

LAKE MANITOBA LAKE ST. MARTIN

OUTLET CHANNELS PROJECT

MANITOBA INFRASTRUCTURE

Eastern Whip-poor-will Habitat Mitigation Plan

December 1, 2020

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DISCLAIMER

This document was developed to support the Lake Manitoba and Lake St. Martin Outlet Channel Environmental Management and Monitoring Program. This document has been prepared by Manitoba Infrastructure as a way to share information and have discussion with Indigenous Communities and Groups and the public. This document has been prepared using existing environmental and preliminary engineering information, professional judgement as well as information from previous and ongoing public and Indigenous engagement and consultation. The contents of this document are based on conditions and information existing at the time the document was prepared and do not take into account any subsequent changes. The information, data, recommendations, and conclusions in this report are subject to change as the information has been presented as draft and will not be considered complete until further engagement and consultation is complete. The plans may be further revised based on information and direction received from provincial and federal environmental regulators. This draft report be read as a whole, and sections or parts should not be read out of context.

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PREFACE

The Lake Manitoba and Lake St. Martin Permanent Outlet Channels Project (the “Project”) is proposed as a permanent flood control mitigation for Lake Manitoba and Lake St. Martin to alleviate flooding in the Lake St. Martin region of Manitoba. The Project includes the construction and operation of two new diversion channels: the Lake Manitoba Outlet Channel (LMOC) will connect Lake Manitoba to Lake St. Martin and the Lake St. Martin Outlet Channel (LSMOC) will connect Lake St. Martin to Lake Winnipeg. Associated with these outlet channels is the development of bridges, control structures with power connections, a new realignment of PR 239, and other ancillary infrastructure.

Manitoba Infrastructure (MI) is the proponent for the Project. After receipt of the required regulatory approvals, MI will develop, manage, and operate the Project in accordance with the Environmental Management Program (EMP). The EMP framework describes the environmental management processes that will be implemented during the construction and operation phases of the Project. Components of the EMP include a Wildlife Monitoring Plan and Revegetation Management Plan, both of which relate to the Eastern whip-poor-will Mitigation Plan. The goal of the EMP is to ensure that the environmental protection measures committed to in the Environmental Impact Statement (EIS) and the requirements of the Environment Act Licence and Federal Decision Statement Conditions are undertaken in a timely and effective manner. This includes the verification that environmental commitments are executed, monitored, and evaluated for effectiveness, and that information is reported back in a timely manner to the Project management team for adjustment if required.

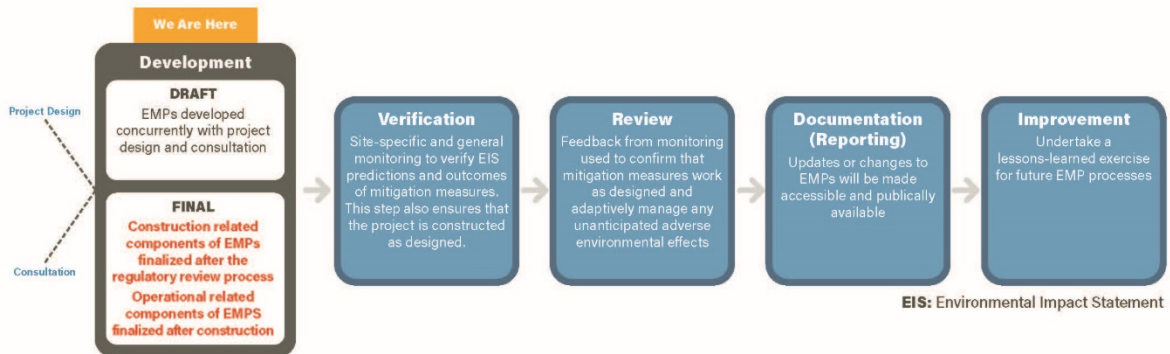
Manitoba Infrastructure remains committed to ongoing engagement and consultation with Indigenous groups and other stakeholders that are potentially affected by the Project. Detailed EMP review discussions have been incorporated into community-specific consultation work plans and additional engagement opportunities will be provided prior to EMP finalization. Engagement opportunities include virtual open house events and EMP-specific questionnaires. EMP-specific questionnaires will be provided to Indigenous groups and stakeholders to obtain feedback and views on the draft plans, in addition to exploring opportunities for Indigenous participation in follow-up monitoring. Feedback and recommendations will be used to inform the completion of the plans.

The EMP provides the overarching framework for the Construction Environmental Management Program (CEMP) and the Operation Environmental Management Program (OEMP), which will be finalized as separate documents prior to Project construction and ideally operation, respectively. Their finalization will consider applicable conditions of the Environment Act Licence and associated approvals, any other pertinent findings through the design and regulatory review processes and key relevant outcomes of the ongoing Indigenous and public engagement and Consultation processes.

The purpose of the CEMP and OEMP is to guide how environmental issues will be addressed during construction and operation, respectively, and how adverse effects of activities will be mitigated. The CEMP is supported by several specific or targeted management plans (e.g., surface water, groundwater, sediment, etc.), as shown in the Figure below, that will guide MI’s development of the Project’s contract documents and subsequently, the Contractor(s) activities, in constructing the Project in an environmentally responsible manner. The OEMP will likely include the same targeted plans developed to manage issues during

construction, but prior to construction completion they would be revised and adapted to suit the specific needs during the operation phase. The purpose of the Eastern Whip-poor-will Habitat Mitigation Plan is to describe the habitat mitigation and monitoring activities that will be implemented along the outlet channel rights-of-way for this species.

Environmental Management Program (EMP) Process



EMPs

- | | |
|--|------------------------------|
| Construction Environmental Management Program ¹ | Revegetation Management Plan |
| Operational Environmental Management Program ¹ | Biosecurity Management Plan |
| Environmental Protection Plan | Dust Control Plan |
| Project Environmental Requirements | Decommissioning Plan |
| Access Management Plan | Ice Management Plan |
| Quarry Management Plan | |
| Surface Water Management Plan | |
| Ground Water Management Plan | |
- ¹ includes information on waste management, hazardous materials management, debris management, emergency response, heritage resources protection and wildlife protection planning

**LAKE MANITOBA
LAKE ST. MARTIN**
OUTLET CHANNELS PROJECT



GLOSSARY OF TERMS AND ACRONYMS

Acronyms

ARU	autonomous recording units
EIS	environmental impact statement
HMA	habitat mitigation area
LMOC	Lake Manitoba outlet channel
LSMOC	Lake St. Martin outlet channel
RVMP	Revegetation Management Plan
ROW	right-of-way

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1.0 INTRODUCTION

1.1 Background and Purpose

The Lake Manitoba and Lake St. Martin Outlet Channels Project (hereafter the Project) proposed by Manitoba Infrastructure (MI) overlaps potential critical habitat for eastern whip-poor-will (*Caprimulgus vociferus*), listed as threatened under the federal *Species at Risk Act* (Government of Canada 2020). Eastern whip-poor-will is a ground-nesting aerial insectivore that typically breeds in a variety of mature forest habitats, preferring well-drained sites that are structurally suitable with forest openings for nesting and foraging (COSEWIC 2009, ECCC 2018a). In 2018, a federal recovery strategy was developed to provide guidance aimed at halting and reversing the population decline of eastern whip-poor-will and identifying critical habitat (ECCC 2018a).

The recovery strategy identifies multiple 10 x 10 km critical habitat squares throughout this species' Manitoba range. These standardized spatial units are used to identify known areas containing confirmed breeding evidence and potential critical habitat. The Project overlaps with one of these squares (14UNC53) at the Lake St. Martin Outlet Channel (LSMOC) inlet and associated distribution line (ECCC 2018a; Appendix 1, Figure 1). Construction in the Project Development Area (PDA; i.e., Project footprint) will require clearing of forested habitats that may support habitat for eastern whip-poor-will but not critical habitat as defined in the species recovery strategy (ECCC 2018a; Appendix 1; Section 1.3).

As described in Chapter 12.7 of the Environmental Impact Statement (EIS), MI is using the precautionary approach and committing to additional mitigation measures to reduce potential Project-related effects to eastern whip-poor-will habitat, despite no evidence that critical breeding habitat will be directly affected by the Project.

The purpose of Eastern Whip-poor-will Habitat Mitigation Plan (hereafter called the Plan) is to describe the habitat mitigation and monitoring activities that will be implemented along the outlet channel right-of-ways (ROWS).

1.2 Project Overview

The Project will develop a permanent flood control mitigation system for Lake Manitoba and Lake St. Martin for alleviating flooding in the Lake St. Martin region. This will be accomplished through construction of a new outlet channel from Lake Manitoba to Lake St. Martin (Lake Manitoba Outlet Channel [LMOC]) and a new outlet channel from Lake St. Martin to Lake Winnipeg (LSMOC). These new channels will allow for floodwaters to be moved more quickly through Lake Manitoba and Lake St. Martin into Lake Winnipeg. The Project will result in less flooding and reduced lake levels on Lake St. Martin during flood conditions. Other works include re-alignment of Provincial Road 239 and a hydroelectric distribution line for operation of the Lake St. Martin Outlet Channel outlet structure (Appendix 1, Figure 1).

1.3 Project Interaction with Eastern Whip-poor-will Habitat

The LSMOC and distribution line PDA overlaps 149.6 ha of an eastern whip-poor-will critical habitat square near the northern part of Lake St. Martin (Appendix 1, Figure 2). Approximately 23.0 ha (15.4%) of overlap consists of upland habitats (e.g., forest) on imperfectly drained or poorly drained soils. Clearing of the LSMOC PDA would result in the loss of this habitat, which based on EIS modeling of biophysical attributes outlined in the recovery strategy, is not considered critical habitat for eastern whip-poor-will (ECCC 2018a; Appendix 2). The closest modelled eastern whip-poor-will habitat was identified within the southeastern portion of the critical habitat square, which is located over 5 km from the LSMOC PDA (Appendix 1, Figure 2).

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2.0 MITIGATION GOAL AND OBJECTIVES

The goal of this Plan is to enhance forest edge habitat for eastern whip-poor-will along the outlet channel ROWs, where adjacent forest exists. This will be achieved by employing the mitigation measures, best management practices, and adaptive management techniques outlined in this Plan.

Specific objectives are to:

- Apply revegetation prescriptions (i.e., shrub plantings) and vegetation management practices that provide habitat opportunities for eastern whip-poor-will, while adhering to requirements for the safe operation and maintenance of the Project.
- Monitor the occurrence of eastern whip-poor-will along the outlet channel ROWs to verify the effectiveness of mitigation measures.

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3.0 PROJECT MITIGATION

3.1 General Project Mitigation Measures

Construction of the outlet channels will require clearing of the 400 m-wide ROWs and the 30 m-wide distribution line, but mitigation measures outlined in the Environmental Protection Plan (MI 2020a) will reduce potential effects to eastern whip-poor-will and their habitats. These include:

- Treed habitats within the ROW will be retained where safe and technically feasible to do so.
- Clearing will not occur between April 1 and August 31 to avoid disturbance to nesting birds and other wildlife (ECCC 2018b).
- If clearing is scheduled to occur within the nesting period (April 1 to August 31), a nest survey may be undertaken by a qualified wildlife biologist if warranted. In the event an active nest is found, it will be subject to site-specific mitigation measures (i.e., clearly marked protective buffer around the nest and/or non-intrusive monitoring).
- Adhering to the provincially recommended setback distance for vegetation clearing and construction activities of 300 m from an active eastern whip-poor-will nest between May 15 to July 16 (MB CDC 2015).
- Revegetation activities will occur in spring or fall depending on the construction schedule and if applied in the fall, prescriptions may require adjustments to improve survivability of seed during winter for herbaceous cover (see Revegetation Management Plan [RVMP; MI 2020b]).

To promote establishment of a healthy vegetation cover for the Project and to allow for the proper function of water flow the following measures are part of the maintenance program during the operations phase:

- maintenance of the vegetation cover in areas where erosion might be present.
- ongoing mowing of the outside drain to promote drainage and berms to support geotechnical stability that requires no tree cover.
- ongoing weed control.

3.2 Outlet Channel Right-of-way Habitat Mitigation Areas

The goal of the RVMP is to revegetate upland areas of the outlet ROWs in a manner that promotes the establishment of grassland communities consisting of native and agronomic grasses and forbs along LMOC and perennial native grass groundcover along LSMOC (MI 2020b). Portions of the LSMOC cleared but not heavily disturbed will be encouraged to naturally regenerate (RVMP 2020). To protect structural integrity and maintain hydrological function, shrubs and trees are discouraged from growing along the channel and on spoil piles/berms but are acceptable at the base of spoil piles in peripheral areas of the ROW (Appendix 1, Figure 3). Figures 1 and 2 identify where shrubland prescriptions may be added to a schematic cross section of LMOC and LSMOC, respectively. Revegetation prescriptions involving shrub plantings will provide habitat for wildlife including eastern whip-poor-will as this species nests in forests with well-drained soils and forages in open habitats containing shrubs and herbaceous plants (Appendix 2). For the purposes of this Plan, eastern

whip-poor-will habitat mitigation areas (HMAs) are those areas where shrub plantings are planned in the upland portions of the LMOC and LSMOC ROWs (i.e., adjacent to the channel berms and in areas adjacent to forest habitats (Figures 1 and 2; Appendix 1, Figure 3). Shrub enhancements for eastern whip-poor-will be targeted in edges of the ROW that occur within 1,250 m of modeled eastern whip-poor-will nesting habitat. This distance is the approximate extent that eastern whip-poor-will forage away from the nest (ECCC 2018a). The exception to this approach will be in the critical habitat square where modeled habitat is absent. Shrub enhancements in the critical habitat square will be done in proximity to deciduous forest on imperfectly drained soil (Appendix 1, Figure 3).

Native plant species will be used to revegetate the ROWs where possible, including native shrubs within the HMAs. The ROW outside of the HMAs will be revegetated with herbaceous plant species only (e.g., native grasses; see RVMP [MI 2020b]).

Figure 1: Schematic of LMOC ROW

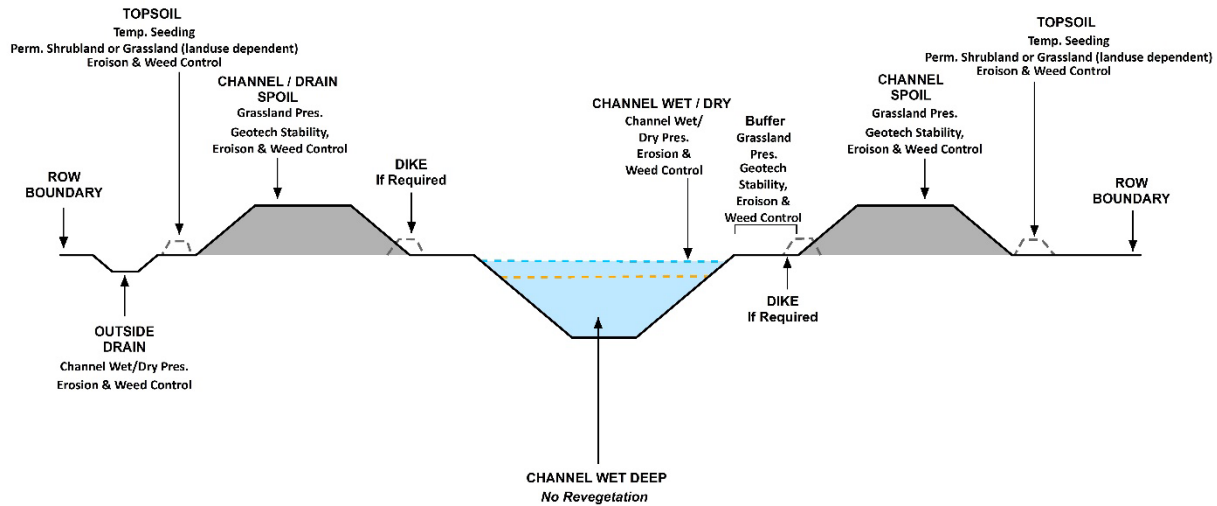


Figure 1 schematic illustrates the main components of the LMOC ROW. The HMAs will be located between the ROW boundary and outside edge of the outside drain (as shown on the left of the diagram) and between the ROW boundary and outside edge of the channel soil berm or topsoil berm (as shown on the right of the diagram).

Figure 2: Schematic of LSMOC ROW

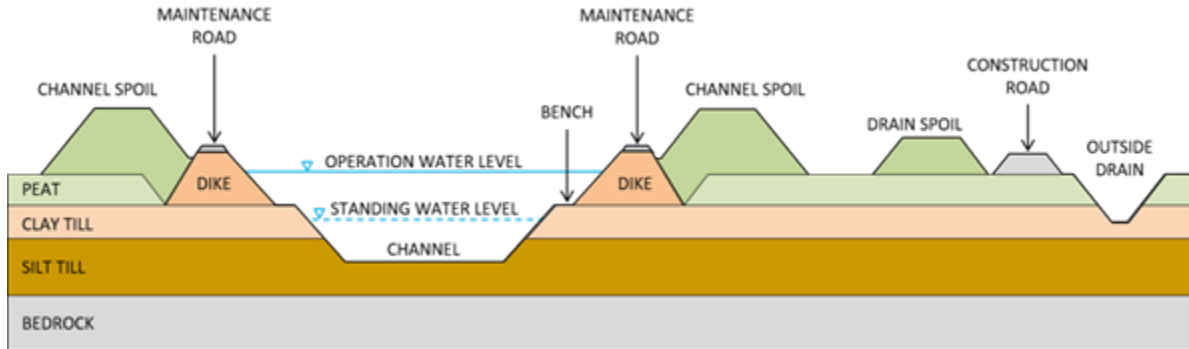


Figure 2 schematic illustrates the main components of the LSMOC ROW. The HMAs will be located between the ROW boundary and outside edge of the channel spoil berm (as shown on the left of the diagram) and between the ROW boundary and outside edge of the outside drain (as shown on the right of the diagram).

4.0 MONITORING AND FOLLOW-UP

To assess the effectiveness of the implementation of this Plan, monitoring activities within the HMAs will include an eastern whip-poor-will survey and an associated habitat survey which are described in greater detail below.

4.1 Eastern Whip-poor-will Survey

Rationale

Mitigation measures have been incorporated into the design of the outlet channels to provide habitat enhancements for wildlife, including eastern whip-poor-will. The eastern whip-poor-will survey will be used to assess the effectiveness of these mitigation measures by examining the habitat use adjacent to the ROW and HMAs.

Objective

The objective of the eastern whip-poor-will survey is to understand if eastern whip-poor-will occupy habitats in, or adjacent to the HMAs.

Measurable Parameter

The measurable parameter for the eastern whip-poor-will survey is habitat occupancy by eastern whip-poor-will.

Methods

Eastern whip-poor-will surveys will occur at a subset of randomly selected HMAs. Surveys will follow a standardized survey protocol (Knight et al. 2019) using ARUs (Wildlife Acoustics Song Meter SM4; Wildlife Acoustics 2020). ARU spacing may be less than the suggested 1.6 km, but no less than 800 m, as habitat occupancy of the species within the survey area is the parameter of interest and independence of sites may still be maintained with reduced spacing.

Surveys will occur over a 14-day period that will coincide with the eastern whip-poor-will breeding season and within seven days of the full moon in late-June to early-July (Knight et al. 2019), which will meet the objectives outlined above while also providing a design for ongoing monitoring efforts. The peak calling time for eastern whip-poor-will is for 90 minutes from 0.5 hours after sunset until 1.5 hours after sunset (Knight et al. 2019). The ARUs will be programmed to collect three 6-minute audio recordings every 30 minutes during this peak period every evening (i.e., 18 minutes of audio per day).

Upon retrieval of the ARUs, the data files will be processed using commercial software (e.g., Kaleidoscope Pro [Wildlife Acoustics 2019]) that automatically scans data files for the species of interest using a reference library; a qualified biologist will review and validate a sample of the results for false-negative and false-positive results. Eastern whip-poor-will detections will be summarized by site and mapped relative to the Project to provide an understanding of the presence and distribution of potential suitable breeding habitat within survey area.

Frequency

The eastern whip-poor-will survey will be completed daily during the peak breeding period described above. Surveys will be undertaken in years 2, 4, and 6 post-construction.

Decision Trigger / Threshold for Action

Decision triggers and adaptive management actions will be developed in consultation with the regulator and Indigenous and stakeholder input.

A summary of the monitoring criteria for the eastern whip-poor-will is provided in Table 1.

Table 1: Monitoring Criteria for the Eastern Whip-poor-will Survey

Monitoring Objective	Method	Monitoring Metric	Project Phase	Duration	Frequency
Evaluate Project effects on eastern whip-poor-will	Eastern whip-poor-will survey	Species occurrence	Operation	Post-construction Years 2, 4, 6	Daily during the peak breeding period

4.2 Habitat Monitoring

Habitat monitoring will be undertaken as part of the monitoring activities outlined in the RVMP (MI 2020b) for the LMOC (Section 8) and LSMOC (Section 14).

4.2.1 Adaptive Management

Adaptive management will be incorporated into the habitat monitoring described above and as part of the adaptive management process outlined in the RVMP (Section 9; MI 2020b). Such measures will factor in input from Indigenous groups, stakeholders and the regulator.

5.0 REFERENCES

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APPENDIX 1

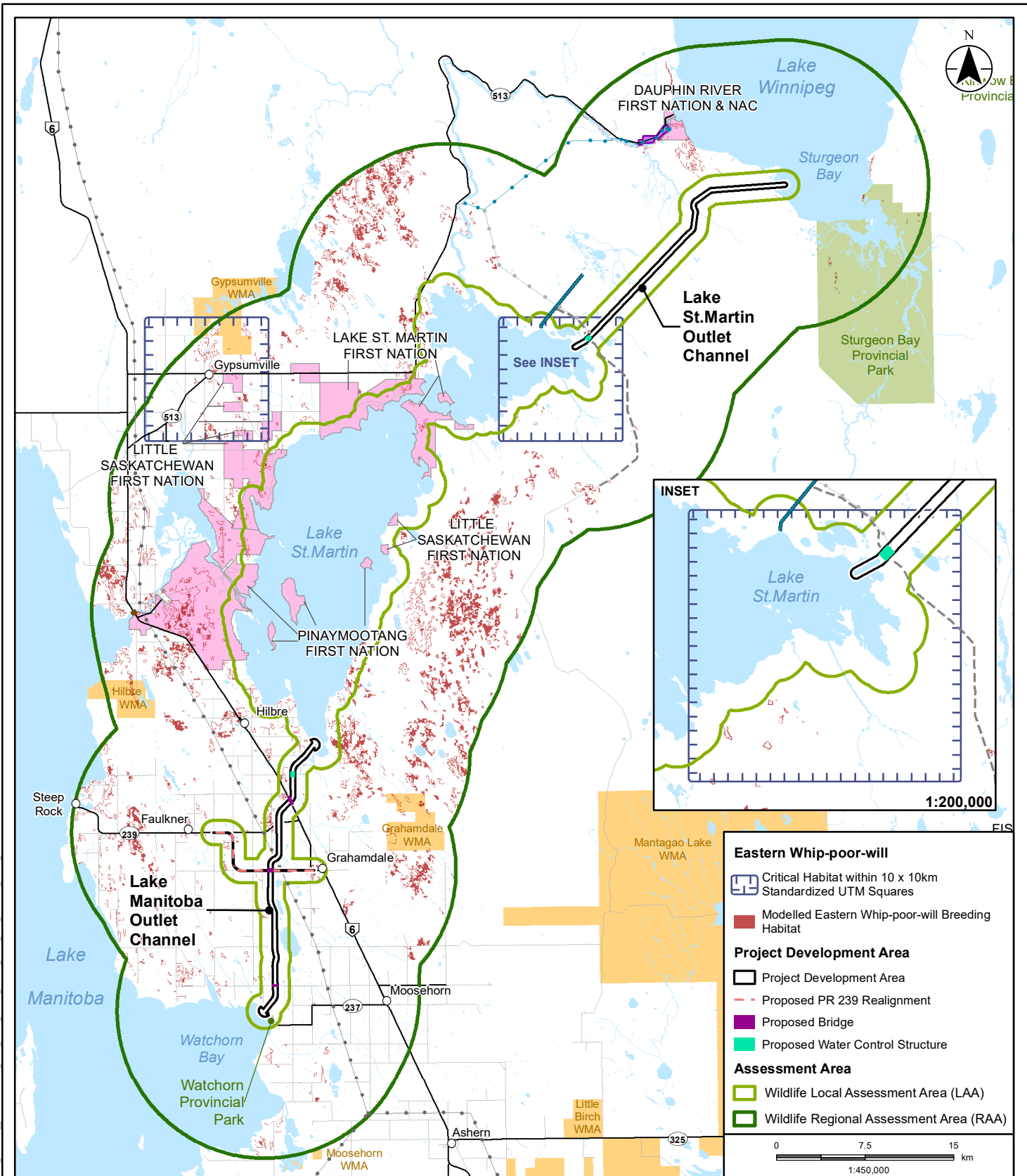
Figures

Figure 1: Project Overview Map

Figure 2: Eastern Whip-poor-will Nesting and Foraging Habitat

Figure 3: LSMOC Eastern Whip-poor-will Habitat Mitigation Areas (SAMPLE)

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Eastern Whip-poor-will

- Critical Habitat within 10 x 10km Standardized UTM Squares
- Modelled Eastern Whip-poor-will Breeding Habitat

Project Development Area

- Project Development Area
- Proposed PR 239 Realignment
- Proposed Bridge
- Proposed Water Control Structure

Assessment Area

- Wildlife Local Assessment Area (LAA)
- Wildlife Regional Assessment Area (RAA)

0 7.5 15 km
1:450,000

Legend

- Fairford Water Control Structure
- Lake St. Martin Emergency Outlet Channel (Reach 1)
- Lake St. Martin Access Road
- Existing Transmission Line
- Existing Distribution Line
- Planned Distribution Line
- Provincial Highway (PTH/PR)
- Municipal Road
- Northern Affairs Community (NAC)
- First Nation
- Wildlife Management Area
- Provincial Park

Notes
 1. Coordinate System: NAD 1983 UTM Zone 14N
 2. Data Sources: Governments of Manitoba and Canada, Manitoba Infrastructure, Stantec Consulting
 3. Last Update: 11/30/2020 10:43:47 AM



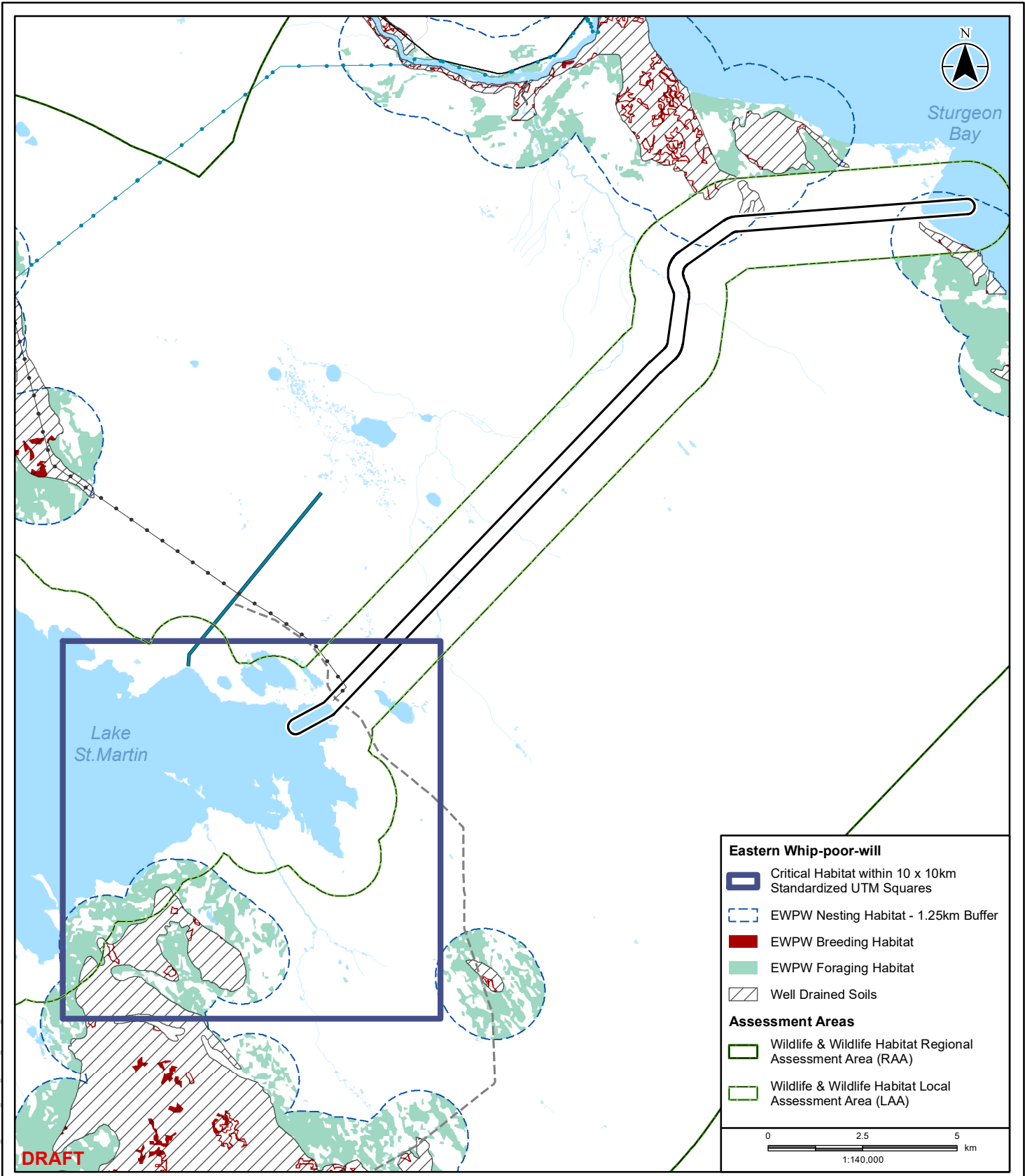
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 Lake Manitoba & Lake St. Martin Outlet Channels Project

Project Overview Map

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Figure 1

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Legend

- Project Development Area
- Existing Distribution Line
- Lake St. Martin Emergency Outlet Channel (Reach 1)
- Provincial Highway (PTH/PR)
- Lake St. Martin Access Road
- Municipal Road
- Planned Distribution Line

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N
2. Data Sources: Governments of Manitoba and Canada, Manitoba Infrastructure
3. Last Update: 11/30/2020 10:59:35 AM



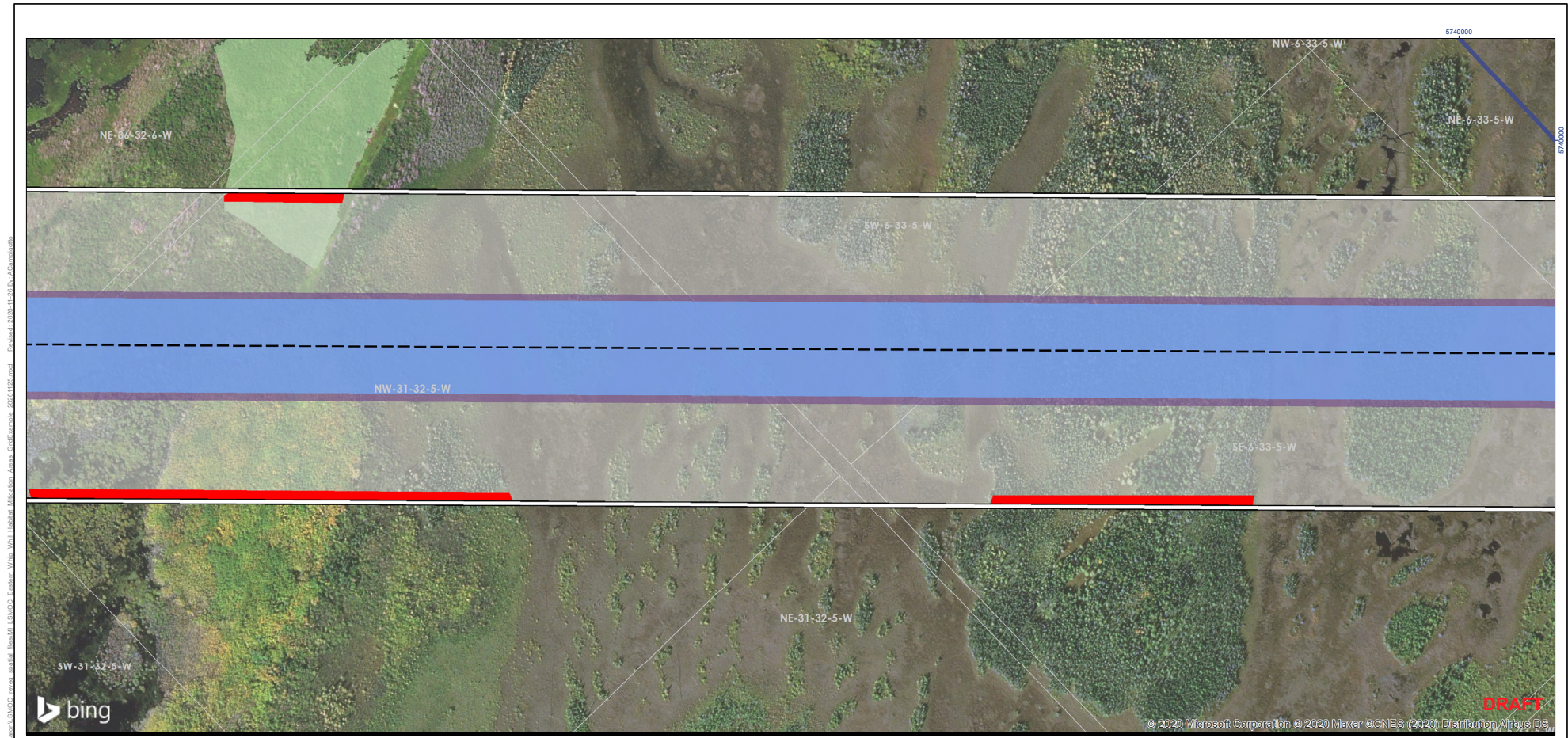
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Eastern Whip-poor-will Nesting and Foraging Habitat

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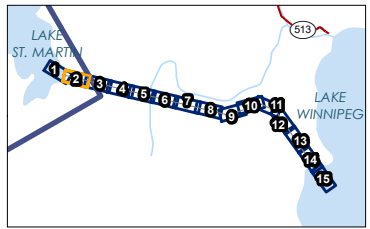
Figure 2

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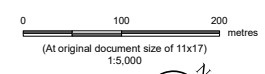


- Legend**
- Channel Centreline
 - Channel ROW Boundary
 - Channel / Drain Spoil Piles
 - Channel
 - Top of Dike buffer
 - Quarter Sections
 - Critical Habitat within 10 x 10km Standardized UTM Squares
 - Eastern Whip-poor-will Habitat Mitigation Area
- Land Cover Class**
- Deciduous Forest - Dense

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N
2. Data Sources: Government of Manitoba, Stantec Consulting, Hatch, EcoLogic
3. Background: Air photo courtesy of Microsoft Bing

*Ground truthing required for confirmation of wetland areas (some wetlands on the map may not actually exist, or, some existing wetlands may not be identified on the map)



Project Location
 Near Lake Manitoba & Lake St.Martin
 Manitoba

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 Lake Manitoba & Lake St.Martin Outlet Channels Project

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Figure No. **Figure 3**

Title
**LSMOC Eastern Whip-poor-will
 Habitat Mitigation Areas (SAMPLE)**

Prepared by AC on 2020-11-26
 TR by LW on 2020-11-26

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 PURPOSES ONLY**

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APPENDIX 2

Biophysical Attributes of Critical Habitat for Eastern Whip-poor-will

Table 1: Biophysical Attributes of Critical Habitat for Eastern Whip-poor-will¹

Components of Habitat Suitability	Biophysical Attributes
Regional context	Forests (e.g., deciduous, mixedwood, coniferous, treed wetlands) and open habitats (e.g., shrublands, fallow fields, regeneration following fires or clear-cuts, rock and sand outcrops; shrubby wetlands) form a mosaic
Habitats suitable for both nesting and foraging	A.1 Forests with sparse to moderate tree cover or open habitats AND A.2 Sparse to moderate shrub and herbaceous cover AND A.3 Well-drained soils (e.g., sand, sandy-loam) ☑ <i>Within an atlas square, includes all corresponding areas of 3 ha or more</i>
Habitats suitable for nesting only [must be adjacent to foraging habitats]	A.4 Forests with a dense tree cover AND A.5 Sparse to moderate shrub and herbaceous cover AND A.6 Well-drained soils (e.g., sand, sandy-loam) ☑ <i>Within an atlas square, includes all corresponding areas up to 30 m on the interior side of the forest edge</i>
Habitats suitable for foraging only [must be adjacent to nesting habitats]	A.7 Forests with sparse tree cover or open habitats AND A.8 Dense shrub cover AND A.9 Soil drainage is deficient ☑ <i>Within an atlas square, includes all corresponding areas up to 1,250 m from the edge with suitable nesting habitat</i> OR A.10 Agricultural land with scattered shrubs or trees (e.g., hedgerows) that can be used as perches ☑ <i>Within an atlas square, includes all corresponding areas</i>

¹ from the federal recovery strategy for the eastern whip-poor-will (ECCC 2018a).