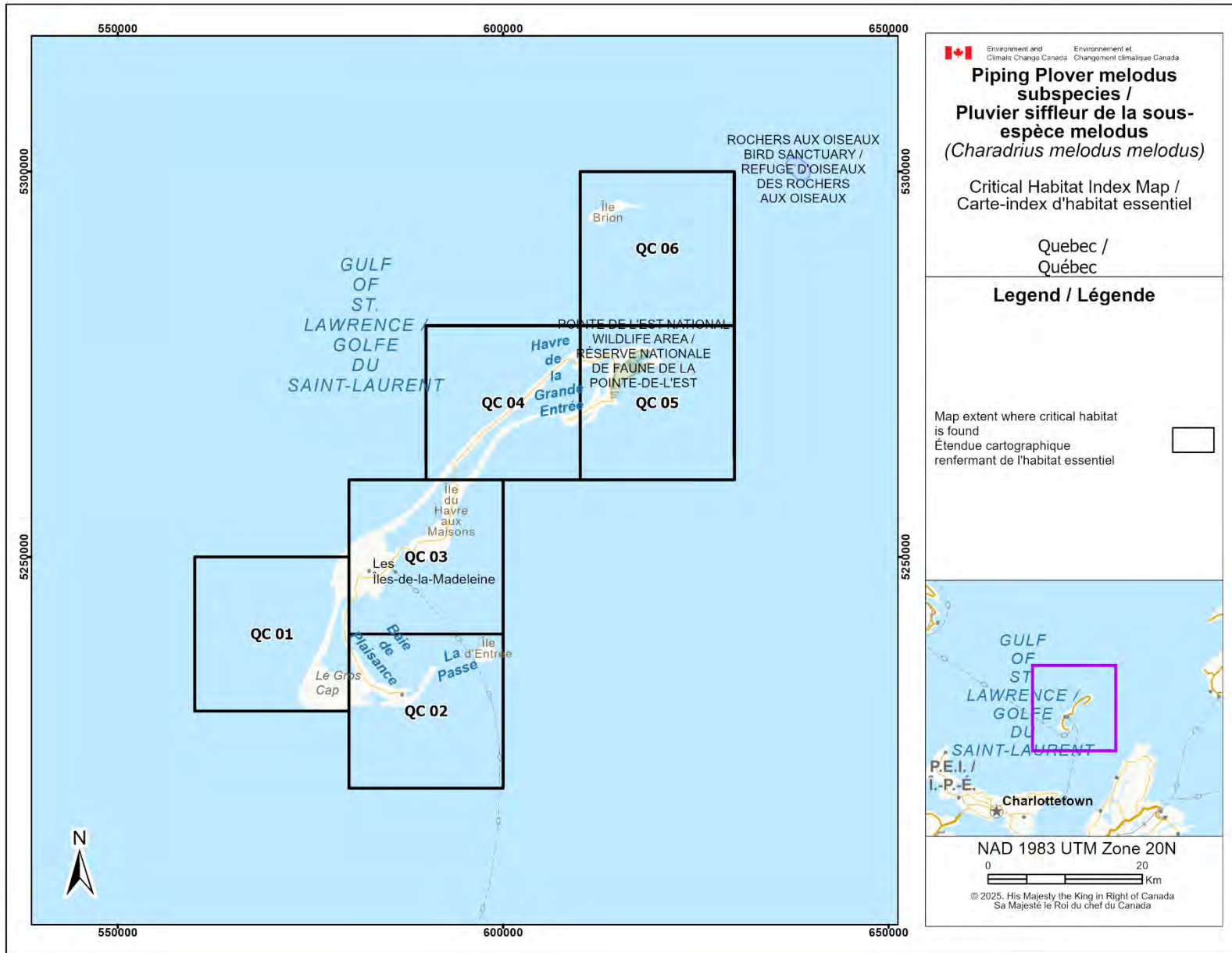
PE 12. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



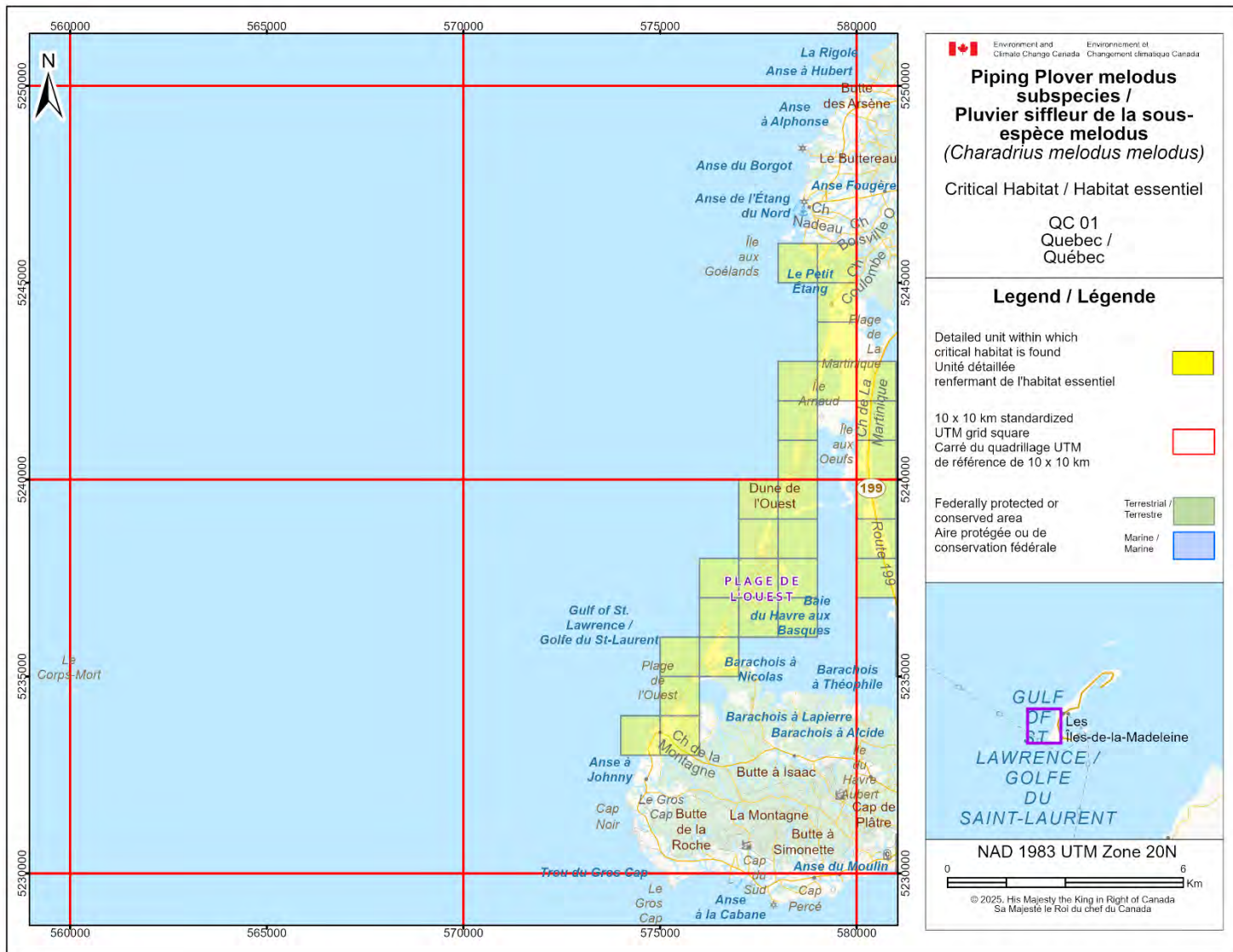
PE 13. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



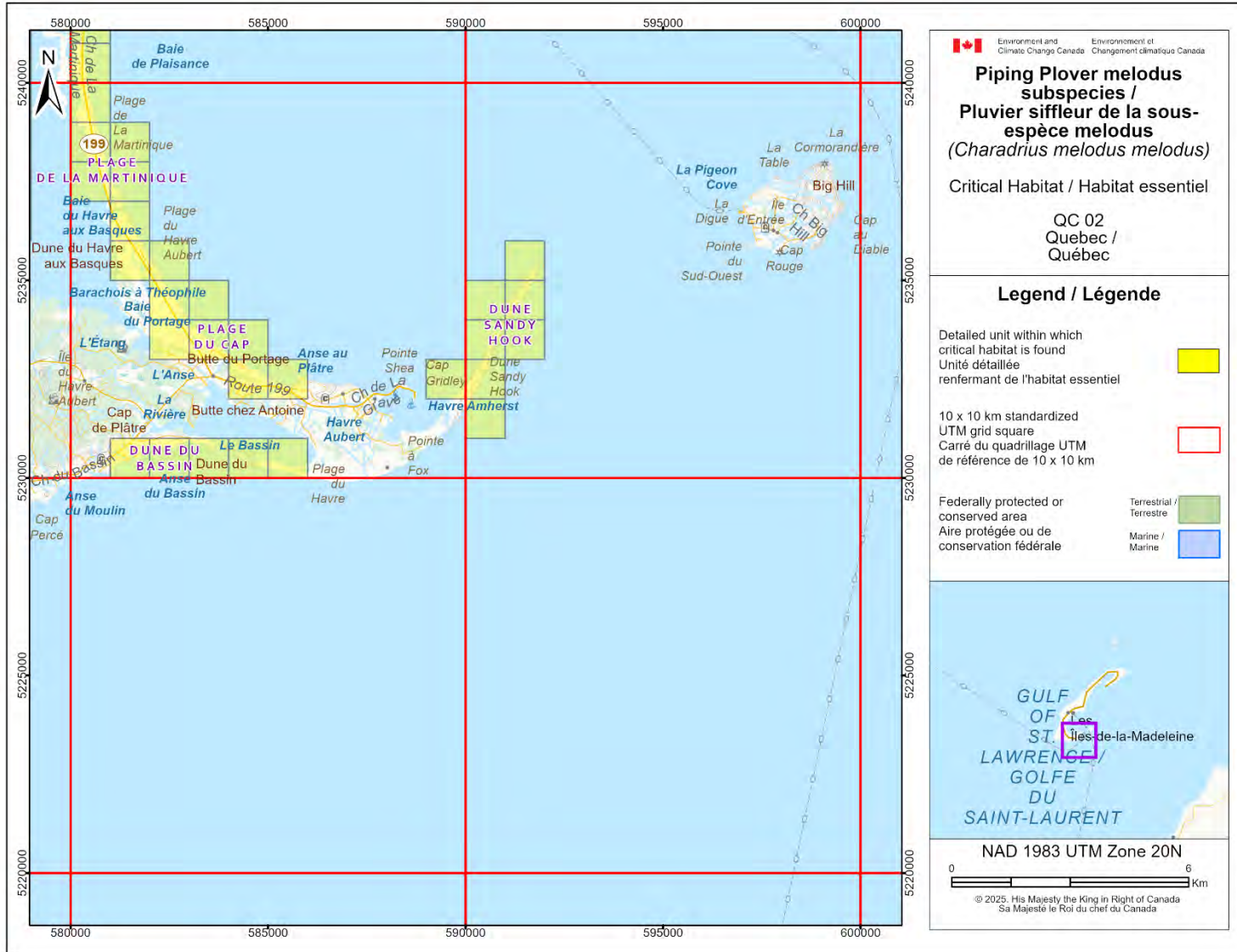
PE 14. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Prince Edward Island. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



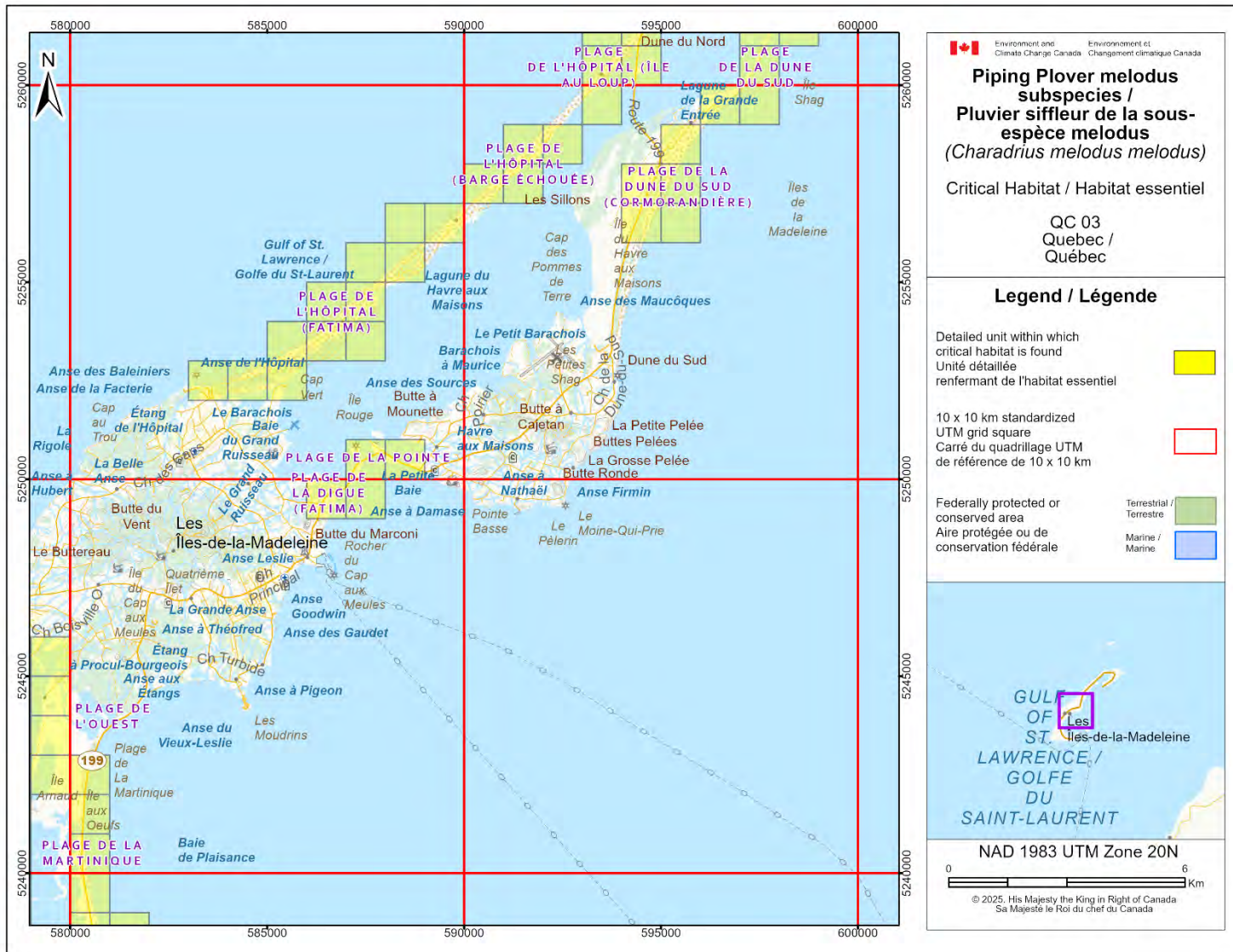
Index 05. Overview index map of critical habitat for Piping Plover *melodus* subspecies in Quebec.



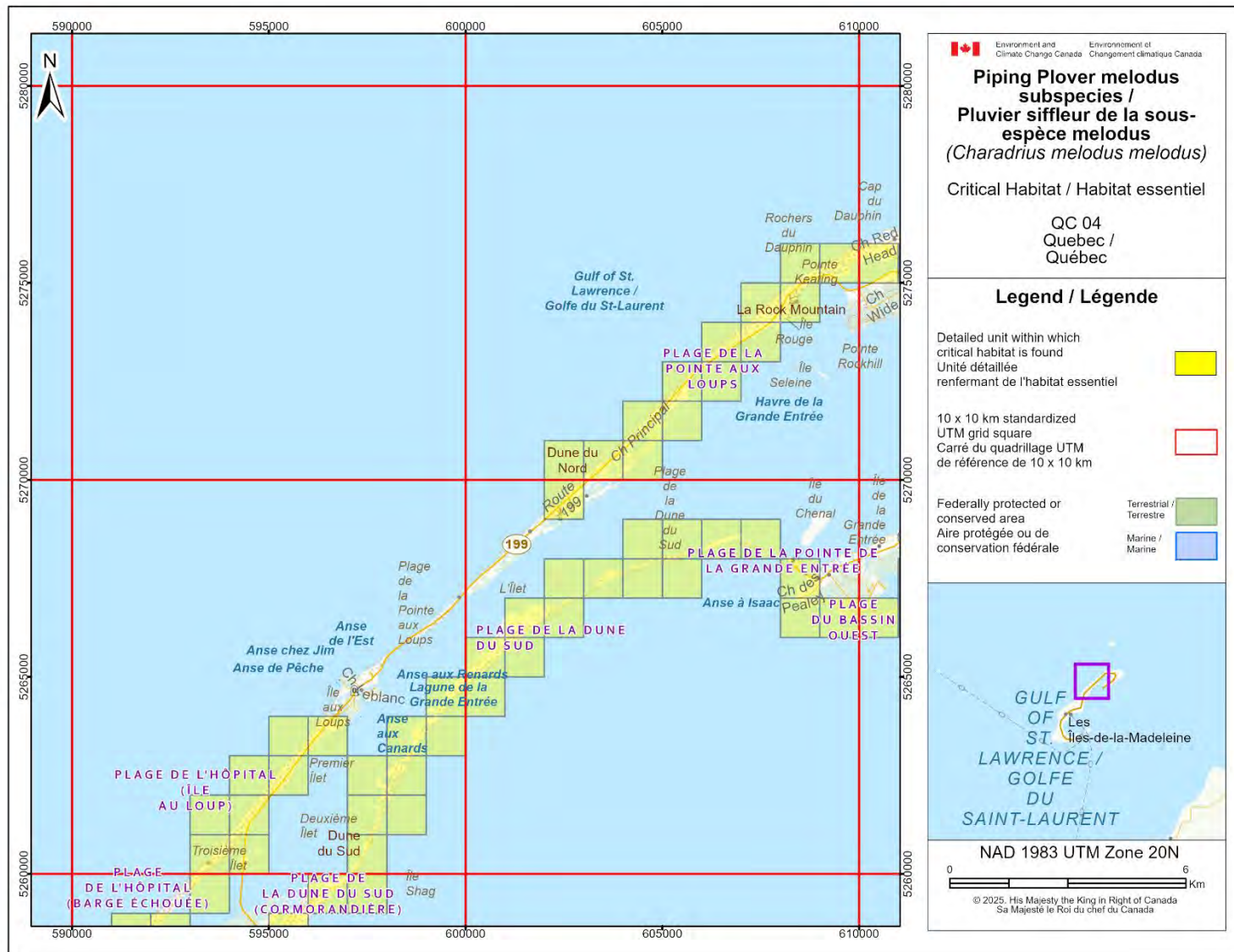
QC 01. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Quebec. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



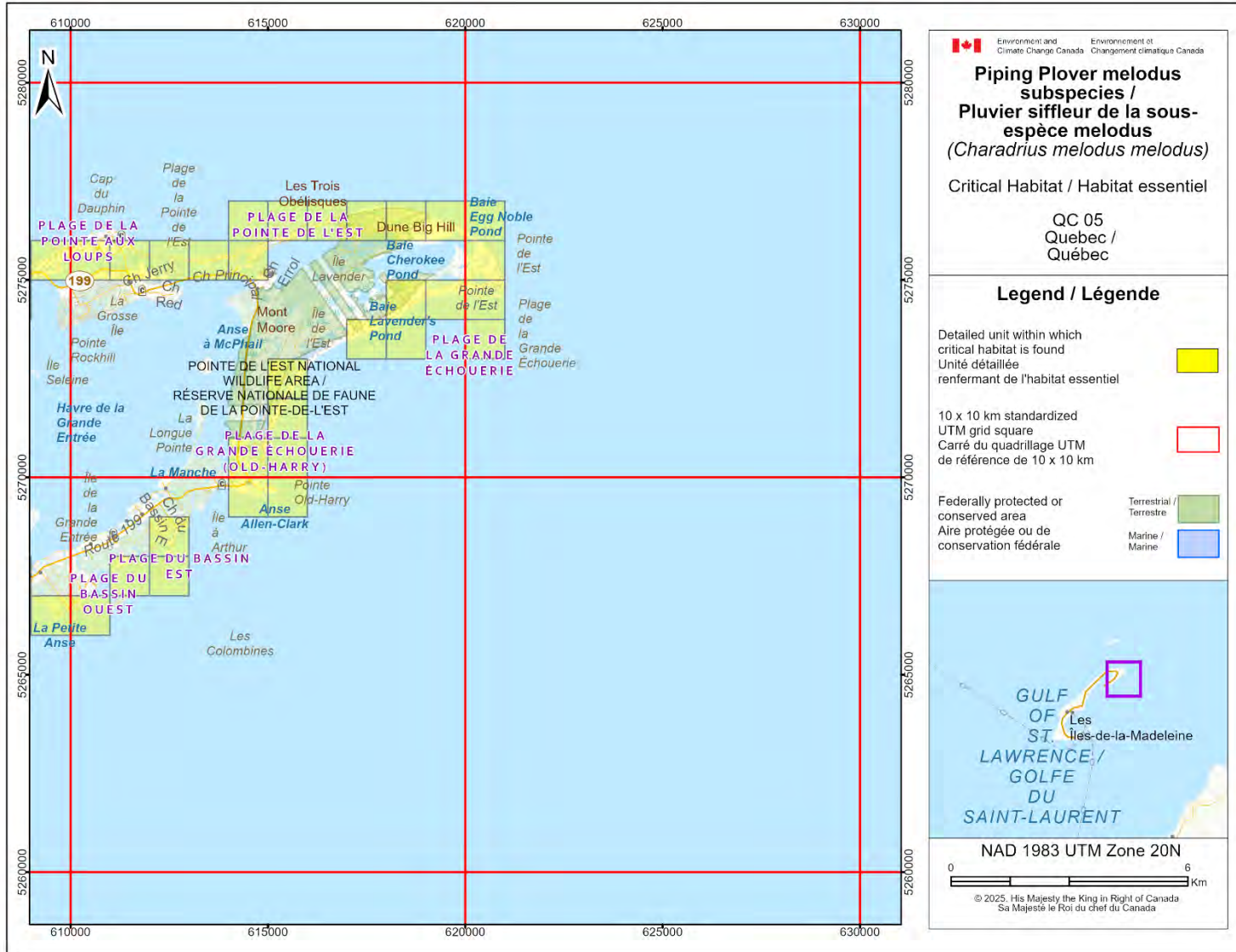
QC 02. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Quebec. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



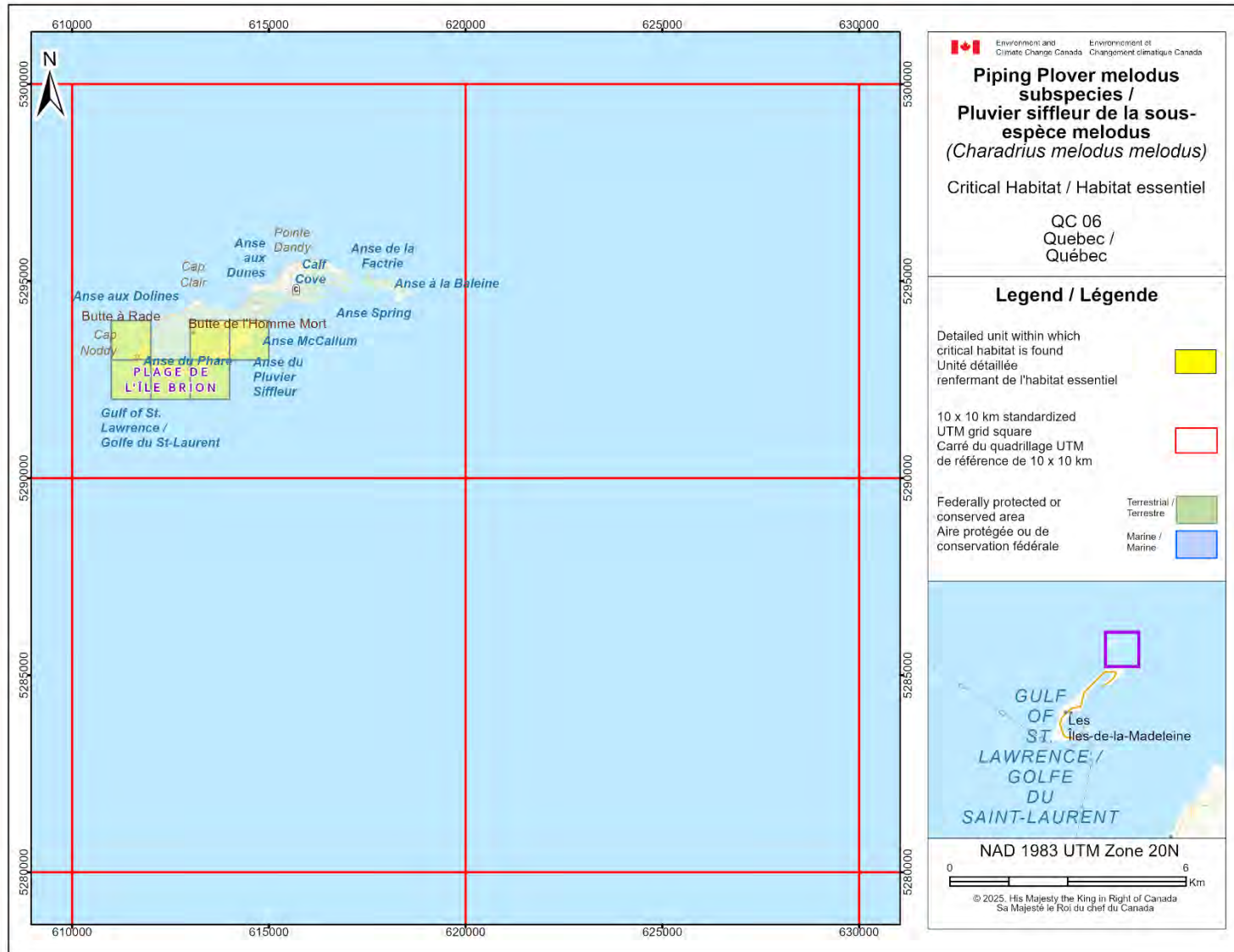
QC 03. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Quebec. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



QC 04. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Quebec. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



QC 05. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Quebec. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.



QC 06. Grid squares that contain areas identified as critical habitat for Piping Plover (*melodus* subspecies) in Quebec. For the criteria and methodology used to identify critical habitat within these grid squares, see sections 7.1 and 7.2 of this 2026 update.

## Appendix D: Critical Habitat Beach Areas – 2026 Final Update

This appendix lists all beach areas identified as critical habitat for the Piping Plover, *melodus* subspecies in this 2026 Final Update, organized alphabetically by province. These are the beach areas that ECCC experts determined met both criteria for identification as critical habitat: use by one or more nesting or territorial pairs of Piping Plovers during at least one year in the 1991-2016 data period, and the presence of necessary habitat features sufficient to support one or more essential life processes. The methodology used to reach these determinations is described in section 7.2.2.

Within the 1 x 1 km grid squares shown in Appendix C, the intertidal zone, beach, and first dune areas associated with beach areas listed in this appendix are critical habitat. The names of these beach areas appear on the Appendix C maps in purple text. The delineation of critical habitat within those grid squares is described in Section 7.2.2.

This appendix may be updated as new information becomes available. Any such update would be reflected in an amendment to this recovery strategy.

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NB	Baie de Petit Pokemouche	Le Goulet, Pokemouche Gully	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 04
NB	Bouctouche Bar	Dune de Bouctouche	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 12
NB	Cap Bateau	Cap-Bateau	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 03
NB	Cape Jourimain, NWA		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 15

<sup>30</sup> “+” between beach names in this column or in the Alternative Beach Names column indicates beaches were merged between the 2012 Recovery Strategy and the 2022 amended Recovery Strategy and Action Plan (see body of text in 7.2 Critical habitat updates for details).

<sup>31</sup> confirmed to have been used during at least one year by nesting or territorial pairs (between 1991-2016).

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NB	Cap-Pelé	Grand Barachois	Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NB 13
NB	Cedar Road South	Tabusintac Beach north, Cedar Road Spit, Chemin cedriere sud, factorie a Bastien, plage de la factorie	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 06
NB	Cedar Road Spit	Fleche de sable chemin cedriere	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 06
NB	Chiasson Office	Shippegan Beach North	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 04
NB	Chockpish	(includes Chockpish Nord, Centre & South)	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 11
NB	Côte-Sainte-Anne		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 11 & NB 12
NB	Dune de Maisonnette	Maisonnette Dune, Pointe de Maisonnette	Yes	No	Yes	Added	Assessed as not suitable in EC 2012; confirmed suitable in ECCC 2022 based on updated habitat review.	NB 01
NB	Dune de Neguac	Neguac Dune, Neguac Beach, Neguac Bar, Neguac Sandspit	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 07
NB	Dune de Tabusintac	Tabusintac Sandspits	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 06 & NB 07

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NB	École la Vague	Le Goulet	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 04
NB	Escuminac	(includes Pointe de Pruche)	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 08 & NB 09
NB	Grand Lac	Lameque	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 04
NB	Grand Passage	Pokemouche North Pokemouche Peat Operations	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 04 & NB 05
NB	Grande Plaine	Ward Road North	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 02
NB	Île Pokesudie		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 04
NB	Johnston Point		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 14
NB	Lac Frye		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 02
NB	Little Cape	Petit-Cap	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 14
NB	Marks Point South	Miscou Harbour South	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 03
NB	Middle Miscou		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 02
NB	Miscou Beach	MacGregors Mal Bay / Mal Baie nord (Lac Chiasson)	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 02
NB	North Kouchibouguac Dune, KouchNP	North Kouchibouguac Dune, KNP	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 09 & NB 10

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NB	North Richibucto Dune, KouchNP	North Richibucto Dune, KNP	Yes	No	Yes	Added	Assessed as not suitable in EC 2012; confirmed suitable in ECCC 2022 based on updated habitat review.	NB 10 & NB 11
NB	Petit Barachois		Yes	No	Yes	Added	Assessed as not suitable in EC 2012; confirmed suitable in ECCC 2022 based on updated habitat review.	NB 13
NB	Pigeon Hill Beach	Plage de Pigeon Hill	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 03
NB	Pigeon Hill Sandspit	Fox Den, Dune de Pigeon Hill	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 03
NB	Plover Ground North	Pokemouche South Loggie Road Beach, Four Roads	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 05
NB	Plover Ground South	Pokemouche South Loggie Road Beach, Four Roads	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 05
NB	Pointe à Barreau	Cedar Road North, Facterie à Bastien, Club aquatique, Val Comeau	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 06
NB	Pointe à Bouleau	Ile au Cheval (joined to Tracadie Dune 2011)	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 05
NB	Pointe Sapin	Pointe Sapin Wharf	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 09

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NB	Pointe Sapin Dune, KouchNP	Pointe Sapin Dune, KNP	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 09
NB	Pointe Verte	Green Point, Four Roads Tracadie Beach North, Four Roads	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 05
NB	Portage Island NWA	Portage Island, NWA	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 07
NB	Portage River Dune, KouchNP	Portage River Dune, KNP, Le Barachois	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 09
NB	Preston		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NB 08
NB	Ruisseau Chenière	Ward Road South, Gallien Beach	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 02
NB	Sainte-Marie - Saint-Raphael	St. Raphael-sur-mer	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 03
NB	South Kouchibouguac Dune + Tern Islands, KouchNP	South Kouchibouguac Dune, KNP (includes Tern Islands, Kellys beach and Kellys Island)	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	NB 10
NB	South Richibucto	Cap Lumière	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 11

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NB	South Richibucto (North Barrier Island)	South Richibucto Dune, Barrier Island;	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 11
NB	Swinging Point + Neguac (Spit) North	Dune de Neguac Nord, Blacklands Sandspits formerly part of Swinging Point Beach	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	NB 06 & NB 07
NB	Tracadie Dune	Tracadie Sandspit, Tracadie, South Tracadie Dune, Dune de Tracadie	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 05
NB	Val Comeau		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 06
NB	Waterside	Waterside Beach	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 16
NB	Wilson Point North	Mal Baie sud	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 02
NB	Wilson Point South	Sandy Point, Miscou Point, Miscou Gully	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NB 03
NL	Big Barachois Beach	Big Barachois, Grand Bay West	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 05
NL	Big Barasway (Burgeo)	Burgeo	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 06
NL	Big Barasway (Seal Cove)	The Bight	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 07

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NL	Bottles Barachois (Rocky Barachois Beach)	Rocky Barachois, Bottles Barachois, Grand Bay West	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 05
NL	Cape Ray Beach, J.T. Cheeseman Provincial Park	Cheeseman, Cape Ray, J.T. Cheeseman Provincial Park	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 05
NL	Deadman's Bay		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NL 08
NL	Flat Bay Peninsula	Flat Bay	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 03
NL	Grand Codroy Provincial Park	Millville Beach, Grand Codroy Day Park	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 04
NL	Little Barasway		Yes	No	Yes	Added	Missed or mislabeled in EC 2012; now correctly included in ECCC 2022 based on expert review.	NL 06
NL	Little Codroy Beach	MacDougall's Beach, Shoal Point	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 04
NL	Osmond Beach	Windsor, Osmond, Jerret Point - Windsor Point	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 05
NL	Sandy Point, Flat Island		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 03
NL	Seal Cove - Stephenville Crossing		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 03

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NL	Second Beach - Sandbanks Provincial Park		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 06
NL	Second Beach (Grand Bay West)	Long, Rocky Barachois Bight	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 05
NL	Shallow Bay, GMNP		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 01
NL	Short Sand Beach	East of Windsor Point	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 05
NL	Stephenville Crossing		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 03
NL	Stephenville Crossing – Black Bank		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NL 03
NL	Stephenville Crossing – Main Gut south		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NL 03
NL	Third + Fourth Beach - Sandbanks Provincial Park	Third Beach, Fourth Beach - Sandbanks Provincial Park	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	NL 06
NL	Western Brook, GMNP		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NL 02
NS	Beach Meadows		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 07
NS	Big Merigomish Island	Merigomish (Big Island), Big Island Beach	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 14

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NS	Black Point	Little Harbour Lake, Hemeons Point	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 05
NS	Bulls Head	Stoney Island Harbour	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01
NS	Burks Point	Powells, The Ponds	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01
NS	Cape Bay, Cape LaHave Island	Cape LaHave Island Bay	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 08
NS	Captains Pond and Monks Head		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 15
NS	Carters & Wobamkek		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 06
NS	Cherry Hill (Conrad)	Hell Bay	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 07
NS	Clam Harbour		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 11
NS	Clam Point		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01
NS	Conrads (East and West)	Conrod Island Park Reserve / Fox Island Point	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 09
NS	Cow Bay	Silver Sands	Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 09
NS	Cranberry Pond	South West Port Mouton	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 06

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NS	Crescent	Lockeport	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 04
NS	Crow Neck (Baccaro)		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 03
NS	Daniels Head (Southside)	Absalom Point	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01
NS	Dominion (Lingan)	Indian Bay	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 19
NS	Dunns		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 15
NS	Durham Lane Beach, Port Joli		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 05
NS	Fox Bar	Salt Box, Thrumb	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 04
NS	Glance Bay Bar	Big Pond, South Street	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 19
NS	Goose (Indian) Point		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01, NS 02
NS	Grahams Cove	Grahams Cove / Ferry Road	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 15
NS	Green Bay		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 08

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NS	Harbour Breeze, Port Joli	SE of Durham Lane	Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 06
NS	Hawk Point		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01
NS	Hirtles		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 08
NS	Inverness Beach		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 17
NS	James Beach + Bowen Island	James Beach + Bowen Island, James Beach, Bowen Island, Black Point Beach, James and Little Harbour Spit	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	NS 13
NS	Johnstons Pond		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 05
NS	Little Port Joli Bay, Keji NP Seaside		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 06
NS	Louis Head		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 05
NS	Mahoneys		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 15

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NS	Martinique		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 10
NS	Melmerby		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 13
NS	Middle Harbour		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 18
NS	North Harbour		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 18
NS	Northeast Point		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 02
NS	Oak Island		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 12
NS	Ogdens Pond		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 15
NS	Pictou Bar Spit (Lighthouse)	Pictou Harbour Spit	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 13
NS	Pomquet		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 15
NS	Ragged Harbour	Dogs Hole	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 07
NS	Rainbow Haven Park (Cole Harbour)		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 09
NS	Red Head	Atlantic; Ingomar	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 03

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NS	Roaring Bull Point		Yes	No	Yes	Added	Assessed as not suitable in EC 2012; confirmed suitable in ECCC 2022 based on updated habitat review.	NS 13
NS	Round Bay & Roseway	Roseway	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 03 & NS 04
NS	Sand Hills Provincial Park (Sebim)		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 02
NS	Sandy Bay	Thomas H. Raddall Provincial Park	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 05
NS	Shipping Point	Port Hood	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 16
NS	South Harbour		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 18
NS	South West Mabou	West Mabou	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 16
NS	St. Catherines River, Keji NP Seaside	Cadden Beach	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 06
NS	Stoney (Lawrencetown Head)		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 09
NS	Stoney Island		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01
NS	Summerville		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 06
NS	The Cape	Cape Sable, Cape Island	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01
NS	The Hawk		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	NS 01

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NS	White Point Beach		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	NS 06
PE	Basin Head	Bothwell	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 11
PE	Beach Point, Kings County		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 13
PE	Black Pond	Red Point	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 11
PE	Blooming Point, PEINP (includes Blooming Point West, PEINP)		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 07 & PE 08
PE	Boughton Island		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 12
PE	Cable Head		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	PE 09
PE	Cabot Provincial Park		Yes	No	Yes	Added	Assessed as not suitable in EC 2012; confirmed suitable in ECCC 2022 based on updated habitat review.	PE 05
PE	Campbells Pond, Park Corner		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 05
PE	Canavoy	Savage Harbour East	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 08
PE	Cascumpec Sand Hills	Cascumpec Island	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 03 & PE 04

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
PE	Cavendish Sandspit, PEINP		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 06
PE	Clarkes Pond, PEINP	Cavendish Main, PEINP	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 06
PE	Conway Sand Hills	Conway Island	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 04
PE	Cousins Pond, Cousins Shore		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 05
PE	Covehead, PEINP		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 07
PE	Cross River		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	PE 10
PE	Darnley Point		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 05
PE	Deroche Pond	Point de Roche Pond	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 08
PE	Diligent Pond		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 11
PE	East Lake		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 11
PE	Eglinton Cove		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 10 & PE 12
PE	Fortune		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 10
PE	Greenwich, PEINP + Greenwich Tip +	Greenwich Central,	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	PE 09

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
	Schooner Pond, PEINP	Greenwich Tip, Schooner Pond						
PE	Hog Island	Malpeque Sand Hills, Malpeque Island	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 04 & PE 05
PE	Howe Bay Sandspit		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 12
PE	Indian Point Sand Hills	Glenwood Island Chain	Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	PE 01
PE	Jacques Cartier Provincial Park East – Kildare Point Sandspit	Kildare Point Sandspit	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 03
PE	Nail Pond		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 02
PE	Naufrage		Yes	No	Yes	Added	Assessed as not suitable in EC 2012; confirmed suitable in ECCC 2022 based on updated habitat review.	PE 10
PE	North Lake		Yes	No	Yes	Added	Newly assessed in the ECCC 2022 amendment. Confirmed suitable and used by a nesting or territorial pair (2009–2016).	PE 11
PE	North Rustico Sandbar		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 06
PE	Old Ferry Spit, St. Georges	Boughton Bay	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 12
PE	Panmure Island		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 13

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
PE	Pigots Pond, Savage Harbour	formerly part of Savage Harbour	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 08
PE	Poverty Beach		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 13
PE	Poverty Island	used to be a part of Poverty	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 13
PE	Priest Pond		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 11
PE	Robinsons Island Sandspit, PEINP	Rustico Island Sandspit	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 06 & PE 07
PE	Rustico Island Causeway, PEINP	Robinsons Island Causeway	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 07
PE	Savage Harbour (West)		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 08
PE	Shaws Beach, PEINP		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 07
PE	Souris Causeway		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 10
PE	South Lake		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 11
PE	Spry Cove	Sally's Beach	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 12
PE	St Peters Harbour	St Peters Bay	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 08 & PE 09
PE	St Peters Lake Run	Lakeside	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 08

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
PE	Stanhope, PEINP + Ross Lane + Stanhope Cape, PEINP	Ross Lane, Stanhope Cape	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	PE 07
PE	Tracadie Sandbar	Tracadie Beach	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 07
PE	Wood Islands		Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	PE 14
QC	Dune du Bassin	Dune du Bassin secteur 1 + Dune du Bassin secteur 2	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 02
QC	Dune Sandy Hook	Sandy Hook (bout) + Sandy Hook (milieu)	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 02
QC	Plage de la Digue (Fatima)	La Digue	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 03
QC	Plage de la Dune du Sud	Dune du Sud (début) + Dune du Sud (milieu) + Dune du Sud (pointe)	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 04
QC	Plage de la Dune du Sud (Cormorandière)	L'Éolienne + La Cormorandière	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 03
QC	Plage de la Grande Échouerie	Grande Échouerie	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 05
QC	Plage de la Grande Échouerie (Old Harry)	Old-Harry	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 05

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
QC	Plage de la Martinique	Plage de la Martinique	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 02 & QC 03
QC	Plage de la Pointe	La Pointe	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 03
QC	Plage de la Pointe aux Loups	Cap du Dauphin + Grande Brèche-Dune du Nord + Mine de sel + Secteur avant mine de sel + Secteur lac Goose	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 04
QC	Plage de la Pointe de la Grande Entrée	Chenal de la Grande-Entrée	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 04
QC	Plage de la Pointe de l'Est	Plage de Grosse-Île + Pointe de l'Est	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 05
QC	Plage de l'Hôpital (Barge échouée)	Barge échouée	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 03
QC	Plage de l'Hôpital (Fatima)	Anse aux Baleiniers + Plage de l'Hôpital	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 03
QC	Plage de l'Hôpital (île au Loup)	Pont du Déroit + Secteur-îlet-Pointe-aux-loups	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 04
QC	Plage de l'île Brion	Anthony's Nose + Cap Noddy île Brion	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 06

PR	Beach Area Name <sup>30</sup>	Alternate Beach Names	Used? <sup>31</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
QC	Plage de l'Ouest	Chemin Coulombe + Dune de l'Ouest + Étang à Ben + Étang des Caps, Goulet du Havre-aux-Basques + Le Corfus	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 01
QC	Plage du Bassin Est	Bassin aux Huîtres (est)	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 05
QC	Plage du Bassin Ouest	Bassin aux Huîtres (ouest)	Yes	Yes	Yes	Unchanged	Remains suitable. No change between EC 2012 and ECCC 2022.	QC 05
QC	Plage du Cap	Plage du Havre Aubert + Portage-du-Cap	Yes	Yes	Yes	Beaches merged	Merged with adjacent beach and name revised. CH status unchanged.	QC 02

## Appendix E: Beach Areas Inventoried but Not Identified as Critical Habitat - 2026 Final Update

This appendix lists beach areas that were inventoried and assessed by ECCC experts and were not identified as critical habitat in this 2026 Final Update, organized alphabetically by province. These areas did not meet one or both of the criteria for identification as critical habitat: confirmed use by one or more nesting or territorial pairs of Piping Plovers during at least one year in the 1991-2016 data period, and the presence of necessary habitat features sufficient to support one or more essential life processes. For each beach area, the table records which criterion or criteria were not met.

The beach areas listed in this appendix are not critical habitat. Their inclusion here is for completeness and transparency, and to document the full scope of ECCC's assessment process. The methodology used to reach these determinations is described in section 7.2.2.

This appendix may be updated as new information becomes available. Any such update would be reflected in an amendment to this recovery strategy.

Note: This document was updated in May 2026, to add latitude and longitude coordinates for beach areas listed in this Appendix that occur within the grid squares shown in Appendix C. These coordinates were added to clarify the general location of those beach areas, which are not identified as critical habitat. No changes were made to the identification of critical habitat.

PR	Beach Area Name <sup>32</sup>	Alternate Beach Names	Used? <sup>33</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
NB	Crab Island (47.294126°N, 64.949759°W)	Blacklands Sandspits	Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	NB 07
NL	Crow Head Beach		No	Yes	No	Removed	Not used by a nesting or territorial pair (1991–2016). Removed in ECCC 2022.	N/A

<sup>32</sup> "+" between beach names in this column or in the Alternative Beach Names column indicates beaches were merged between the 2012 Recovery Strategy and the 2022 amended Recovery Strategy and Action Plan (see body of text in 7.2 Critical habitat updates for details).

<sup>33</sup> confirmed to have been used during at least one year by nesting or territorial pairs (between 1991-2016).

PR	Beach Area Name <sup>32</sup>	Alternate Beach Names	Used? <sup>33</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
	(47.624473°N, 57.685792°W)							
NL	First Beach - Grand Bay West (47.582241°N, 59.185409°W)	First	Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	NL 05
NL	Kelby Cove, Grand Bay West (47.583248°N, 59.222505°W)		Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	NL 05
NL	Searston Beach (47.827579°N, 59.329281°W)		Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	NL 04
NS	Conrods, Petpeswick Inlet (44.699901°N, 63.178884°W)		Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	N/A
NS	Goose Haven, Port Joli (43.867071°N, 64.878016°W)	Port Joli (Goose Haven)	Yes	Yes	No	Removed	No longer suitable due to erosion, flooding, or other physical changes. Removed in ECCC 2022.	N/A
NS	Oxners Beach (44.280423°N, 64.341787°W)		Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	N/A
PE	Adams Pond, Darnley (46.553889°N, 63.604722°W)		Yes	Yes	No	Removed	No longer suitable due to erosion, flooding, or other physical changes. Removed in ECCC 2022.	N/A

PR	Beach Area Name <sup>32</sup>	Alternate Beach Names	Used? <sup>33</sup>	CH (2012)	CH (2022 & 2026)	Change?	Rationale	Map
PE	Brandors Pond, Sea View (46.547762°N, 63.585361°W)	Branders Pond	Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	N/A
PE	East Point (46.457090°N, 61.982278°W)		Yes	Yes	No	Removed	No longer suitable due to erosion, flooding, or other physical changes. Removed in ECCC 2022.	PE 11
PE	Lower Darnley, Adam's Cottages (46.558831°N, 63.622829°W)	Adam's Cottages	Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	N/A
PE	North Rustico, PEINP (46.464021°N, 63.299272°W)		Yes	No	No	Unchanged	Assessed as not suitable in both EC 2012 and ECCC 2022 due to absence of necessary habitat features. Not included in critical habitat identification.	PE 06
QC	Digue à Fernand (47.362034°N, 61.959998°W)		No	Yes	No	Removed	Not used by a nesting or territorial pair (1991–2016).	N/A
QC	Étang à Procul-Bourgeois (47.352302°N, 61.895232°W)		No	Yes	No	Removed	Not used by a nesting or territorial pair (1991–2016).	N/A
QC	Pointe-aux-Loups (47.544755°N, 61.680925°W)		No	Yes	No	Removed	Not used by a nesting or territorial pair (1991–2016).	N/A
QC	Sandy Hook (à la base) (47.229747°N, 61.821233°W)		No	Yes	No	Removed	Not used by a nesting or territorial pair (1991–2016).	N/A